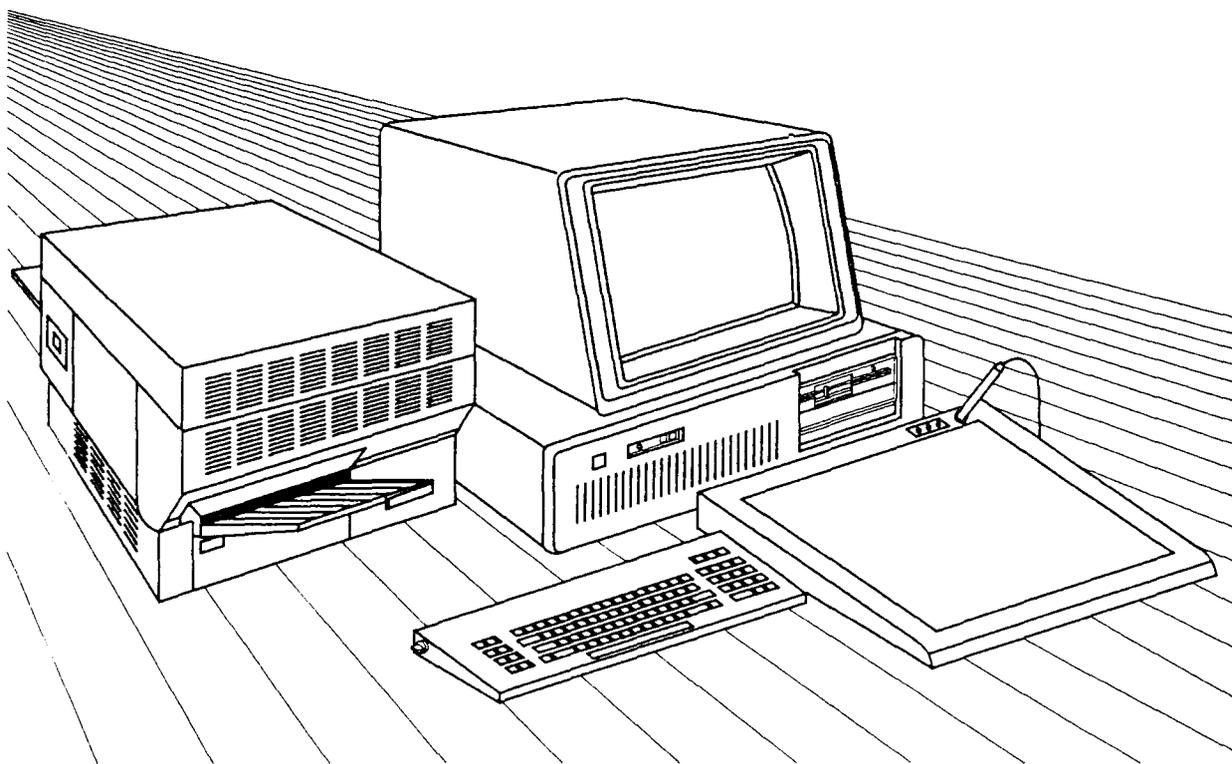


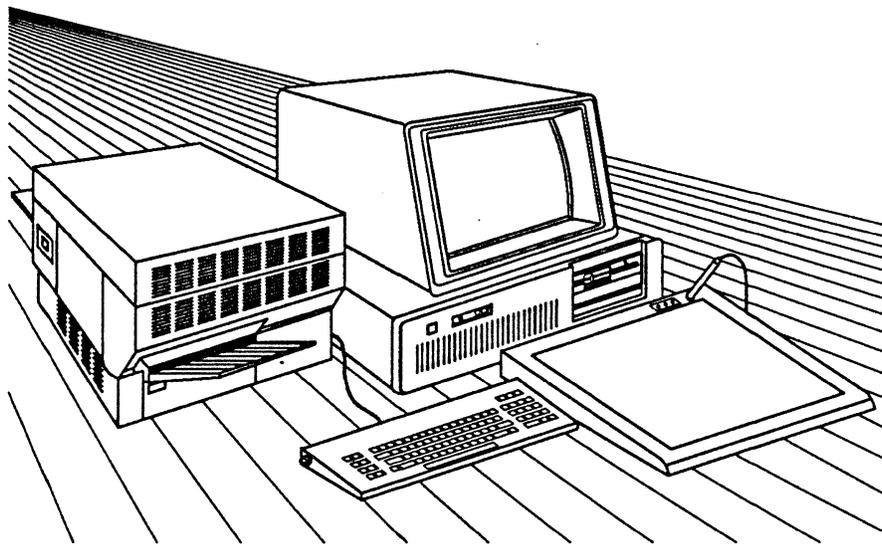
MECCA III USER'S GUIDE



MECCA III

Electronic Desktop Publishing System

USER'S GUIDE



VOLUME 0

READ ME FIRST!

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Manual written by Isaac Bonewits.

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Section 1: What You Should Have

When you receive your MECCA III system you should have the following pieces of equipment:

- An IBM Personal Computer AT with 512 kilobytes of RAM
- A one-and-a-half megabyte memory board from Amgraf (inside the PC/AT)
- A MECCA III graphics board from Amgraf (inside the PC/AT)
- A standard IBM PC/AT keyboard
- A standard IBM monochrome monitor
- A special High Resolution color monitor from Amgraf
- A Hitachi graphics pad ("Hicomscan Data Tablet Digitizer") with electronic stylus
- One or more of the following output devices:
 - Apple LaserWriter laser printer
 - Autologic APS-5 or Micro-5 typesetter
 - or other Amgraf approved printer or plotter
- Several cables and connectors to link all these together
- Manuals for all this stuff

Most MECCA III users will have had a representative of Amgraf, Inc. set up the system for them, but if you haven't (or if you need to move it later), complete hardware installation instructions are given in *Volume 1: Getting Started*.

Section 2: What You Should Know

In order to get the maximum advantage out of your MECCA III system, you really need to have some knowledge in these areas:

Basic DOS Commands

When you're not using MECCA III, your IBM PC AT can function as a normal AT, using IBM's Disk Operating System version 3.1, and running standard commercial DOS 3.1 programs. You should know how to format a blank floppy disk, make backup copies of your DOS 3.1 system disk (and other program disks), copy and rename and erase files, etc. *Inside the IBM PC AT*, by T. J. Byers (Micro Text/McGraw-Hill, 1985), or another basic book on the AT and its Disk Operating System, will prove helpful. You should be able to safely practice most DOS commands and procedures, as long as you *don't* try to copy DOS files to the Xenix-formatted harddisk while running DOS.

And obviously, if you're going to be using a commercial DOS word processing program to prepare text for later use, you'll want to be familiar with that program's commands as well, especially its "print to disk" procedures.

Basic Xenix Commands

The primary operating system used by MECCA III is Xenix. As with DOS, you'll need to know how to format floppies, copy and erase files, set up subdirectories on the harddisk, etc. You can start using MECCA III without this knowledge, but soon you'll want the added power and flexibility that knowledge will give you. A good book for beginners to get is *The Business Guide to the Xenix System*, by Yates, Emerson & Basham (Addison-Wesley, 1985).

Basic Geometrical Terminology

If you aren't the person in your organization who normally creates graphics, but you do intend to use MECCA III for this purpose, you might find it useful to review a high school or grade school text on basic geometry. You should be familiar with such terms as "line," "intersection", "rectangle", "circle", "arc", "tangent", "angle", "midpoint", "rotation", etc.

Basic Typesetting Terminology

If, on the other hand, you know a lot about graphics, but little about typesetting, you'll want to pick up a passing familiarity with such concepts as "points", "faces", "styles", "flushing", "kerning", "headers", "footers", "callouts", etc.

Section 3: What You Should NOT Do

Your MECCA III system is pretty sturdy. If everything is hooked up properly, it's hard to do any serious damage to the hardware or the software, as long as you remember these three simple rules:

Don't turn the power on to the AT and the LaserWriter simultaneously. Turn the power on to the computer/monitor/pad combination first, wait a few seconds, then turn the LaserWriter (or other output device) on. Or you can reverse the order. Just don't turn them all on at the same moment, in order to avoid causing a power surge. The same rule holds for turning the power off, but...

Don't turn the power off without "shutting down" Xenix first. Unlike DOS, Xenix can be stuffy about leaving. If you don't say a "formal goodbye" to it, it may retaliate by damaging your software and data files on its way out the door. So always be polite and go through the official ceremony for "shutdown" before you power off.

Don't panic! If you think you're in trouble, just call Amgraf's Help Hotline (see *Volume I's* introduction for details). If your system seems to freeze at 3:00 am, or on a weekend, relax. If necessary to avoid a major loss, you can leave MECCA III running "as is" for two or three days without damaging any of the hardware or software (though you might want to turn the graphics pad off). One of Amgraf's technical specialists will be able to help you long before your system's in any real danger.

Section 4: Your MECCA III Documentation

Because MECCA III is a complex and powerful system, we've broken its instruction manuals into bite-sized (or is that "byte-sized"?) pieces, in order to make the information in them easier to digest.

Volume 1: Getting Started -- This will give you the most basic instructions on how to set up and use your MECCA III system. You'll be taught simplified versions of the more complex procedures described in the later volumes. Because of the large number of previously prepared (or "canned") page formats and graphics supplied by Amgraf, some users may never need to go beyond these beginner's methods, although most of you will want to.

Volume 2: Batch Composition -- This will teach you how to prepare text files with "embedded codes" that MECCA III can read and use to provide automatic electronic page makeup and typesetting. Included is a complete listing of all the available codes, with hints and examples on how to best use them.

Volume 3: Illustrating and Drawing -- This will give you instructions on creating both simple and complex graphics, with dozens of powerful commands for copying, combining, rotating, mirroring, stretching and otherwise altering your originals. You'll also learn how to save complete or partial graphics, and how to later merge these into text pages for "outline-free" electronic pasteup.

Volume 4: Page Formats, Tables and Forms -- This reference text will give you examples and instructions on using the dozens of page formats, tables and forms provided by Amgraf, and will also teach you how to create your own for any imaginable purpose.

Volume 5: System Maintenance -- This volume gives you technical details about keeping various parts of your software up-to-date, such as the spelling and hyphenation dictionaries, kerning tables, the symbol libraries, adding new type fonts and special characters, etc.

As time goes by and even more features are added to MECCA III, we'll be adding additional volumes of documentation, to make sure that every bit of information you need is at your fingertips.

MECCA III User Guide Comment Form

RETURN TO:

Debra Poll
Amgraf, Inc.
1501 Oak Street
Kansas City, Missouri 64108-1424

If you use this form to forward questions, comments or useful information related to the MECCA III User Guide, they'll get to the people at Amgraf who will most appreciate them! In fact, you might want to make photocopies of this page, use them, and keep this original clear for future use.

COMMENTS:

Note: If you found an error in the manuals, or your people have been adding useful marginal notes, please send us copies of those pages, so we can improve the next version of the documentation.

FROM:

Company: _____

Name: _____

Address: _____

City, State, Zip Code: _____

Telephone Number: () _____ DATE: _____

PLEASE ENCLOSE ALL AVAILABLE MATERIALS WHICH MAY HELP DETERMINE THE CAUSE OF THE PROBLEM.



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REPORT NUMBER
(FOR AMGRAF USE)

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1. THIS FORM SHOULD BE FILLED OUT COMPLETELY, PLEASE TYPE OR PRINT LEGIBLY, AND MAKE 3 COPIES.
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1501 OAK STREET
KANSAS CITY, MO 64108-1424
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 BOX/BUILDING NO. _____ DATE MAILED _____
 STREET _____ PERFORMANCE TYPE (CHECK ONE)
 CITY _____ STATE _____ ZIP _____ - STOPS PRODUCTION COMPLETELY
 CONTACT NAME _____ - LOSS OF PRODUCTIVITY
 HOURS AVAILABLE _____ - OTHER (MINOR)

P.C. MANUFACTURER _____ TEXT FILE NAME _____
 WARRANTY NO. _____ TEXT FILE NAME _____
 MECCA III SOFTWARE VERSION NO. _____ GRAPHIC FILE NAME _____
 PROBLEM NAME (KEYWORD) _____ GRAPHIC FILE NAME _____
 DISKETTE ENCLOSED? _____ FORMAT FILE NAME _____
 HARD COPY ENCLOSED? _____ FORMAT FILE NAME _____
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DESCRIPTION OF PROBLEM; INCLUDE INFORMATION ON HOW TO DUPLICATE IT

DETAILS:

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DATE RECEIVED	DATE VERIFIED	TYPE
RECEIVED BY	VERIFIED BY	RESOLUTION CODE

PROBLEM SOLUTION _____

_____ BY _____ DATE _____

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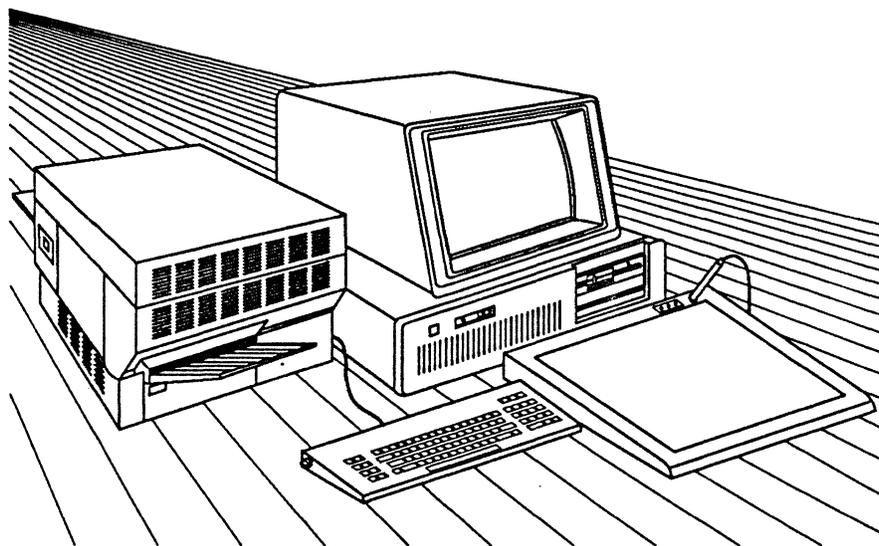
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MECCA III

Electronic Desktop Publishing System

USER'S GUIDE



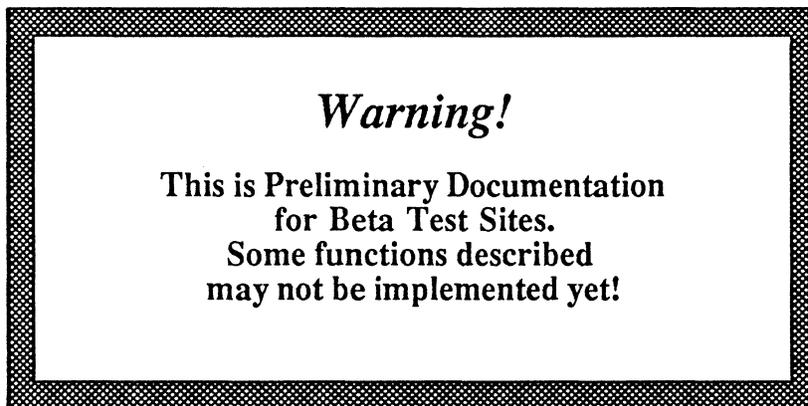
VOLUME 1

GETTING STARTED

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Manual written, edited and produced on MECCA III by Isaac Bonewits.



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Introduction: What This Book is About

Welcome to MECCA III -- a remarkable breakthrough in graphics and text communication technology! With this manual alone, you can start to use all of the basic functions provided by this incredible system. With the later volumes in this series, you can quickly become an expert in as many different aspects as you choose (while ignoring the parts you don't need more than the basics on). What can you do with MECCA III? We're glad you asked.

Typical Uses of MECCA III

Here are some of the many things that MECCA III has been or could be used for:

Newsletters and magazines, both public and private, commercial and nonprofit (MECCA III's low price and operating overhead makes it especially useful for nonprofit organizations operating on a tight budget).

Book publication -- anyone can be a book publisher with MECCA III. Camera ready copy, complete with "cutmarks" for any standard or unusual page size up to 8.5"x11", can be quickly prepared from raw text keyboarded by anyone who can use a word processor, with just a few hour's of work by an experienced MECCA III operator.

User guides, repair manuals, engineering reports, scientific reference texts, and other technical materials can be produced with remarkable ease and reliable precision.

Catalogs and price lists can be published and updated as often as necessary, with only those items that have actually changed needing to be retyped or redrawn. MECCA III's page formats, tables and forms will automatically adjust the entire text for you.

Proposals & announcements, business cards, restaurant menus, display advertising, and dozens of other routine typesetting tasks can be handled with speed and accuracy. With several PC's organized into a network built around a MECCA III system, you could set up your own typesetting business.

With MECCA III, your only limit is your imagination!

What's in this Book?

Chapter 1: Hardware Installation, will give you clear instructions on how to set up and attach all the pieces of the MECCA III system. It's no substitute for the manuals that come with the computer, the printer, etc., but it will help you tie everything together.

Chapter 2: An Overview of MECCA III, talks about all the different things you can do with your MECCA III system, explains what the standard and optional input and output devices are, and gives you information about standard learning curves.

Chapter 3: Starting the System, will teach you how to boot both DOS and Xenix, how to use the various menus that will appear on your monochrome screen, how to fire up MECCA III itself, and how to safely shut down the system when you're finished with it.

Chapter 4: Creating Simple Graphics, will guide you through the basic procedures of drawing, printing, and saving graphics, using both the graphics pad and the keyboard.

Chapter 5: Creating More Complex Graphics, will take you step by step through the process of drawing a typical organizational chart based on simple geometrical shapes. You'll learn how to shadow items, make multiple copies, insert and edit text, and merge graphics from other files.

Chapter 6: Using Batch Files and Page Formats, will give you some background on using embedded commands and prepackaged formats to produce automatically typeset, camera ready copy, complete with merged graphics.

Some Printing Conventions

There are some printing conventions used throughout the MECCA III user guides, in an effort to make it easier for users to understand the sometimes complex concepts involved.

Using Boldface Type

Boldface type is used to indicate keyboard keys and/or commands you can or should type into the computer in order to get various things accomplished. For example, if there was a DOS program called "FNORD.COM" that we wanted you to run, we would tell you to type **FNORD** [Enter]. Or we might want you to run a Xenix program called "Immanatize" on a file called "Eschaton", so we'd tell you to just enter:

Immanatize Eschaton [Enter]

and wait for the results. As you can see, sometimes these command entries will appear in the middle of a text paragraph, and sometimes on a line of their own, depending on what seems likely to be easiest to understand.

Using "[" and "]" to Indicate Keys

Sometimes, as in the examples just given, you'll need to type a particular key as all or part of a command to the computer. That's when we'll use the square brackets (the "[" and "]"), in order to make it clear that we want you to press the [Enter] key, and not to type the letters "E", "n", "t", "e", and "r", or to use the [Del] (Delete) key instead of "D", "e", and "l". So most of the time in these manuals, if you see square brackets around a short word or symbol, look for a corresponding key on your computer keyboard.

If a combination of keys are required to produce a desired effect, we'll connect their names with hyphens, like this: [Ctrl]-[A] for "hold the [Ctrl] key down while pressing [A]" or [Ctrl]-[Alt]-[Esc] for "hold the [Ctrl], [Alt] and [Escape] keys down all at the same time."

Using "{" and "}" to Indicate Options

When you're working with MECCA III, you'll be constantly using the electronic stylus on the graphics pad to choose options from the various menus and submenus offered. Many of these options are called by common names that might also appear in regular text, like "edit" or "save files". In order to let you know when we're referring specifically to an option to be chosen, we'll use the curly brackets (the "{" and "}"). For example, if we wanted to discuss the ability to "zoom up" on a portion of the screen's "window" view of your graphic, we'd talk about the {Window} and {Zoom} options.

Help!

A hotline for MECCA III users is maintained by Amgraf, Inc., at (816) 474-4797 during regular Central Time Zone business hours. Before you call, please make sure that you have read, and to the best of your ability, understood this manual, as well as those manuals that came with your PC/AT, graphics pad and LaserWriter (or other output devices). If you can clearly identify all your equipment and understand what each piece is supposed to do, it will be much easier for us to help.

Chapter 1: Hardware Installation

Checking All the Parts

Your MECCA III system consists of the following pieces of equipment:

- An IBM Personal Computer AT with 512 kilobytes of RAM
- A one-and-a-half megabyte memory board from Amgraf (in the PC/AT)
- A MECCA III graphics board from Amgraf (in the PC/AT)
- A standard IBM PC/AT keyboard
- A standard IBM monochrome monitor
- A special High Resolution color monitor from Amgraf
- A Hitachi graphics pad with electronic stylus
- One or more of the following output devices:
 - Apple LaserWriter laser printer
 - Autologic APS-5 or Micro-5 typesetter
 - or other Amgraf approved printer or plotter
- Several cables and connectors to link all these together
- Manuals for all this stuff

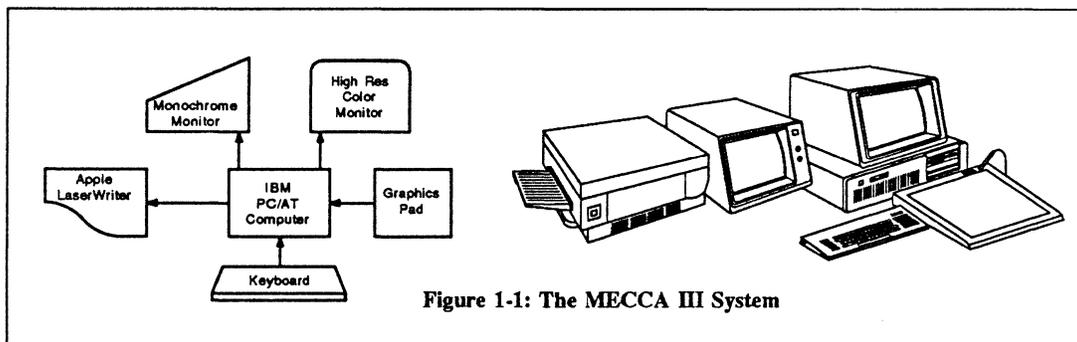
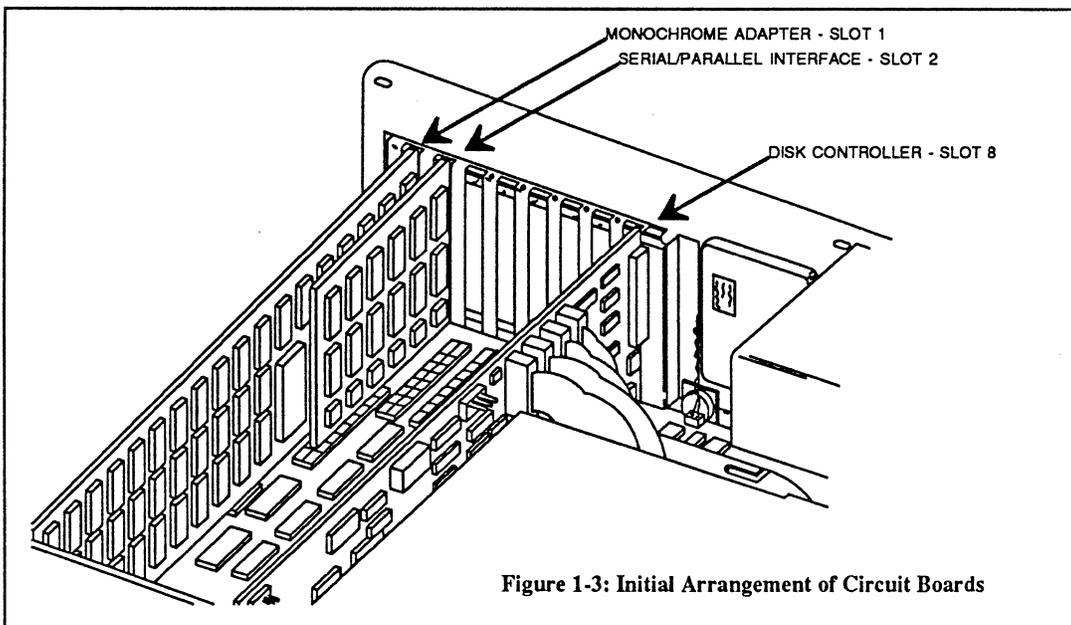
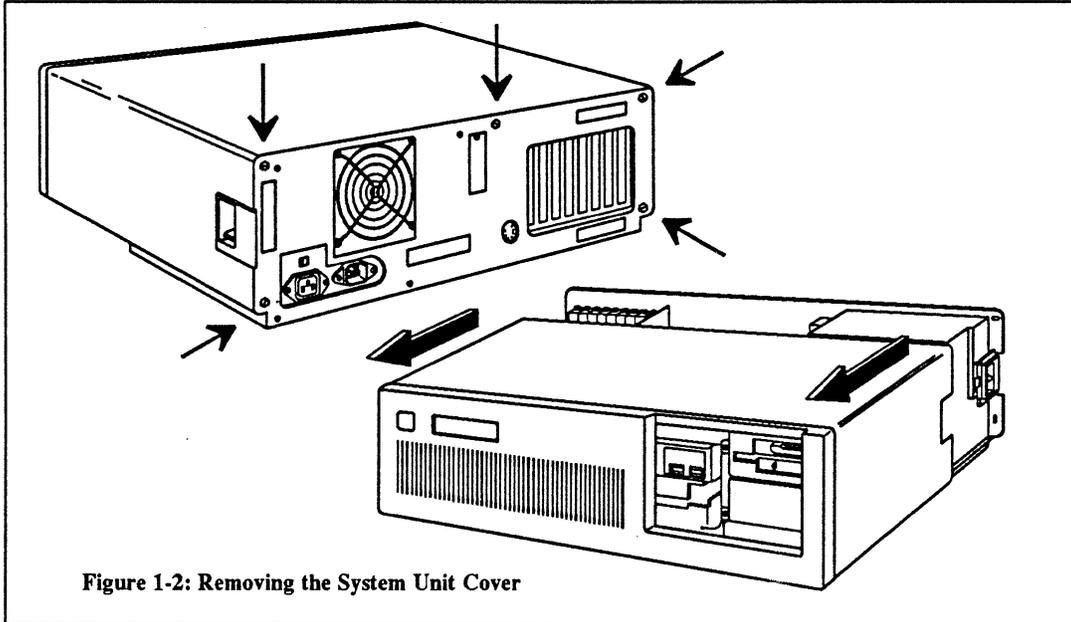


Figure 1-1 shows one common arrangement of the equipment in both a picture and a diagram style. If you're like most MECCA III users, someone from Amgraf, Inc. set up the system for you. But whether they did or not, sooner or later you'll need to move it (across the office or across the country), so complete hardware installation instructions follow. You can skim through this material lightly if you don't need it at this instant, but if you *are* going to do the physical installation yourself, *please* read it very carefully. A careless mistake in the hardware installation process could cause both you and us a loss of time, energy and/or money fixing the results.

Installing Your PC/AT and the Two Boards

The brains of your MECCA III system are to be found inside your IBM PC/AT. Without the AT, all the rest of the equipment is useless, so it's important to make sure that you have read and understood *all* of the manufacturer's instructions for unpacking and/or moving the System Unit (that's what IBM calls the main box of the computer).

Note: if you're moving your MECCA III system, make sure that the last thing you do before the move is to boot the AT Diagnostics Disk and run the program that locks the read/write heads safely. Then unplug the System Unit immediately, so that no one else powers it up and unlocks the heads again.



The System Unit's cover is retained by the larger slotted screws on the System Unit's back panel. Remove these screws with a screwdriver or appropriately sized nutdriver. Remove the System Unit's cover by pulling it forward from the front of the unit, lifting the cover up slightly for the last six inches or so. See Figure 1-2 for details.

As you look at the opened System Unit from the front, you can see a number of "expansion slots" located at the left rear of the box. The two on the far left and the one on the far right may be the only ones with circuit boards plugged in, as in Figure 1-3, or a different combination of boards may be present.

If you got your PC/AT directly from Amgraf, then the memory and graphics boards will already be in their correct slots for your type of color monitor (see Figure 1-6). Otherwise, you'll have to move any incorrectly placed boards. So here's how: First, touch something metal elsewhere in the room, in order to discharge any static electricity you may have in your hands. Then locate the expansion slot that has the "wrong" board in it. Use a small screwdriver or a hex nut driver to remove the screw that holds the board in place. Grasp the board gently but firmly in at least two spots along the top, and rock very slightly towards the front and back (*not* the right and left) of the System Unit, while lifting. See Figure 1-4.

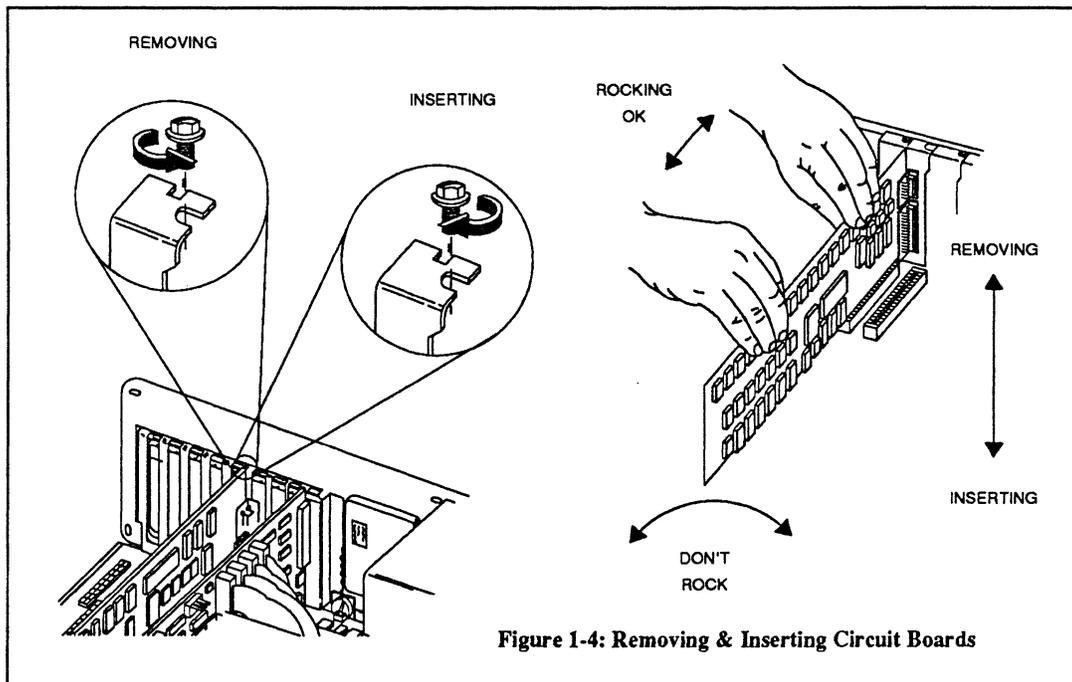
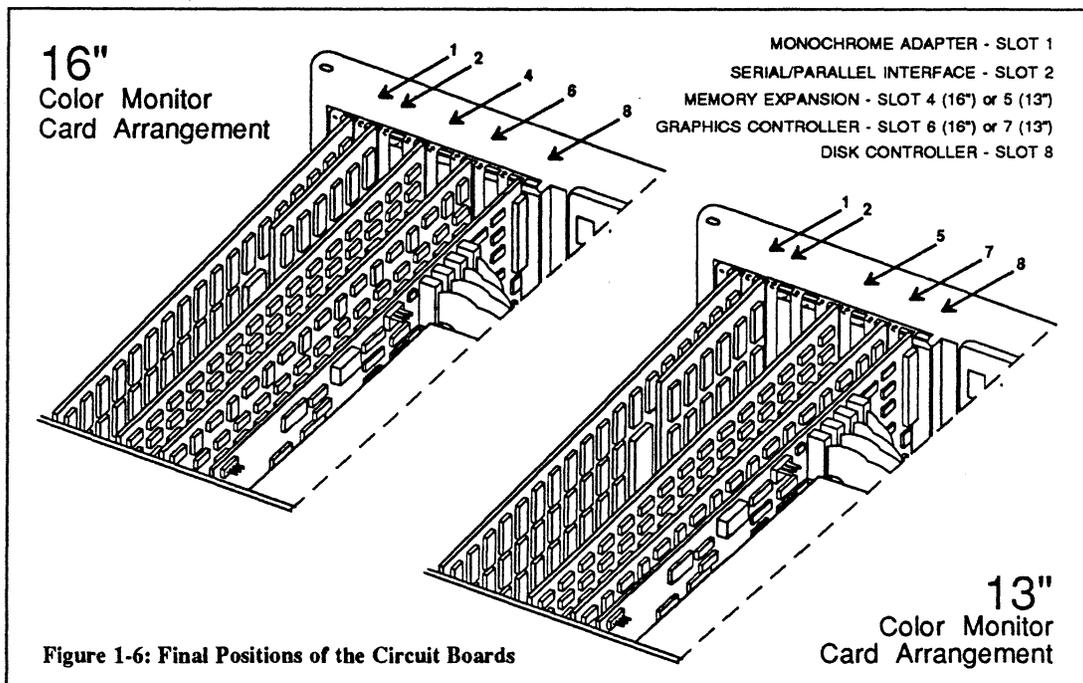
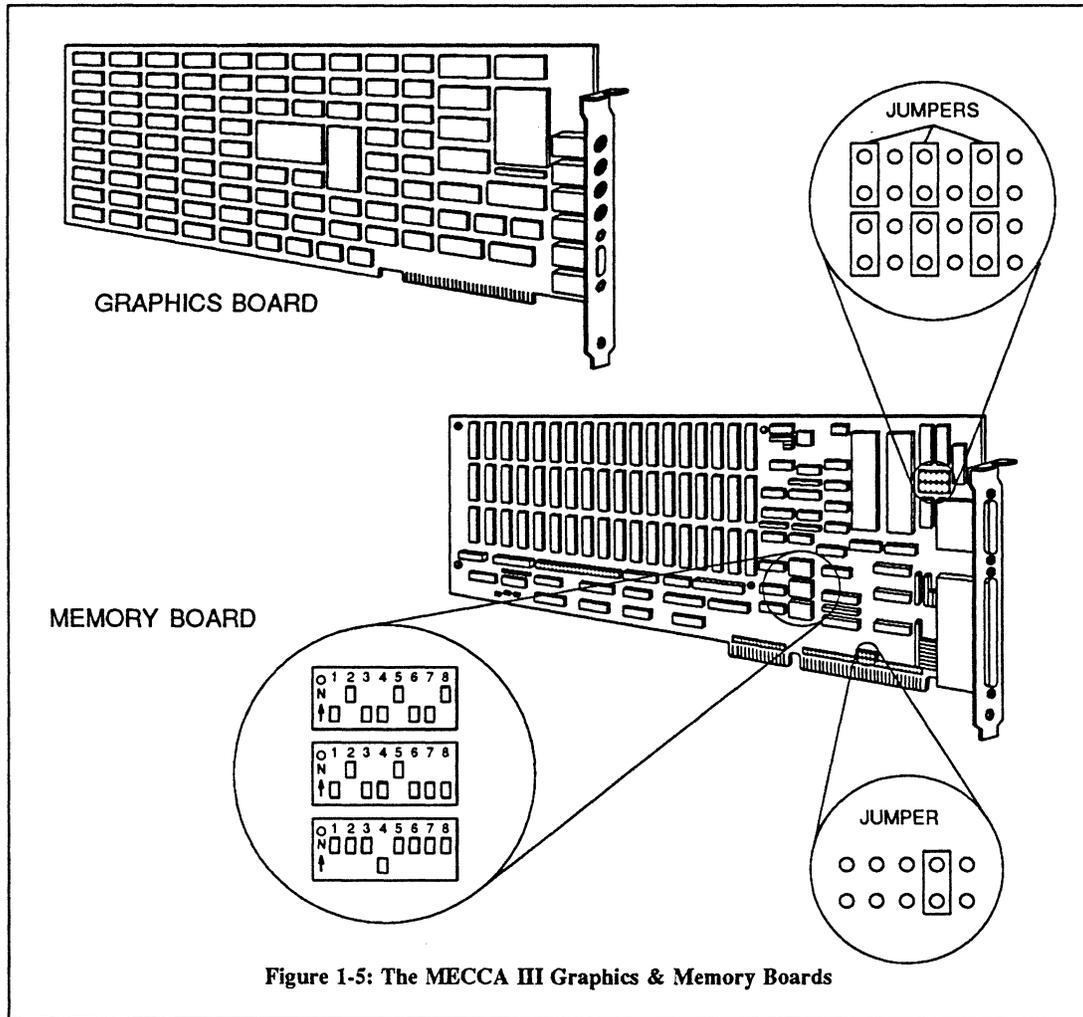


Figure 1-4: Removing & Inserting Circuit Boards

Locate the correct slot for that board to be in (see Figure 1-6 again). Remove and keep the retaining screw for that slot, and remove the dummy bracket (if present). Now just insert the board into its new slot exactly the same way you removed it, gently but firmly pressing it into position. Naturally, the board should be oriented in the System Unit with its bracket toward the rear of the System Unit, just as it was when you removed it. Then you can replace the retaining screw.

Once you've got the standard boards in their correct slots, you can easily insert the special MECCA III memory and graphics boards into their spots. Figure 1-5 shows a closeup view of these two boards, so you can be sure which one is which. The jumper and DIP switch positions shown should already be set when you receive the boards.



Check Figure 1-6 one more time to make sure that every board is where it belongs. Then you can put the System Unit's cover back on, starting with the cover tipped slightly upward at the front and gradually leveling it as you move it back. Replace the screws of the back panel that hold the cover. That's all there is to this part!

Installing Your Monitors

Figure 1-7 shows front and back views of both the IBM PC monochrome CRT display and the MECCA III high resolution color monitors. It's fairly easy to tell the color and the monochrome ones apart, even when off, because the color monitors are much more complex from the back, as well as being larger.

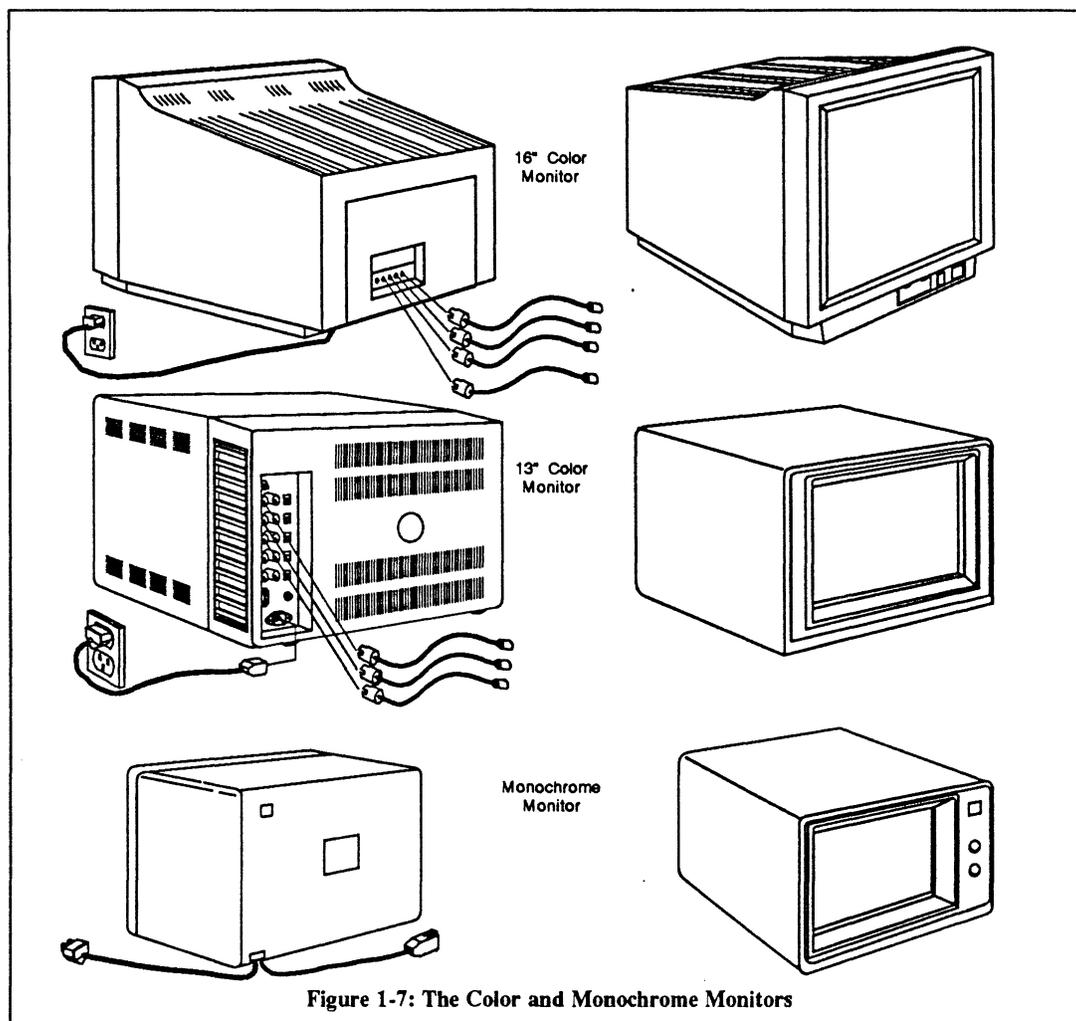
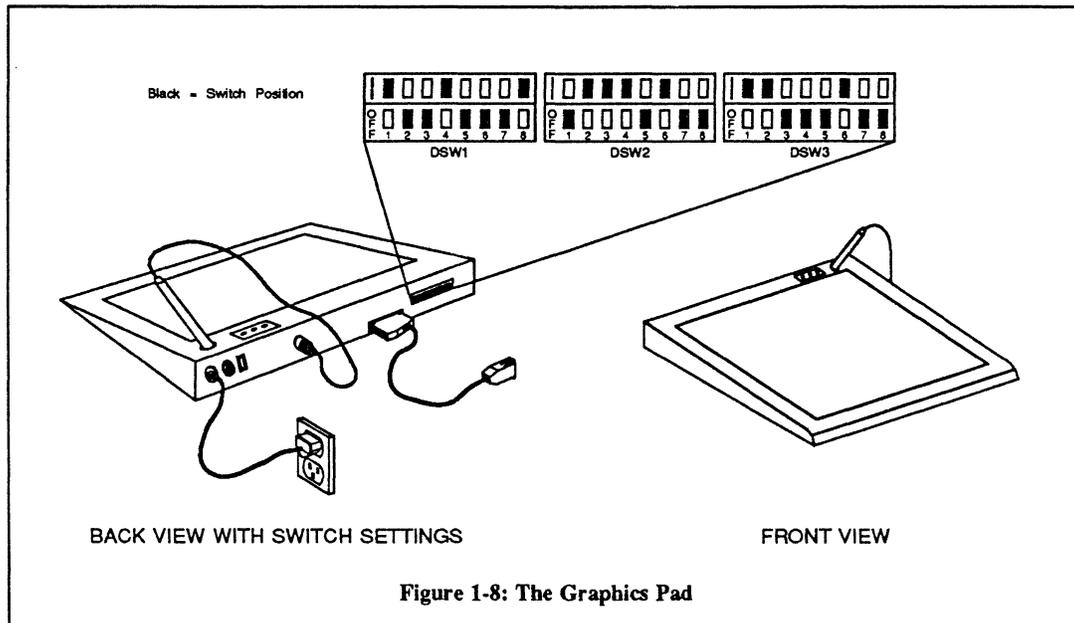


Figure 1-7: The Color and Monochrome Monitors

All you need to do with them is to (a) figure out exactly where you want to put them physically, and (b) attach the power and data cables. Most of our illustrations assume that you'll put the color monitor on top of the PC/AT and the mono monitor off to the side. But as long as they're close enough for the cables to reach the back of the System Unit, you can put them anywhere that's comfortable for you to view them from. We'll tell you about the cables later.

Installing Your Graphics Pad & Stylus

This part is pretty easy too. Figure 1-8 shows closeups of the graphics pad and stylus. All you really need to do is to plug the stylus into its socket, the power cord into power, and the data cable into the System Unit. Details on doing this appear in the section on cables near the end of this chapter. The DIP switch positions shown in Figure 1-8 should already be set when you receive the pad. For now, just position the pad comfortably for your righthanded or lefthanded use. Note: *don't* leave floppy disks on top of the pad -- it'll erase them!



Installing Your Apple LaserWriter or Other Output Device

Most people who have MECCA III systems are using them with Apple LaserWriter brand laser printers, so that's how most of the illustrations we're using are done. Figure 1-9 shows front and back views of the LaserWriter, along with the correct setting for the 4-position switch (toward the 9600 baud label). The 25-pin socket is the one that usually attaches to a cable back to the System Unit (see the cable discussion coming up real soon now).

To install the LaserWriter, see the manual that comes with it to make sure that you know how to fill it with paper, cartridge, etc., then just figure out where a convenient place to put it is, and do so.

If you are using MECCA III with an APS-5 phototypesetting system, your output device probably won't be right next to the rest of the MECCA III setup, but instead a long cable will go off to wherever the machine happens to be. Naturally, you'll want to consult the appropriate manuals for your equipment in order to make sure that it is setup to receive the sort of data that MECCA III will be sending to it.

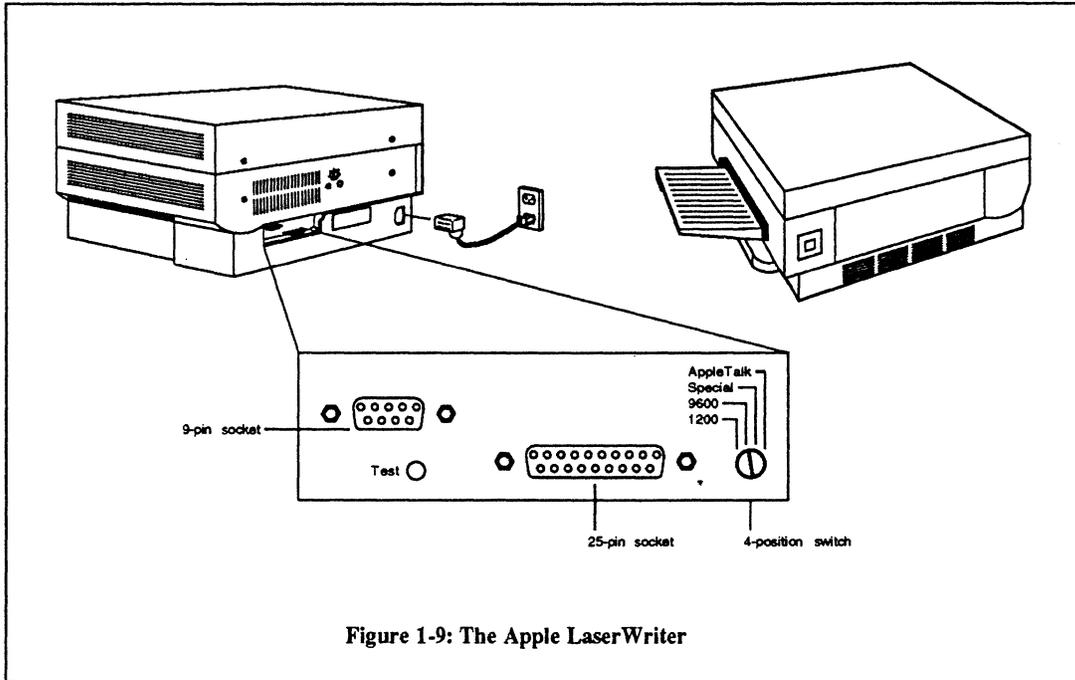


Figure 1-9: The Apple LaserWriter

Attaching all those cables

This is the only really tricky part of the hardware installation, since several of the cables resemble each other, so we'll take it one small step at a time. Read through this entire section carefully before you begin following the instructions.

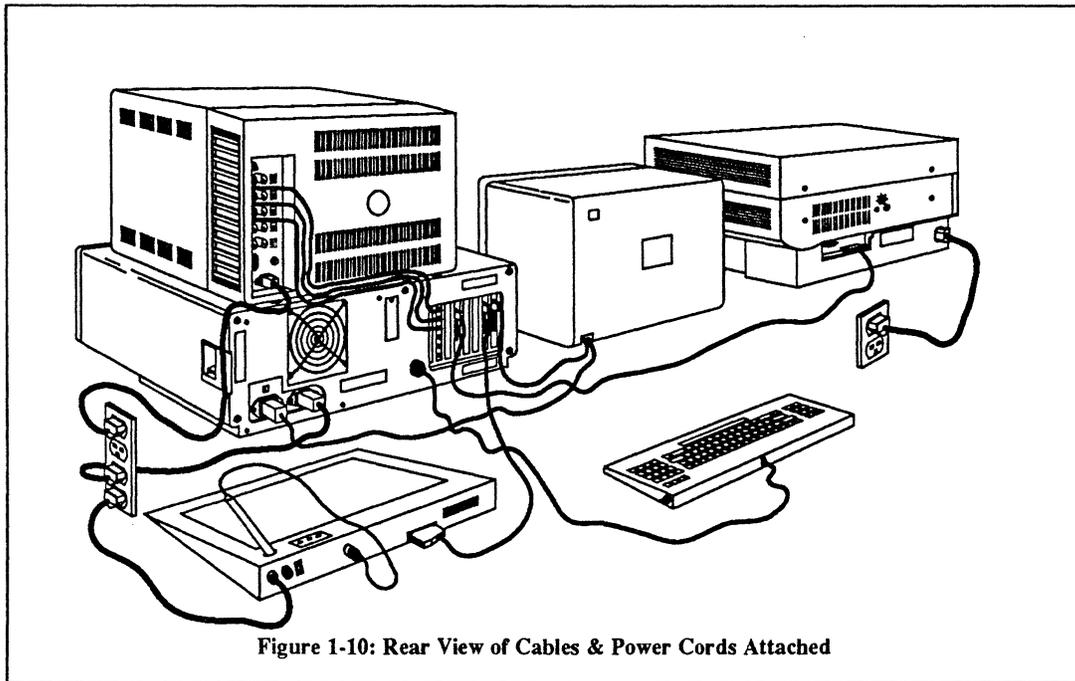


Figure 1-10: Rear View of Cables & Power Cords Attached

Figure 1-10 shows a rear view of the final cable arrangements, though the exact positions of the units themselves will, of course, depend on your decisions.

Figure 1-11 shows a full and closeup view of the back of the System Unit, which is where all the rest of the hardware plugs in, as well as closeups of the socket areas and power switches of the other equipment. *Make absolutely sure that every unit with an on/off switch has it set in the OFF position!* Otherwise you could hurt your system very badly.

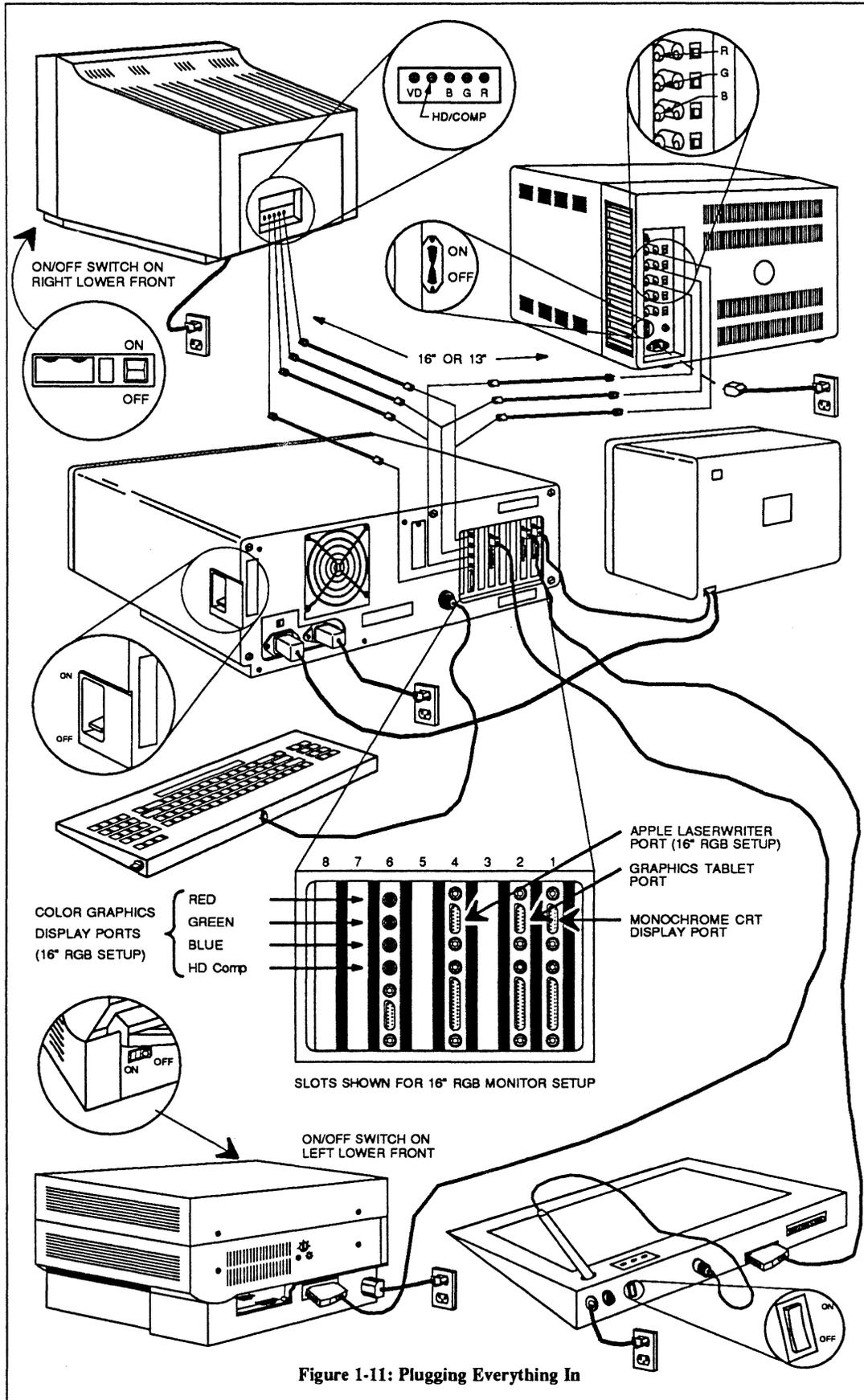
The monochrome monitor is a good place to start. It's got one power cord and one data cable. The power cord plugs into a reverse socket next to the System Unit's power cord. The data cable plugs into the monochrome graphics card on the far left of the System Unit in Slot 1.

The two color monitors both have power cords, which go to a wall socket or power strip. The 13" one also has three data cables which go from the top three left sockets of the monitor, labeled "Red", "Green", and "Blue", to the exactly corresponding top three sockets on the MECCA III graphics board in Slot 7. The 16" one has four sockets clearly labeled (from right to left) "Red", "Green", "Blue", and "HD/Comp". These go in that order to the four sockets, from top to bottom, on the graphics board in Slot 6.

The graphics pad has a power cord, which goes to a wall socket or power strip. It has a data cable running from the stylus, which should be plugged into the back of the pad, and another running from the pad to the top socket in Slot 2 of the System Unit.

The LaserWriter has a power cord, which should go to a wall socket. *Don't* plug it into the same power strip that other units may be attached to, in order to avoid having power go to all items simultaneously at startup, and thus accidentally causing a power surge that could damage the software or hardware. The LaserWriter's data cable goes to the top socket of the expanded memory board, in the System Unit's Slot 4 (if you have a 16" RGB monitor) or Slot 5 (if you have the 13" one).

Now you can plug the System Unit's power cord into the wall or power strip, making sure all power switches are OFF. Finally, plug the keyboard into its socket, and you'll be ready to go.



Chapter 2: An Overview of MECCA III

The Purpose of MECCA III

MECCA III is a complete electronic desktop publishing system that will enable you to merge text and graphics from a variety of sources, to produce camera ready copy suitable for printing. It can easily replace and surpass bulkier systems costing literally ten times as much, since it is based on the latest in microcomputer technology, instead of the minicomputer and mainframe computer hardware used by other systems. Writers, editors and typesetters can become graphic designers, while technical illustrators and artists can at last be sure that the typesetting on their work is exactly the way they want it to be.

With one MECCA III system and a good photocopy machine, you could set up your own newsletter publishing house. With several MECCA III's tied into a network, you could run an entire internal communications division for a multinational corporation. Repair manuals and user guides for thousands of products can be produced quickly and easily, with the text and graphics closely integrated by the authors, and with updates instantly available! Architects, engineers, drafters, interior designers and other technical graphics users can create, edit and combine a library of frequently used graphic elements, to produce precise, technically accurate artwork in minutes.

Anyone who needs to communicate complex ideas and images on paper, quickly and precisely, will find MECCA III a liberating tool.

What You Can Do with MECCA III

MECCA III enables you to prepare text files for batch page composition (automatic typesetting) with a minimum of embedded codes. Text preparation can be done on any DOS or Xenix compatible computer, either a standalone system writing to floppies or any member of a network tied into the PC running MECCA III. It's possible to have several people keyboarding raw text with only one or two others inserting embedded codes as necessary.

With MECCA III you can prepare standard page formats to be accessed by the software every time a certain type of job needs to be done. If you know that every issue of your newsletter has the same margins, typesizes and column pattern, then you can design a format just once, and never have to worry about it again -- unless you decide to change it, which can also be done quickly! If all the tech manuals prepared by your department use the same types of chapter, section and subsection headings, with odd and even pages using a different layout, you can figure out all the details once, create a standard format, and relax.

If you have ever had to typeset tabular materials, or business, engineering or scientific forms, you know that they are normally difficult and unpleasant to produce. With MECCA III, you can create standard tables and forms files to take care of the details, while you concentrate on the content.

Best of all, Amgraf supplies dozens of sample page formats, tables and forms that you can use as-is, or customize to your personal needs.

If you're used to using rulers, protractors, triangles, technical pens and other manual tools to do precise technical illustration, you'll be delighted with MECCA III's graphics creation abilities. You can draw lines with 1/723 of an inch accuracy in length, circles and arcs with the same precision of radius, copy parts of a picture with 100% identity, rotate elements of your drawing through all 360 degrees in all three planes, scale the size up or down by any percentage, and more.

You can take illustrations created on different occasions and combine them to create new ones. You can take any graphic you've created and merge it into a text file, either automatically through the batch pagination process, or interactively on the color monitor.

The MECCA III Environment

MECCA III was originally designed to run on an IBM PC/AT microcomputer, but will also run on NCR's PC-8 system and other AT "clones" that are 100% hardware *and* software compatible. We assume that you'll have had PC-DOS (or MS-DOS) 3.1 supplied with your machine. The MECCA III software itself runs under the Xenix System V operating system, and is written in the C language. Source code listings are available to qualified programmers by special arrangement with Amgraf, Inc., just in case you need to do some special customization work.

The standard input devices are the computer's keyboard, plus the graphics pad and electronic stylus. You can also use DOS or Xenix-formatted floppy disks with straight ASCII text files, or graphics files generated by standard graphics output devices (special data filter programs called "CTU"s -- Custom Translation Utilities -- are available from Amgraf if needed). Naturally, you can also use the communications ports on your PC to import similar files over cables.

The standard output devices are (1) a monochrome monitor for DOS and Xenix displays, (2) a 13" high resolution *or* 16" ultrahigh resolution color monitor for the MECCA III display, and (3) either a laser printer and/or a phototypesetting system. We currently support the Apple LaserWriter and other devices using the PostScript interface language, including:

LZR-2600 and *LZR-2665* laser printers from Dataproducts Corp.

QMS-PS 800, 1200, and 2400 laser printers from QMS, Inc.

Linotronic 100 and *300* typesetters from Linotype Co.

We also support the APS-5 and Micro-5 phototypesetters from Autologic, Inc., and other phototypesetting systems compatible with Amgraf's GRAFICA software.

Figure 2-1 shows a diagram of the basic input/output design of MECCA III.

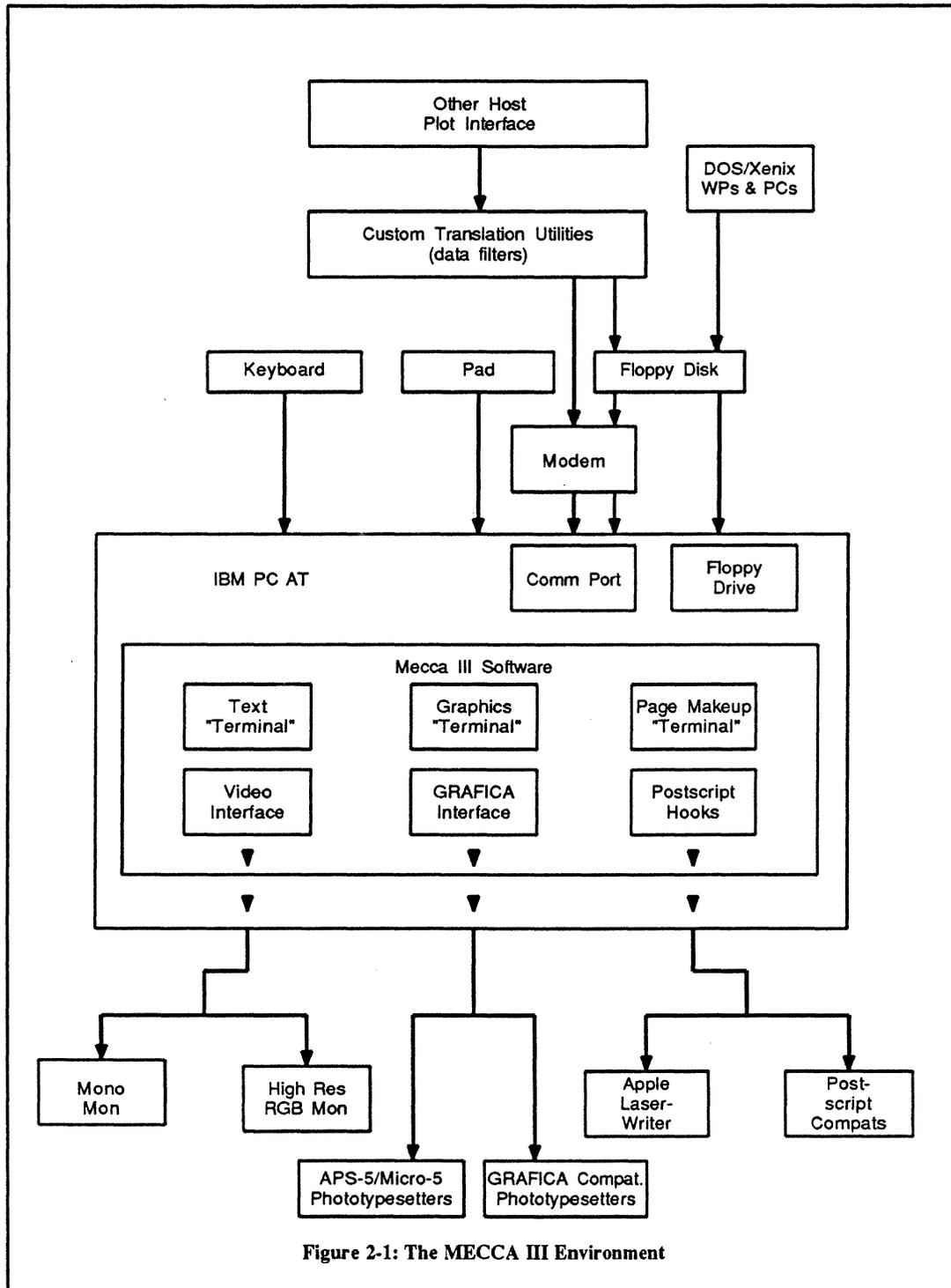


Figure 2-1: The MECCA III Environment

MECCA III Learning Curves

All these procedures will be explained in the remaining pages of this manual, and the other volumes in this series. We estimate that the normal learning process for MECCA III will run something like this:

The average technical illustrator will take one or two days to learn the basics of using MECCA III to create graphics. He or she should be able to produce almost any drawing desired within a couple of weeks, and will reach peak efficiency in about three months.

The average word processing typist *without* a typesetting background can learn the basics of preparing text files for batch pagination in one day, and will be able to handle most general needs within a couple of weeks. He or she should reach peak efficiency in about three months, and will probably always use "canned" formats.

A person *with* a typesetting background will have a similar learning curve, but will be able to create new formats within a few days. (Writing a format is a programming sort of task. A programmer couldn't do it alone, but could do it working with an experienced typositor.)

A person with a background in layout and pasteup could learn the basics of rearranging a batch composed file on the MECCA III screen in a day, and would reach peak efficiency in about a month.

Managers should arrange for employees who will be using MECCA III to be able to concentrate on study and practice for the first two or three weeks, to the exclusion of other responsibilities.

Chapter 3: The Monochrome Menu Functions

Your Two Monitors

Your MECCA III System comes with two television-like devices called "monitors". The first is the one that came with your PC. This usually shows green, amber or white letters on a black background and is called the "monochrome" (single color) monitor. Although your monochrome monitor *can* show graphics as well as text, with MECCA III you'll only be seeing text there. In fact, this is the main monitor you'll be using for preparing "batch" files, as explained in Chapters 6 and 7.

The second monitor you'll have is a color one, which will be used to display both graphics and text. It will probably be one of the two shown in Figure 1-7: either a 13" (diagonal) high resolution RGB (red-green-blue) monitor, with 512x480 pixels (dots), or else a 16" very high resolution RGB monitor with 1024x768 pixels. Different users prefer different degrees of resolution, so we make both available.

Almost everything we'll be discussing in this chapter has to do with the monochrome monitor, just as Chapters 4 and 5 are almost exclusively concerned with the color monitor. We should point out here that monitors, whether monochrome or color, are also sometimes referred to as "CRT's" (for cathode ray tubes), "displays" and "screens". If you want to be picky, "monitor" and "CRT" are usually applied to the entire box, while "display" and "screen" are normally used for the front part of the box that you spend all your time staring at. But to avoid monotony, we'll use the terms interchangeably most of the time.

A Word About Operating Systems

An operating system is a collection of programs that handle the routine "housekeeping" procedures necessary to shuffle information around inside the computer, and between it and the outside world. Without some sort of operating system, your computer has no way to communicate with you -- it can't show you what you need to see on the screen, it can't print anything out, it can't even receive your instructions from the keyboard! There are many different operating systems, some of which will only run on one brand of computer, while others are "industry standards" that are made in different versions to run on different brands. Some of them are called this-or-that "DOS" (which stands for "Disk Operating System"), "CP/M", "Xenix", etc.

Your MECCA III system is based on an IBM PC/AT microcomputer, so naturally you can use IBM's "PC-DOS 3.1", (or, if you are using a 100% hardware and software compatible AT clone from another company, "MS-DOS 3.1") and this is what we'll be referring to when we talk about DOS from now on. But the MECCA III programs themselves require a version of Xenix designed to run on PC/ATs. Much of this chapter will be about the latter operating system.

Before a computer can do anything else, it first has to "boot" an operating system. The word comes from "bootstrap" and is a reference to the old saying about "lifting yourself by your own bootstraps." The computer has just enough intelligence built into its wiring to go to the floppy disk drive (and if there's no floppy there, to the harddisk drive) and look for instructions on what to do next. The first instructions it receives are to load the operating system. Then you can get to work.

Booting DOS

You'll need to boot standard DOS 3.1 before using your MECCA III system. If you have a 13" color monitor, you'll have to run a DOS program called "DEMO13.EXE", or for the 16" monitors, "DEMO16.COM", the correct one of which will be provided to you by Amgraf on a formatted DOS diskette, complete with the DOS system files and an "AUTOEXEC.BAT" file. These DEMO programs simply set up the color monitor to handle input from a color graphics card.

(If you intend on using DOS word processing programs to produce your batch files, as discussed in Chapter 6, you'll naturally need to boot DOS in order to run them. Some DOS word processing programs may require "installation" to communicate with the LaserWriter through the Amgraf graphics controller card's serial port. Consult their manuals and Apple's.)

Fortunately, it's pretty easy to boot DOS. Just put your MECCA III DOS Disk into the floppy drive ("A:" Drive, if you have two), close the door and turn the power on to the PC/AT, the color monitor (the monochrome one will come on automatically if its power cord is plugged into the back of the System Unit), the graphics pad and the LaserWriter (in that order). The monochrome monitor will clear and begin to display messages indicating that your PC is going through its self-diagnostic procedures (counting its fingers and toes to make sure everything's there). After a while, you'll see a message saying something like:

```
Today's date is Wed 10-01-86
Enter new date mm-dd-yy or press Enter: _
```

If the date's OK, just press [Enter]. If not, type in the correct date using the pattern shown (two digits each for month, day and year, separated by hyphens) and then press [Enter]. After a moment or two, you'll see a similar message:

```
System time is 17:25:05
Enter new time hh:mm:ss or press Enter: _
```

Once again, you can change the information, this time by entering a new time (using a 24 hour clock), or you can simply accept the computer's version of what time it is and press [Enter] again. Then the computer will say something like:

```
A> AUTOEXEC
A> DEMO13
```

and you'll see your 13" color monitor display a geometrical pattern of colors and lines. If you're running DEMO16 instead, your 16" color monitor will go solid grey and a software notice will appear on it as well as on the monochrome screen. After another few moments, the computer will give the go-ahead to run your programs:

```
A> _
```

Since you now have what's called an "A-prompt" (that's the "A>"), you can type in the name of any other DOS programs you want to run (ignoring the ".EXE" or ".COM" after its name), and [Enter]. For example, if you need to run FNORD.EXE, type FNORD [Enter] or fnord[Enter]. Unlike Xenix, DOS doesn't usually worry about whether your commands are in upper or lower case letters. After a few moments to load the program into the computer's memory from the floppy disk, it will start running.

When you're finished running your additional DOS programs (if any), and you're back to the A-prompt, it's time to *either* turn the power off (if you're not going to use MECCA III just then), *or* to boot Xenix by first removing the DOS floppy and then pressing [Ctrl]-[Alt]-[Del] (holding down all three keys at once).

Don't do either of these (turning the power off or rebooting) unless you have a clear DOS A-prompt ("A>") or the final Xenix "shutdown" message telling you that it's safe to do so (see later in this chapter). Otherwise you could severely damage your software and data files.

Booting Xenix

This is even easier, since your MECCA III system will boot Xenix all by itself when the power comes on, unless you have a DOS disk in the floppy drive. As soon as the self-diagnostic tests are done, the computer will check for a floppy, then go to the hard disk for instructions. Soon you'll see this on the monochrome monitor:

```
XENIX System V
boot
: _
```

At this point you can press [Enter] or just ignore it, and in 15 seconds the booting will start automatically. The next message on screen is:

```
hd (40,0) xenix
```

and a bunch of copyright notices and technical details about the internal mechanics of the computer. Eventually you'll see:

```
Type CTRL-d to proceed with normal startup,
(or give root password for system maintenance): _
```

Obviously enough, you now type a [Ctrl]-[d]. Several seconds of grinding noises go by, and you're told:

```
Current system time is Wed Oct 01 17:05:05 CST 1986
Enter new time ([yymmdd]hhmm):
```

Unless the date and time are wrong, you just press [Enter]. If the date is OK, but the time is wrong, you type in the correct time in the "hhmm" format (meaning 5:25 pm = "1725"). If the date is wrong, type both the correct date and time, using two digits for each, using the format shown and ignoring Xenix's square brackets. For example, May 1st, 1987 at 3:05 pm would be entered as "8705011505". Naturally you're going to add an [Enter] at the end of the time/date correction.

The computer will make more noise for a while, then repeat the date to you with a startup message:

```
! *** cron started *** pid = 29 Wed Oct 01 17:05:25 CST 1986
xenix286! login: _
```

At this point, you type in whatever login name you've been assigned, using all lowercase letters, and [Enter]. Instantly you're asked for your password (which may simply be your lastname, or whatever else your System Manager has decided):

```
Password: _
```

and you type your password [Enter]. For example, your entries might look something like "rachel [Enter] welch [Enter]", or "adam [Enter] weishaupt [Enter]", or "george [Enter] sysmgr [Enter]", etc. Once this has been accomplished, the computer replies something like this:

```
*****
*****
Document Service Centers, Inc.
MECCA III Electronic Desktop Publishing System
Software Copyright (c) 1986 by Amgraf, Inc.
*****
*****
```

```
Terminal type is ansi
```

After about five seconds, the monochrome monitor's screen clears and you'll see a display very similar to that shown in Figure 3-1, which brings us to.....

The Monochrome Menu

This is when you'll normally start the MECCA III program, by pressing the [F8] key, as described later in this chapter. But for now, let's look at the various functions you have available to you on the monochrome monitor menu. The first thing to know about is that there are actually two main monochrome menus, one for "Major Functions" (that's the one in Figure 3-1), and one for "Minor Functions" (shown in Figure 3-2). There are also several monochrome submenus, plus special screen displays, for the various choices you make on the two main ones.

The box at the very top of Figures 3-1 and 3-2 lists the Xenix "Path Level" you are at for a given directory display (there's an explanation of that later in this chapter). The box at the very bottom lists what commands you have available via the Function Keys (see next section) at any given moment. Since these Function Key assignments are the most important part of the monochrome menus and submenus, we'll usually just show them inside their box instead of the entire screen. Sometimes we'll call these menus by their full "formal" names (such as "Major Functions" or "Xenix Floppy Disk Functions"), and sometimes by the abbreviated names (such as "MajorFcn" or "XnxFdFcn") that go with the Function Keys.

The names listed in the middle of the screen are all the files (probably only directories), that happen to be in your user area when you log-on. Usually this will be a short list, like that shown in Figures 3-1 and 3-2, when you are first using MECCA III.

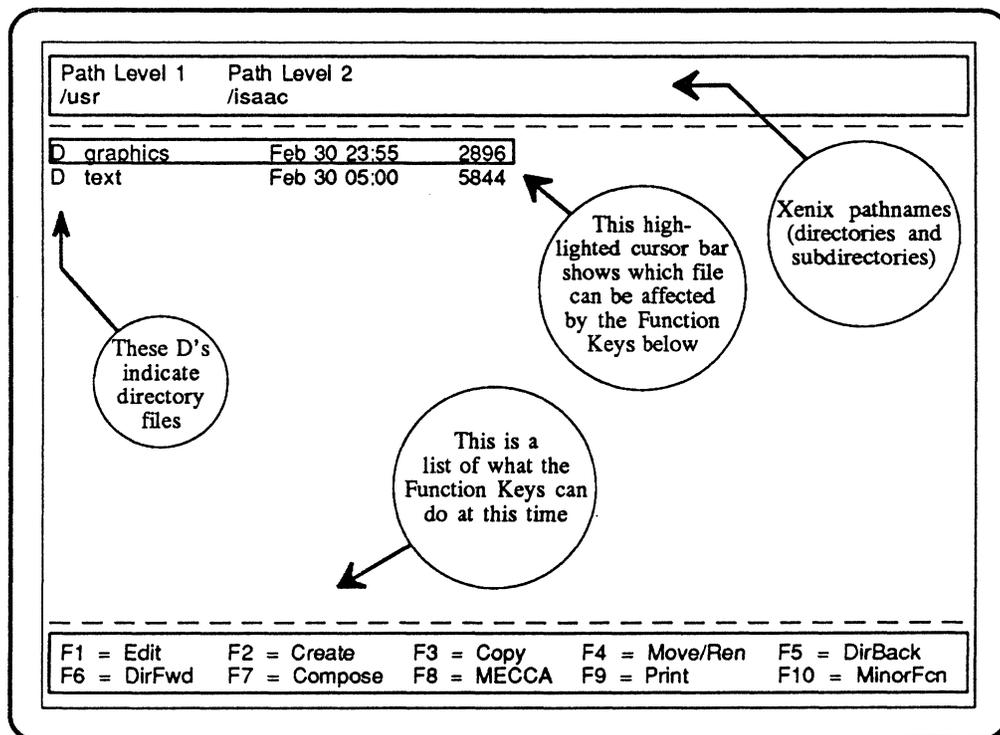


Figure 3-1: The MECCA III Major Function Monochrome Menu

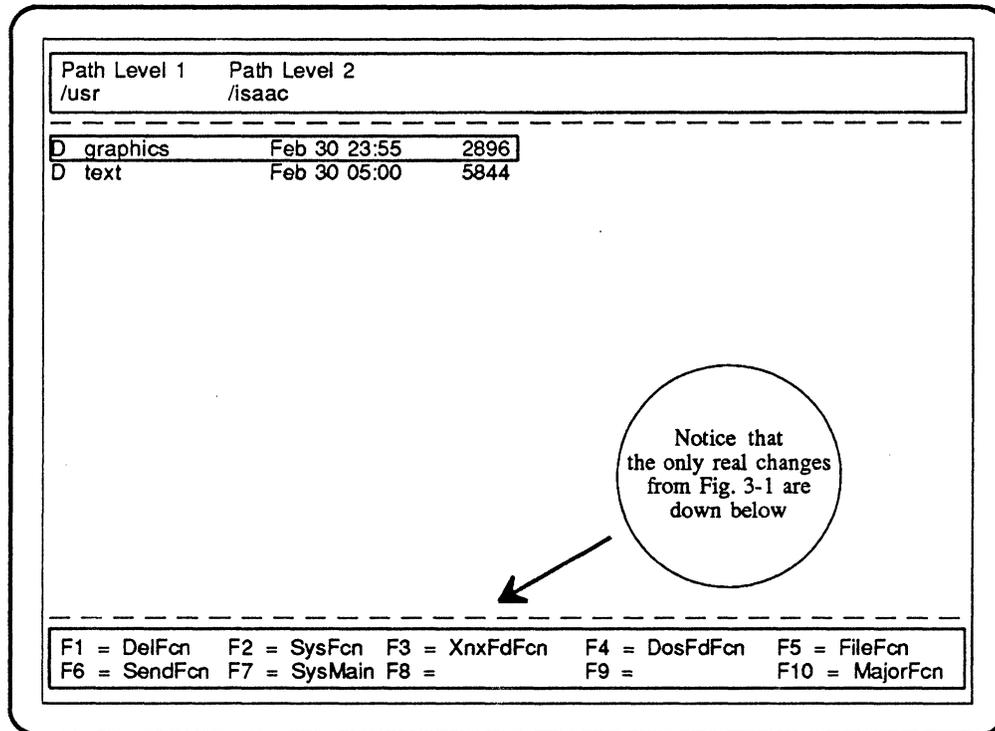


Figure 3-2: The MECCA III Minor Functions Monochrome Menu

Using Your Function Keys

If you'll look at the left side of your keyboard, you'll notice ten keys stacked together in two rows of five each, and labeled "F1", "F2", etc. These are called "Function Keys" and are there to allow clever programmers to give them special meanings in their programs. With MECCA III, each of these keys can have one of three major meanings, as shown in Figure 3-3, and several minor ones, depending upon what you're doing at the time you use them. If you're at the Major Functions monochrome menu, they have the meanings listed first in Figure 3-3 for each key; if at the Minor Function monochrome menu, the second meanings listed; if using the Xenix text editor called "vi", they have the third set of meanings listed.

During the rest of this chapter, we'll be talking about how to use these Function Keys to get various tasks accomplished. If they start to seem too complex, try to remember two things: First, the Major and Minor meanings of the keys, as well as the minor meanings, are always displayed on the monochrome monitor whenever they're usable, so you really only have to remember the "vi" set (and that only if you are using "vi" instead of a commercial word processing program). Second, although many programmers are fond of Xenix as an operating system, most nonprogrammers consider it to be "user-hostile". We've designed MECCA III, the monochrome menus, and the various uses of the Function Keys in such a way as to hide most of the Xenix operating system from you, so that you won't have to put up with it unless you really enjoy that sort of thing.

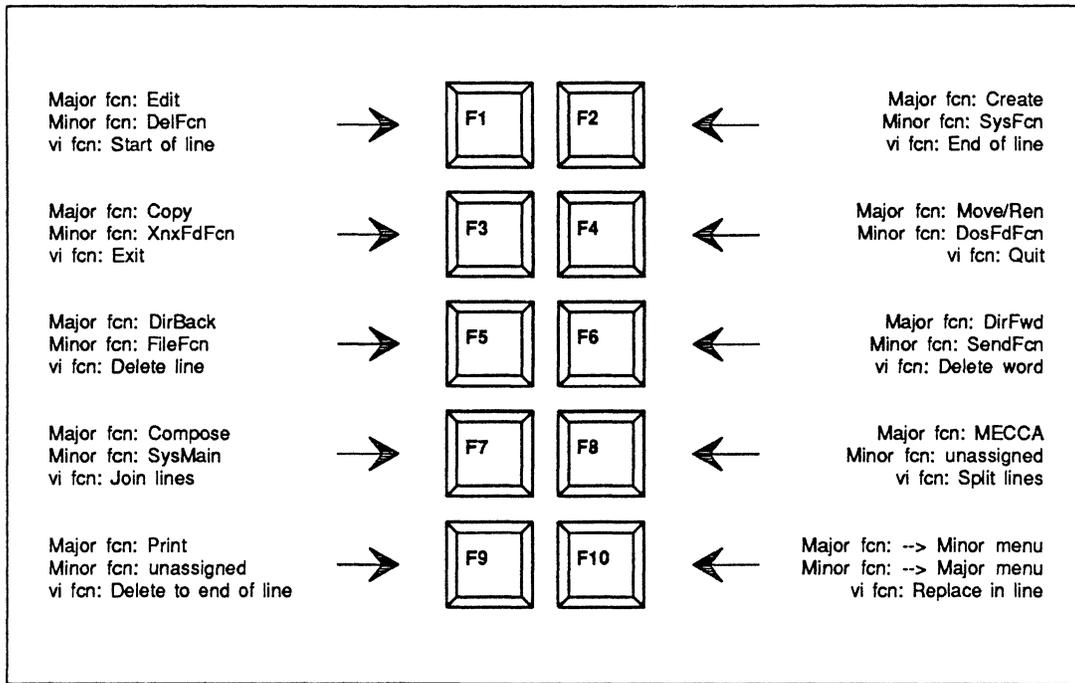


Figure 3-3: The Three Primary Ways to Use the Function Keys

The Monochrome Menus' Major Functions

We're going to look at the list of Major Functions first. We suggest that you skim through the entire chapter *before* trying any of the commands, since not all of them are practical to do in the numeric order that we're presenting them here. This is material you can go through quickly the first time you read it, but which you'll need to learn well if you want to get the most out of MECCA III.

[F1] = Edit: Changing Text Files

When you press the [F1] key, whatever file the cursor bar is over at that moment will be placed on your monochrome screen for editing with the built-in Xenix text editor called "vi". *Don't do this now, unless you have a text file in your opening directory.* Trying to edit a graphics file or a program file is likely to get you into trouble (unless you're an experienced programmer). Trying to edit a directory file, on the other hand, will get you nowhere! In the next section we'll show you how to Create a new text file that you can then practice these commands with.

"vi" is not the world's greatest text editing program, but it does come free with the Xenix operating system, and we can be sure that all of you will have it. If you decide to use some other word processing or text editing program that runs under Xenix (something which we highly recommend), the monochrome menus software can be easily modified (by us or by your inhouse programmer) to call up your program instead of "vi", and to assign values to the Function Keys that will fit as needed.

However, we're going to assume for this and the next section that you are indeed using "vi", and that the values assigned to the Function Keys will be those listed in Figure 3-3:

[F1]	will move your cursor to the start of whatever line it's on when you use it. This equals the usual "vi" command of 0 (zero).
[F2]	will do the opposite, moving the cursor to the end of its line. This = \$.
[F3] [Enter]	will exit from "vi", saving your file with whatever changes you have made since the last save, and taking you back to the monochrome menu display. This = :x.
[F4] [Enter]	will quit from "vi", without saving your changes, taking you back to the monochrome menu display. This = :q!
[F5]	will delete the line that the cursor is on. If you type a number first, that number of lines will be deleted ("3 [F5]" will delete three lines, etc.). This = dd.
[F6]	will delete a word, from wherever the cursor is to the end of the word. You can use a number in front of it too. This = dw.
[F7]	will join the line the cursor is on with the one immediately following it. This = J.
[F8]	will split the line exactly where the cursor is, putting everything to the right of the cursor onto the next line. This = r.
[F9]	will delete everything from the cursor to the end of its line. This = D.
[F10]	will let you type over characters beginning where the cursor is, substituting new text for old. This = R.

These functions are *not enough* to use "vi" all by themselves. They're just some of the most commonly used ones, and we thought you'd appreciate having them be one keystroke each. You'll also need to know about using "i" and "a" to insert text, "o" to open lines in insert mode, [Esc] to escape from insert and other modes, etc. *You must read your Xenix documentation in order to get any real value out of this text editor and its commands (including our Function Key assignments).*

One point we should make here is that if you are using text files created by other text editing programs (especially DOS programs), you'll probably need to do some Xenix based editing of them before MECCA III can run its batch composition processes using them as input. What you'll need to do is to remove the embedded "control codes" that your other programs may have added to your text. For example, one popular word processing program uses ^Z's (Ctrl Z's) to indicate the end of a file, and ^M's (Ctrl M's) for the carriage returns and line feeds at the end of each line. You'll need to delete these ^Z and ^M codes by using the following two "vi" commands (after having typed a colon to get to the bottom command line):

```
g/(Ctrl-V)[Ctrl]-[Z]/s///g [Enter]
```

```
g/(Ctrl-V)[Ctrl]-[M]/s///g [Enter]
```

The two references to "(Ctrl-V)" are to indicate that, although you'll type the key combination, all it will put into the edit command line is a "^" sign. When you subsequently type [Ctrl]-[Z] and [Ctrl][M], the regular letters will appear after the "^". And be sure to delete the empty lines at the end of your file where the ^M's and ^Z's used to be! See your Xenix documentation for detailed instructions.

You'll also have to make sure that you don't have any \$ or # characters in your text files, since these Xenix prompts tend to confuse MECCA III's "compose" program. If you need to print either of those signs in your text, use the Special Character substitution method: insert a \191^ for a \$, and a \215^ for a #.

[F2] = Create: Starting Text Files

When you use this key from the MajorFcn Menu, the middle of the monochrome screen will clear, and you'll see a display that looks like this:

MECCA III: Create New Text File Screen

New File Name: _____

Type in the filename of the text file you want to create and press [Enter]. Remember to use the regular Xenix file naming rules (see your documentation) and you will probably want to invent some sort of standard extensions to help you keep your files sorted by category, such as ".txt" for general text files, ".ltr" for letters, ".doc" for documentation, etc. Once you have pressed [Enter] here, the screen will clear and you'll be in "vi" with an empty file to start filling. The Function Keys will now have the meanings discussed in the preceding section. When you exit out of "vi", your new file will appear on the monochrome monitor's file list.

Be aware that this command only works for text files, such as are described in Chapters 6 and 7, and *not* for graphics files. Those are created on the color monitor, using the Edit Illustration menus and submenus described in Chapters 4 and 5.

You probably noticed that when the Create New Text File Screen showed up, the bottom box had only one Function Key assigned, [F10]. This "GoBack" command is your escape hatch for this and several other menus, if you push the wrong button and don't really want to do what the screen then requests. "GoBack" will always return you to the previous menu or submenu.

[F3] = Copy: Duplicating Files

When you press this Function Key on the MajorFcn Menu, the monochrome screen will clear and you'll see a display very much like this appear:

MECCA III: Harddisk Copy File Screen	
From Name usr _____ isaac _____ graphics _____ _____ _____ filename _____	To Name usr _____ isaac _____ graphics _____ _____ _____ _____

The words on the left side of the screen, under "From Name", reflect the full "path" and filename of the file your cursor was on when you typed [F3]. The ones on the right, under "To Name", assume that you may want to use all or part of the same path as the destination of the copy you are making. If you want to stay in the same directory as you currently are, simply type, on any empty line on the right, whatever new filename you want your copy to have, and press [Enter]. If you want to copy your file over to a different directory, or even a different user, simply use the [Tab] key to move the cursor to the start of any line on the right that you want to change, and type over the characters there with the correct ones you want (use spaces to replace any unwanted characters at the end of each name). When it looks just the way you want it, then press [Enter].

You'll be returned to the MajorFcn Menu as soon as the copy is made. If you made your copy within the same directory, you'll be able to find it by moving the cursor bar around. If it's been made to a different directory, you'll have to move to that directory using the [F5] and [F6] keys as described later in this chapter.

Of course, it's always possible that the file you're copying was already in the destination directory under the "To Name" (perhaps from an earlier incarnation), or that some other file there already has that name. In either case, you'll see this warning message:

MECCA III: Harddisk Copy File Screen	
The destination file already exists. Do you want to write over it? (y or n) _	

This gives you a chance to back out and, if you're at all uncertain of whether or not you really want to write over the existing file with the new one, you should answer `n` [Enter]. Then go to the destination directory and look at the existing file carefully before making your decision. If you want to overwrite the existing file with your new one, you can answer `y` [Enter] at this message.

These Copy procedures are only for making copies between different parts of your Xenix formatted harddisk. There are different Function Keys that are used to transfer files between the harddisk and Xenix or DOS floppies, and these are discussed on the sections on Minor Functions, later in this chapter.

[F4] = Move/Ren: Moving and Renaming Files

When you press [F4] on the MajorFcn Menu, you get a display very much like the last one:

```

MECCA III: Harddisk Move/Rename File Screen

From Name          To Name
usr_____        usr_____
isaac_____       isaac_____
graphics_____    graphics_____
_____            _____
_____            _____
filename_____    _____

```

In fact, the only obvious change is in the title line! That's because this submenu is used in exactly the same way as the Copy one is. You just type in whatever new path/filename you want your original file (the one the cursor bar was on) to have, and press [Enter]. With this submenu you can do three things: you can give a new name to an old file, you can move a file from its old directory and/or user to another without changing its name, or you can both move and change its name at the same time. If you accidentally come up with a destination file name that's already in use, you'll get the same message (handled the same way) that you got with this situation in the Copy function.

The difference between Copy and Move/Rename is that in the first case, you get *two* versions of the file with either new paths or new filenames. In the second case, you still only have *one* version of the file, regardless of whether you changed its name, its path, or both.

This talk about directories, subdirectories, paths and users may be getting confusing, so we'll explain it a bit in the next section.

[F5] = DirBack and [F6] = DirFwd: Changing Directories

These two keys on the MajorFcn Menu will enable you to maneuver all over the MECCA III harddisk, climbing up and down its "tree" structure of directories and subdirectories. Figure 3-4 shows a diagram of the sort of tree you'll find on a typical MECCA III harddisk.

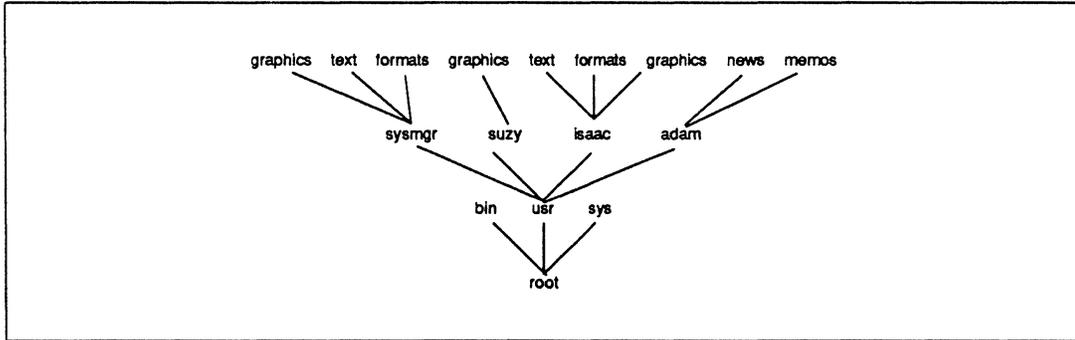


Figure 3-4: A Typical Directory Tree

In order to store large amounts of data on a harddisk, it has to be very tightly structured. What Xenix does when it "formats" the disk (hard or floppy), is to set up elastic borders around different sets of data in different categories. Each of these sets has smaller sets within it, and others can be placed within those, and so on. Each of these sets can be called a "directory" or a "subdirectory", depending on whether you're interested in the set itself, or in its relationship to others higher or lower on the tree.

The term "path" is used to describe programmed relationships between directories, both direct ("vertical") and indirect ("horizontal"). The term "pathname" usually refers to a listing of the vertical relationship between a filename and the "root" directory, considered to be "Path Level 0". The directories for all the users on a system are in a subdirectory called "/usr" on Path Level 1, along with several other subdirectories containing parts of the software. These user subdirectories are labeled by each person's name, and are on "Path Level 2". You can create as many further subdirectories as you like, on Path Levels 3, 4, and 5, using the commands available via the MinorFcn Menu. Each directory is a "sub" directory to the ones below it on the tree (they are also sometimes called "branch directories").

When listing the full "pathname" of a file, such as "/usr/isaac/graphics/f3-4.g" (which is the name for Figure 3-4), forward slashmarks ("/") are placed in front of each unit. This is why you can see them on the top of the monochrome menus. However, when using functions like Copy or Move/Rename with the Function Keys, don't add the slashmarks unless the examples on the Screen use them, since they'll be added internally if needed.

So now the use of the [F5] and [F6] keys on the Major Functions monochrome menu should be a bit clearer. Starting out with the opening screen (shown in Figure 3-1), you can climb "back down" the tree to Path Level 1 (the "/usr" directory) by pressing the [F5] key once. The results should look like Figure 3-5.

Path Level 1					
/usr					
D adam	Feb 30 23:55	72	D wanda	Jan 15 09:45	72
D adm	Nov 31 05:23	80	D will	Feb 21 10:12	56
D bin	Feb 30 23:55	3376	D zack	May 23 12:02	72
D bob	Mar 15 12:12	480			
D cheryl	Feb 30 23:55	24			
D deb	Apr 01 05:05	128			
D frank	Feb 30 23:55	160			
D george	Feb 30 05:00	96			
D isaac	May 01 23:05	23			
D lib	Nov 31 05:32	464			
D menu	Feb 30 23:55	48			
D news	Feb 30 05:00	88			
D rachel	Feb 30 23:55	32			
D sharon	Feb 30 05:00	80			
D spool	Nov 31 23:55	128			
D suzi	Feb 30 05:00	32			
D sys	Nov 31 17:17	112			
D tom	Feb 30 05:00	48			
D tmp	Apr 31 13:48	56			
D vera	Feb 30 05:00	24			

F1 = Edit	F2 = Create	F3 = Copy	F4 = Move/Ren	F5 = DirBack
F6 = DirFwd	F7 = Compose	F8 = MECCA	F9 = Print	F10 = MinorFcn

Figure 3-5: File Display After [F5]-ing Back to Path Level 1

Path Level 1	Path Level 2	Path Level 3			
/usr	/isaac	/graphics			
bots.g	Apr 18 19:28	168	f3-3.g	Apr 18 19:38	15976
f1-1.g	Apr 20 17:08	34776	f3-4.g	Apr 10 17:28	1410
f1-10.g	Apr 10 17:24	178975	f3-5.g	Apr 22 19:35	9420
f1-11.g	Apr 20 16:59	258533	f3-6.g	Apr 22 19:03	10394
f1-2.g	Apr 10 17:25	45368	f3-7.g	Apr 22 18:15	1117
f1-3.g	Apr 10 17:26	63542	f3-8.g	Apr 22 18:14	1097
f1-4.g	Apr 10 17:27	93937	f3-9.g	Apr 22 18:13	1111
f1-5.g	Apr 10 17:27	132040	f4-1.g	Apr 18 20:13	2681
f1-6.g	Apr 20 02:01	129075	mono.g	Apr 10 17:30	2175
f1-7.g	Apr 10 17:27	132314	screen.g	Apr 10 17:31	1100
f1-8.g	Apr 10 17:28	56978	size1.g	Apr 07 15:01	286
f1-9.g	Apr 20 16:02	26635	size3.g	Apr 07 15:02	202
f2-1.g	Apr 10 17:28	19756	size6.g	Apr 07 15:35	202
f3-1.g	Apr 22 17:51	7151	size7.g	Apr 07 15:31	286
f3-10.g	Apr 22 18:12	4580	small1.g	Apr 19 20:39	286
f3-11.g	Apr 22 18:11	1106	small3.g	Apr 10 17:30	202
f3-12.g	Apr 22 18:09	6649	small6.g	Apr 10 17:31	202
f3-13.g	Apr 22 18:08	5598	small7.g	Apr 10 17:31	286
f3-14.g	Apr 22 18:07	1111	temp.g	Apr 19 18:16	1209
f3-2.g	Apr 22 17:54	4058	tops.g	Apr 18 19:26	168

F1 = Edit	F2 = Create	F3 = Copy	F4 = Move/Ren	F5 = DirBack
F6 = DirFwd	F7 = Compose	F8 = MECCA	F9 = Print	F10 = MinorFcn

Figure 3-6: File Display After [F6]-ing Forward to Path Level 3

Usually all of the files in the "/usr" directory are themselves (sub)directories, either of individual users on the system, or of different parts of the MECCA III software.

You should have in your /usr directory at least one subdirectory created for you by your System Manager (or Amgraf). It will have a "D" in the left margin, and (probably) your name. Move the cursor bar to it with the [arrow] keys and press [F6]. The middle of your screen will clear and the previous file listing will be replaced by the Path Level 2 listing you started out with. Place the cursor bar over another directory file and press [F6] again. This time you'll get a new one, listing the contents of this directory (including some files that may be directories themselves). At the top of the monochrome menu screen, you'll see that another Path Level label (3) has been added, plus the name of this new directory. Figure 3-6 shows a typically full graphics subdirectory on Path Level 3. As you see, you can climb "forward up" the tree to higher numbered Path Levels, by using the [F6] key whenever the cursor bar is over a directory filename.

You can use the [arrow] keys to move the highlighted cursor bar around the screen, moving from one file name to another. Try this, watching how the [uparrow] key makes the cursor bar skip to the bottom if you're at the top line when you use it (and vice versa for the [downarrow] key when you're at the bottom).

The [End], [Home], [PgUp] and [PgDn] keys can be used to maneuver between large numbers of files when you have several screens' worth of them. The [End] key will take you to the last file in the directory you happen to be in at the moment, while the [Home] key will take you back to the first one there. [PgUp] and [PgDn] will move you a screenfull backwards and forwards respectively.

Try to get very comfortable with the concepts discussed in this section, since some 90% of all problems with Xenix programs are caused by incorrect or missing pathnames!

[F7] = Compose: Typesetting Files

When you've got your graphics files (Chapters 4 and 5), batch composition and page format files (Chapter 6) created, all you have to do to print them out is to follow these simple steps:

Make sure your page format is stored in the same directory on the Xenix harddisk as your text file -- usually this will be your "/usr/name/text" directory. Otherwise, make sure you have a Xenix pathname attached to the format's filename inside the \PFMT command. In your "/usr/name/graphics" directory you should have any of your graphics that you intend to merge into the text, *and* the pathname in front of every graphic filename inside a \FIGURE command (for example, "NAME=/usr/name/graphics/figure5.g").

Go to /usr/name/text (or wherever your batch file is stored). Then move the highlighted cursor bar on the Major Functions monochrome menu to the name of the batch file you want to compose, and press [F7]. This will take you to a screen that looks like this:

MECCA III: Composition Control Screen

Name: filename.ext__

Output to: Laser; APS-5; Preview File

Do: All ... or ... Pages ____ Through ____

Trace only: Galley ... or ... Pagination

Laser name: /dev/tty01

APS-5 name: /dev/lp0

Preview name: _____

As you can see, the name of your text file will be displayed along with weird looking Xenix default filenames for outputting to the LaserWriter or an APS-5, and blanks to let you indicate which pages you want output on which device. Use the [Tab] key to move around the screen. Put an x in the blank in front of the device you want, and an x in front of "All" *or* the beginning and ending page numbers you need composed. To output pages 10-15, for example, you would [Tab] down to the blank right after "Pages" and type 10 [Tab] 15 [Tab] (*not* "10 [Enter]..."). When the screen looks the way you want, press [Enter] (that's why you don't use it after the first page number!), and the file will be composed and output to your preferred device.

If you can't get (or don't want) access to the output device at that exact moment, type in a new filename of your choice (perhaps the text filename with a different extension such as ".lsr" or ".aps") on the line where the default Xenix name for that device is before you press [Enter]. In this case, a special composed file will be created that can be output to your device later.

If you try to output a file to a device that isn't actually attached at the time, you will probably hangup the program. In that case you'll have to bail out with the [Del] key (see the end of the next section).

The "Trace" option is discussed near the end of Chapter 6. For now, let's just say that it's used to help you find any mistakes in coding that might be preventing your batch files from composing.

What about that "Preview" option? If you put an x here, then move to the "Preview Name:" line, type in your chosen filename (again, come up with a standard extension to use, such as ".cmp" for "composed" -- don't just type in the same filename as the source batch file), and press [Enter]. Your file will be composed and saved under the new name, but not printed. You can then call it up on the color monitor later for interactive editing, as described in Chapter 6.

Once you've made your choices and pressed [Enter], the computer will grind away for a few moments, and soon you'll see the monochrome screen clear and these messages appear:

```
Composing  "/path/filename.ext"  
Printing:  page=1  
Printing:  page=2  
Printing:  page=3
```

and so forth, counting out the pages as they are composed. The usual time for composing and printing is about 45 seconds for straight text pages, and a minute or two per page of graphics and text combinations. A very complex graphic, such as Figure 1-11, can take as long as five minutes. If you're not outputting to a device, the composing time is much shorter.

If you're printing out a series of batch files (or even of individual graphics), on the Apple LaserWriter, make sure that it's finished blinking after the last page of each file, before you begin composing the next. Usually it's best to give the LaserWriter a full minute to clear its memory completely between files.

You should be aware that different types of paper will produce different quality results. Not surprisingly, the better the paper, the better the text and graphics will look. So you may want to experiment with different sorts of stock.

If you output the same file more than once before logging off, the Composition Control Screen will remember your last instructions and follow them as soon as

you press [Enter]. This can be a time saver, but if you want to make any changes (such as doing a different set of pages), you'll need to [Tab] to and [Space] over any fields that should now be blank, and type correct information over fields that need changes made.

[F8] = MECCA: Starting the Color Side

Although we've used the term "MECCA" to refer to the entire cluster of programs that run on both the monochrome and the color monitors, for most folks the important side of MECCA is the color side. If you intend to create or edit graphics, edit composed batch documents or forms, or combine illustrations, this is the main Function Key to remember.

Make sure that you're at the MajorFcn Menu, put the graphics pad's electronic stylus in its holder, and press [F8]. Your monochrome monitor will clear, and you'll see the following appear there:

```
error at start = 0
input shared data created
display shared data created
menu shared data created
edit shared data created
loader shared data created
plot shared data created
menus loaded = 71
kprocess ready
```

The color monitor will change and its opening screen (shown in Figure 4-1 at the beginning of the next chapter) will appear. You'll then be ready to use the main part of MECCA III. But before you do for the first time, you should study carefully the rest of this chapter, and make sure that you understand the instructions given. If you can't wait to see what it looks like, go ahead and start it up, but make sure to read and follow the instructions in the next subsection.

Exiting from MECCA III

As you'll see in the upper right corner of your color monitor, MECCA III starts out with something called the "Main Menu". This gives you entrance into the various programs that comprise the color side of the MECCA III system. The procedures for using the electronic stylus, graphics pad and keyboard for choosing options are all explained in the next chapter. For now, you should notice the word "Exit" that appears at the bottom of the blue area.

This is the {Exit} option, and is the best way to stop running MECCA III and get back safely to the monochrome menus. It's used by pressing the stylus down when its cursor is over it and the blue background has changed to black.

If you ever wind up confusing the software to the point of "locking up" the keyboard and the graphics pad, your emergency exit is the [Del] key on your keyboard. *[Del] is the standard interrupt for most Xenix programs*, and it will stop both the monochrome and the color sides of MECCA III dead in their tracks if you hit it accidentally. (So if you have a word processing package that uses the [Del] as one of the ways to erase characters, try to get into the habit of using any other available key combination that will have the equivalent results for that program.)

If you wind up needing to use the [Del] key to bail out of a lockup, one of two things will happen, depending on whether you're running the monochrome or the color side of MECCA III at the time. If you're on the color monitor, pressing [Del] will kick you back to the monochrome menus, and you'll be able to restart the color side by using the [F8] key.

Be warned that if you exit from MECCA III, whether via {Exit} or [Del], in the middle of creating or editing a graphic, *you will lose the "live" version of that graphic*. So always try to save your work before exiting.

If you accidentally or deliberately press [Del] while in the Mono Menus, whatever you are doing will stop and the standard Xenix \$-prompt will appear somewhere on the left side of the screen. Not only that, but you'll find that the next time you try to type something, your letters don't appear on the monochrome screen. You'll have to carefully type keyon [Enter] to restore the character display. Then type mscreens [Enter] to get the MajorFcn Menus back.

You can't just turn the computer off simply because you've exited from MECCA III, or are through for the day! You must go through formal "shutdown" procedures as described later in this chapter. So we should get back to the discussion of the monochrome menus and their Function Keys...

[F9] = Print: Getting Text File Printouts

This process is probably easier than any other one on the MajorFcn Menu. If you want to look at an ordinary printout of any text (batch, format, etc.) file, all you have to do is to position the cursor bar over that file's name and press [F9]. Within a matter of seconds, your printout will appear in the LaserWriter's hopper (assuming that, like most MECCA III users, you have a LaserWriter). This command is *not* set up for use with an APS-5 or other phototypesetter, since (a) typesetting film is so expensive, and (b) most people using phototypesetters will also have LaserWriters to produce quick and inexpensive proof copies of their text and graphics files.

[F10] = MinorFcn: Toggling to the Minor Functions Menu

This one is also pretty simple. Pressing [F10] will toggle you back and forth between the Minor and the Major Functions monochrome menus. And that means we're ready to go on to.....

The Monochrome Menus' Minor Functions

Once again we're going to go through a list of Function Keys and what you can do with them, this time working through the second of the main monochrome menus. These functions won't be used quite as often as the Major ones, but they are still necessary for you to know about. So we'll try to go through them as painlessly as possible. First, here's a reproduction (in Figure 3-7) of the MinorFcn Menu, so you won't have to keep paging back to Figure 3-2:

F1 = DelFcn	F2 = SysFcn	F3 = XnxFdFcn	F4 = DosFdFcn	F5 = FileFcn
F6 = SendFcn	F7 = SysMain	F8 =	F9 =	F10 = MajorFcn

Figure 3-7: The MinorFcn Menu

[F1] = DelFcn: The Delete Functions

When you choose [F1] on the AtlFcn Menu, you get a menu that looks like Figure 3-8. This one is called the System Functions or "DelFcn" Menu. As you can see, you have four choices here: delete a single file, delete a group of selected files, delete every file in the directory, or go back to the Major Functions monochrome menu.

F1 = DelFile	F2 = DelSel	F3 = DelAll	F4 =	F5 =
F6 =	F7 =	F8 =	F9 =	F10 = MajorFcn

Figure 3-8: The DelFcn Menu

Deleting a Single File

If you press [F1] again, you'll go to this:

MECCA III: Delete Last Chance Screen

Do you really want to delete: "filename.ext" ? (y or n)

Type y [Enter] to delete the listed file and be sent back to the DelFcn Menu. If you got there by mistake and don't really want to delete it, n[Enter] will take you back directly to the DelFcn Menu.

Sometimes, instead of being asked if you want to delete "filename.ext", you'll get this message instead:

MECCA III: Delete Last Chance Screen

The file "filename.ext" cannot be deleted by you.
 You are probably not the owner of the file.
 Press [Enter] to continue.

Xenix, like many other operating systems, allows files to have "owners", who alone may copy, delete, modify, or rename them. If you need to do something to a file that you're being denied access to, ask your System Manager for help.

Deleting Several Files

If you want to delete several files at once, you first need to "select" them. This is done with the [5] key *in the middle of the numeric keypad* (surrounded by the four [arrow] keys). Use your arrows to move the cursor bar over a filename, and press [5]. You'll see the cursor bar begin to blink off and on. This indicates that the file has been "selected". Press [5] again, and the blinking will stop, unselecting the file. You can have two, six, a dozen, or more files selected at once, all blinking away, and delete them with [F2]. You'll go to the Delete Last Chance Screen again, and be presented with the names of the selected files one after the other, so you can approve or cancel each deletion decision swiftly. At the end of the deletions you'll return to the DelFcn Menu.

Emptying a Directory

Every once in a while you'll want to erase every single file in a given directory so that you can later remove the directory itself. You can do this with the [F3] key on the DelFcn Menu, but since its a *very* powerful (and thus very dangerous) command, you are firmly warned of the need for caution:

MECCA III: Delete Last Chance Screen

 * Files once deleted cannot be recovered! *

Do you really want to delete EVERY SINGLE FILE ? (y or n)

You answer this question as before, but we recommend that you pause and think long and hard before answering.

This time when you're finished making your deletions, you'll be sent back to the MajorFcn Menu (since there won't be anything left to delete!).

If you got to the DelFcn Menu by mistake, a simple [F10] will take you back to the Major Functions Menu.

[F2] = SysFcn: The System Functions

This choice on the MinorFcn Menu brings you to the "SysFcn" or System Functions Menu shown in Figure 3-7. From here you can create or destroy directories, exit to Xenix, logoff or shutdown the entire system.

F1 = DirMake	F2 = DirRemv	F3 = Xenix	F4 = Logoff	F5 = Shutdown
F6 =	F7 =	F8 =	F9 =	F10 = MajorFcn

Figure 3-9: The SysFcn Menu

Making and Removing Directories

If you need to make a new directory within your current one, press [F1] here to get this display:

MECCA III: Make New Directory Screen

New Directory Name: _____

Type in the name you want to call your new directory (see your *Xenix User Guide* for its naming rules for directories), and press [Enter]. You'll go back to your previous file display, with the new directory file name listed with its "D" in the left margin.

The new directory is always a subdirectory to the one you are in when you create it, so be sure to pay attention to what path level you want it on.

Getting rid of an old directory is just as easy. First, delete every single file inside the directory. Then go one path level back (that's [F5] on the MajorFcn Menu), put the cursor bar over the directory file name you want to get rid of, use [F10] again to get to the Minor Functions, [F3] for the SysFcn Menu, and [F2] for "DirRemv". You'll get a screen very similar to the one for deleting regular files:

MECCA III: Remove Old Directory Screen

Do you really want to remove: "directoryname" ? (y or n)

A simple y [Enter] here will banish that directory forever.

Exiting to Xenix

If you should ever have a need to use the Xenix operating system directly, choosing [F3] on the SysFcn Menu will yank you out of all the MECCA III software, clear the screen, and give you the standard Xenix \$-prompt:

```
$ _
```

You can now run whatever Xenix procedures or programs you need. If you want to start up MECCA III again, and return to the Mono Menus, type mscreens [Enter] at any \$-prompt.

Logging Off

When it's time for you to quit for the day, but somebody else is going to be using the system, pressing [F4] on the SysFcn Menu will let you "logoff", clearing the screen and prompting the next user to login and give their Password, just as described earlier.

```
xenix286! login: _
```

The new person will handle this in exactly the same way that the first person for the day did.

Shutting Down the System

Perhaps the most important function on the SysFcn Menu is the one initiated by pressing [F5]. We can't overemphasize how important it is to "shutdown" Xenix before you power down the computer. An important part of this process consists of "closing" all the files that have been "opened" during your session. Failing to do this could scramble your data and/or your software. The resulting mess *can* usually be repaired by an expert programmer, but it's a dull, time-consuming task. If you have deadlines to meet, the last thing you need is that kind of trouble.

So at the end of the working day, when it's time to turn off the computer, first go to the SysFcn Menu and press [F5]. The screen will clear and you'll be asked:

```
Do you want to Shutdown the system now? (y or n)
```

Answer with y [Enter]. The computer will reply:

System will shutdown now.

and a few seconds later you'll get the "all clear" message:

** Normal System Shutdown **
** Safe to Power Off **
-or-
** Hit any key to Reboot **

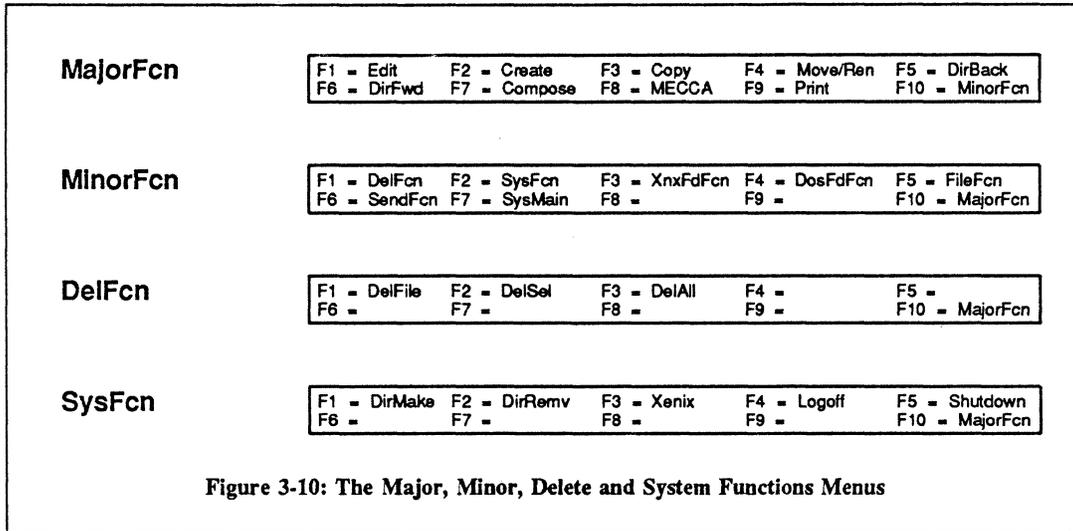
At this point you have 15 seconds to turn the power off. After that, the computer will reboot itself automatically, going into either DOS or Xenix, depending on whether you have a DOS disk in the floppy drive or not. If you've gotten up to get a cup of coffee and Xenix has rebooted while you were gone, you must go through the shutdown process all over again. Sorry. If it's only rebooted to the point of going through the self-diagnostic tests, then you can safely power-down.

What to Do if the Power Goes Off Accidentally

If you ever actually have a power failure that crashes the program, what you should do depends on whether it's a momentary power failure or one that lasts long enough for you to consciously react. In the first situation you may be lucky, and the MECCA III software will appear to still be running properly. You should {Exit} out of the color side back to the monochrome menus (*without* trying to save your current illustration) and immediately shutdown. Wait a few minutes and turn the power back on as usual. With bad luck however, the {Exit} option and even the [Del] key won't work. In that case, you're best advised to have someone who is a computer techie in your organization call Amgraf.

If you find yourself saying, "Hey, the power's off!", reach over and turn all the switches OFF *before* the power comes back on and, again, have someone in your organization call Amgraf. It may be possible to give him or her instructions over the phone on how to diagnose and repair any damage the power failure may have done to your hardware and/or software.

Before we continue, here's a picture of the menus we've covered so far (in Figure 3-10):



[F3] = XnxFdFcn: The Xenix Floppy Disk Functions

The [F3] key on the MinorFcn Menu takes you to the Xenix Floppy Disk Functions ("XnxFdFcn") Menu shown in Figure 3-11. These functions exist because many people use Xenix-formatted floppy disks as data disks to hold their graphics, batch and format files. By using these functions you can prepare your files on any MECCA III system, save them onto a floppy disk, then transport them for loading onto another MECCA III, across the hall or across the country.

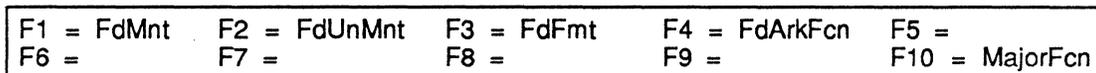


Figure 3-11: The XnxFdFcn Menu

(An experienced Xenix user, such as your System Manager, can also use the standard Xenix commands to copy files from a non-MECCA system running Xenix onto a floppy that can then be loaded onto your MECCA III. Text files from a non-MECCA source should always run if coded properly. However, graphics files may need to be translated into MECCA's data array structure through one of the Custom Transfer Utilities mentioned in Chapter 2.)

Mounting and Unmounting Xenix Floppies

Before you can copy files back and forth between your floppy disk and your hard disk, you first have to tell Xenix that it should pay attention to the disk in the floppy drive. This is called "mounting" the disk, and is done by pressing [F1] on the XnxFdFcn Menu. The monochrome screen will clear and you'll see this display:

MECCA III: Xenix Floppy Disk Mount Screen

Is the floppy disk double or high density? (d or h)

Naturally you reply with **h** [Enter] for high (or "quadruple") density floppies, or **d** [Enter] for double density disks. Next you're asked:

MECCA III: Xenix Floppy Disk Mount Screen

Insert floppy disk and enter drive when done. (a or b)

Here most folks will answer **a** [Enter] since most AT's only come with one floppy drive. But if you're one of those lucky folks who has two floppy drives on your machine, you can answer with a **b** [Enter]. Your floppy drive light will come on for a few seconds and the drive will grind a bit. After it stops, you'll be sent back to the XnxFdFcn Menu and be able to continue.

If you look at the very bottom of the screen, below the menu box, you'll see that a message has appeared, saying "Floppy A Mounted" (or B, as the case may be).

Once in a while, the computer may discover that you've made a mistake and will tell you in no uncertain terms:

MECCA III: Xenix Floppy Disk Mount Screen

The disk in Drive A is not a formatted high density Xenix floppy.

Press [Enter] to continue.

As soon as you press [Enter], you'll be sent back to the XnxFdFcn Menu and can try again. Check to see if you actually put the floppy into the correct drive, what its label say its density is ("2d" = double, "4d" = high), and whether or not it's been properly formatted as a Xenix disk. If it's a brand new floppy, it probably needs to be formatted (see the next section). Once you've figured out what the problem is (or asked your System Manager), you can try again.

Whether you're copying files to or from the floppy, when you've finished making your file transfers, you'll need to "unmount" the floppy disk by pressing [F2] on the XnxFdFcn Menu. This will give you a screen that looks like this:

MECCA III: Xenix Floppy Disk Unmount Screen

Enter floppy disk drive you wish to unmount. (a or b)

Your answer of a [Enter] will unmount the floppy disk in Drive A (and b [Enter] the one in Drive B, naturally). Again the light will come on, the drive will make a short noise, and you'll go back to the XnxFdFcn Menu, with the mounted drive message disappearing from the bottom line of the screen.

If you're going to be "swapping floppies" in the same drive, you must unmount *each* old disk with [F2], then mount *each* new one with [F1]. Otherwise your Xenix will get very confused and may scramble your data.

Formatting New Xenix Floppies

"Formatting" is the process that sets up places to put data on a floppy or hard disk. Every operating system, whether DOS, Xenix, or whatever, uses a different pattern of "tracks and sectors" to organize the magnetic surface of each disk. So before you can transfer files from your MECCA III hard disk to a floppy, you first have to have the latter formatted as either a Xenix or a DOS floppy. With MECCA III you can format Xenix floppies without having to exit to Xenix first.

Make sure that the disk you want to format is either brand new or (if it's a used one) that you don't care about what happens to any data on it, since *the formatting process will erase any data that might have been on the disk*. Press [F3] on the XnxFdFcn Menu, and you'll get this reply:

MECCA III: Format Xenix Floppy Disk Screen

Is the floppy disk double or high density? (d or h)

You answer as before, probably with h [Enter], since high density disks are the ones that come with AT's. The computer will respond:

MECCA III: Format Xenix Floppy Disk Screen

Which floppy drive will you be using? (a or b)

Put the floppy in the drive you want, close the drive door, press a [Enter] or b [Enter], and the regular Xenix formatting process will start, complete with the standard Xenix progress (and error!) messages (see your Xenix documentation). This takes about a minute, so don't touch anything until the process is complete and you've been brought back to the XnxFdFcn Menu. If you put the wrong sort of floppy in, or put it in the wrong drive, you'll get an error message; *unless you had another disk of the right description in the designated drive!* In that case, you'll probably wind up formatting (that is, erasing) the *wrong* disk. So be very careful when using this process. The error message looks like this:

MECCA III: Format Xenix Floppy Disk Screen

An error has occurred in formatting your disk. Please insert another disk and press [Enter] to try again.

If you try to format a mounted floppy you'll see this:

MECCA III: Format Xenix Floppy Disk Screen

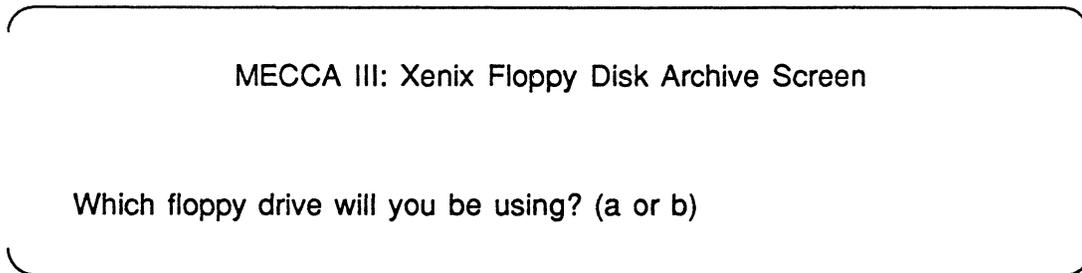
Floppy Drive A is currently in use.
Press [Enter] to continue.

Press [Enter] with either of these error messages, and you'll be sent back to the XnxFdFcn Menu, for another try.

By the way, if the person who formats a given floppy happens to have Xenix "superuser" status at the moment she or he does so, nobody else (except another superuser) will be able to read or write to that floppy!

FdArkFcn: The Floppy Disk Archive Functions Submenu

If you press [F4] on the XnxFdFcn Menu, you'll see this appear:



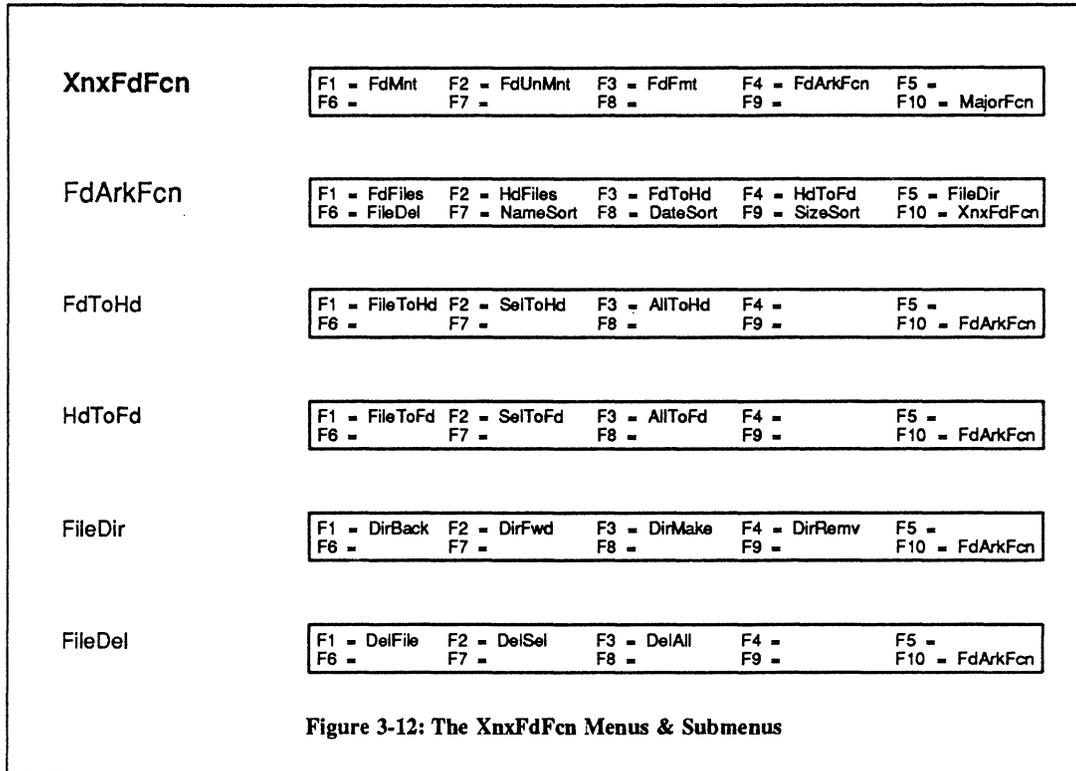
That's your cue to type a [Enter] (or possibly b [Enter]). The Xenix hard disk directory will come back and FdArkFcn (Floppy Disk Archive Functions) Submenu will show up. A picture of this, along with its own four Submenus, appears in Figure 3-12.

You can toggle back and forth from a file listing of the floppy disk and your current hard disk directory by using [F1] and [F2] respectively. The top box on the screen will say "XENIX diskette" instead of the usual "Path Level 1" and "/floppya" (or "/floppyb") instead of "/usr".

The [F5] key will take you to a FileDir Submenu where the commands work exactly the same way (except for [F10]) as the already discussed (and identically named) commands on the MajorFcn and SysFcn Menus do, although with different Function Keys assigned to them. [F10] returns you to the FdArkFcn Submenu instead of the MajorFcn Menu. These commands work on both the hard disk and the floppy, depending on which one's set of files is on screen when you use them.

The [F6] key on the FdArkFcn Submenu will give you the FileDel Submenu, which works exactly the same as the DelFcn Menu described earlier (again, except for [F10], which goes back to the FdArkFcn SubMenu). You can delete files on both the hard disk and the floppy, so be careful to pay attention to which files are on screen at any given time.

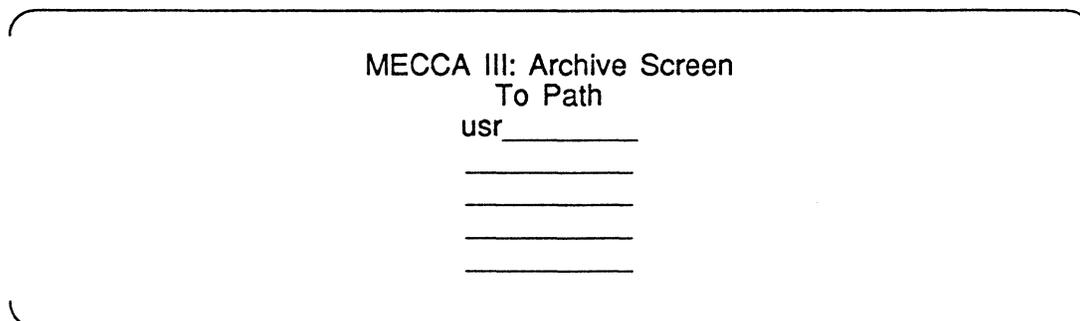
The [F7], [F8], and [F9] keys also duplicate the functions of another menu, in this case the FileFcn Menu (to be discussed soon), though with different numbers. They'll let you do file sorting based on alphabetical order of the file Names, the Date of last change to the files, or the largest to smallest Sizes of the files. You can do this with the files on both the hard disk and the floppy.



Copying Files from a Xenix Floppy Disk to the Hard Disk

The [F3] key on the FdArkFcn Submenu gets used when you want to go to the FdToHd (Floppy Disk to Hard Disk) Submenu. As you can see by referring back to Figure 3-12, this gives you a choice of copying one file, several selected files, or all files in the floppy's directory over to the hard disk.

To copy a single file, make sure that the cursor bar is over the file on the floppy that you want to copy. (You may need to [F10] back to the FdArkFcn Submenu temporarily, so you can [F1] the floppy files into view first.) With the cursor bar in place, and the FdToHd Submenu showing, press [F1] to get this screen:



This screen works somewhat like the ones we've seen before for Copying files. Fill in the rest of the pathname (*don't* try to change filenames here) to get the file in the precise directory and subdirectory you it want to be, and press [Enter]. This

message will appear during the copying:

MECCA III Archive in progress.

Currently archiving file "filename.ext".

If the path you chose is illegal, this message will appear:

MECCA III Archive in progress.

You cannot archive your files to the specified path since you do not have write priviledges there.
Press [Enter] to continue.

Press [Enter] and you'll be returned to the FdToHd Submenu for another try.

If the file already exists under that name in the directory that it's being copied to, you'll get the same kind of error message that an overwrite threat inspires with the Copy and Move commands.

It's a good idea to pay attention to questions of file "ownership". You're better off to copy to and from floppy directories with your own name as part of the path. Otherwise you'll have to bother the System Manager to change the ownership status of your files.

If you've selected several files on the floppy with the [5] key, you can copy them over at the same time by choosing [F2] on the FdToHd Submenu. The same screen we just saw will appear, you'll fill in the rest of the pathname and press [Enter]. The archiving commentary will repeat for each file as it's done.

To copy over the entire contents of the floppy's directory, choose [F3], and do the pathname [Enter] routine on the same old screen, and watch the familiar messages return (they may be boring, but they're consistent!).

Copying Files from the Hard Disk to a Xenix Floppy Disk

[F4] on the FdArkFcn Submenu is used to summon the HdToFd (Hard Disk to Floppy Disk) Submenu. This works exactly the same way as the opposite copying just discussed, except that the screen is a little different:

```
MECCA III: Archive Screen
      To Path
      floppy_____
      isaac_____
      graphics__
      _____
      _____
```

With the copying going in this direction, the assumption is made that most people will want to save their files to directories and subdirectories that match their hard disk records. What's more, this particular command will automatically create any needed directories on the floppy as it flies. You can change the default path of course, just by typing new characters over the old ones (use spaces for erasing unwanted characters). But remember to use the [Tab] key to move from line to line, because as soon as you press [Enter] the copying process will start.

As before, use [F1] to copy/archive a single file; [F2] to do a group of files; and [F3] for all the files in the hard disk directory you're in at the time. Do make sure that you really are looking at the hard disk directory before you start though, and don't do a "AllToFd" ("All to Floppy Disk") unless you're sure there's enough room on your floppy.

If you wind up filling your floppy before you have finished making all the requested file copies, you'll get a series of messages telling you to insert additional floppies as needed (and the copy process will back up enough to restart any interrupted files).

[F4] = DosFdFcn: The DOS Floppy Disk Functions

The [F4] key on the MinorFcn Menu takes you to this screen:

MECCA III: DOS Floppy Disk Mount Screen

Is the floppy disk double or high density? (d or h)

As with the equivalent Xenix screen, you reply with h [Enter] or d [Enter] for double density disks. Next you're asked:

MECCA III: DOS Floppy Disk Mount Screen

Insert floppy disk and enter drive when done. (a or b)

As before, most people will answer a [Enter]. Your floppy drive light will come on and the drive will grind. After it stops, you'll be sent to the DosFdFcn Menu (with the hard disk files listed) and be able to continue.

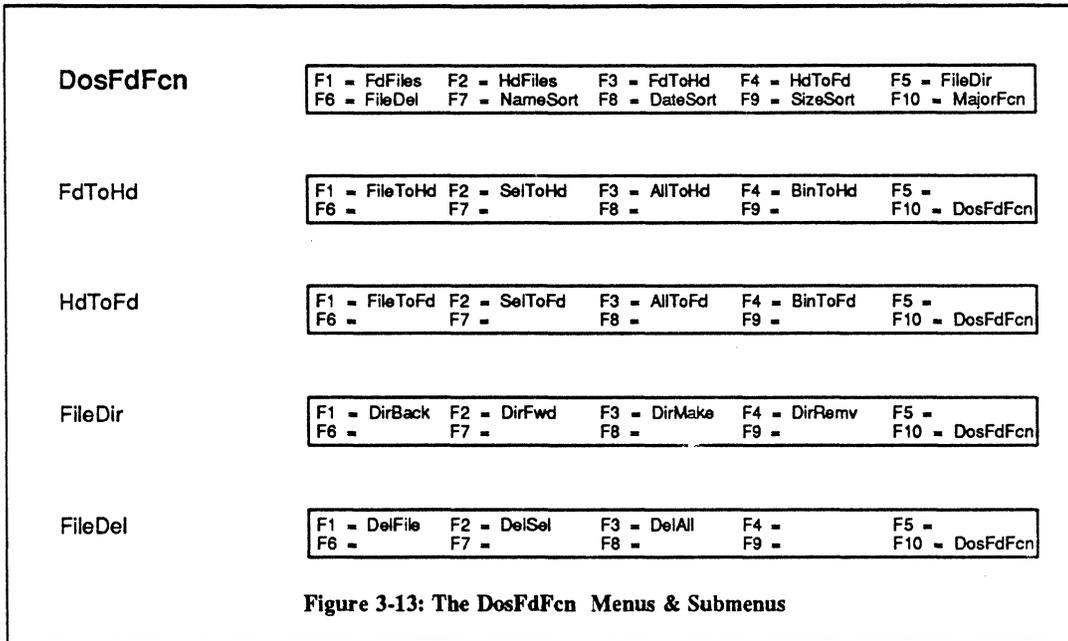
Despite the use of the term "Mount" in the preceding screen, you do not have to "unmount" DOS floppies. You do, however, need to back track to the MinorFcn Menu and start over with [F4] if you need to swap DOS floppies.

The DOS Floppy Disk Functions ("DosFdFcn") Menu leads, through its Function Keys, to a few more Submenus, as shown in Figure 3-13.

Similarities to the Xenix FdArkFcn Submenu

It should be obvious that the DosFdFcn Menu is almost identical to the Xenix FdArkFcn Submenu discussed in the last few pages. As before, you can toggle back and forth between a file listing of the DOS floppy disk and your current hard disk directory by using [F1] and [F2] respectively.

The [F5] key takes you to the FileDir Submenu. Here too, the commands work the same as they do on the FdArkFcn Submenu, except for [F10], which returns you to the DosFdFcn Menu.



The [F6] key on the DosFdFcn Menu will give you the DOS FileDel Submenu, which is identical to the DelFcn and FdArkFcn versions described earlier (except for [F10] again). The "Last Chance" screens all mention DOS.

The [F7], [F8], and [F9] keys also work the same as they do on the FdArkFcn and FileFcn Menus.

All of these DosFdFcn commands work on both the hard disk and the DOS floppy, again depending on which one's set of files is on screen when you use them.

Copying Files from a DOS Floppy Disk to the Hard Disk

The [F3] key on the DosFdFcn Menu gets used when you want to go to the DOS FdToHd (Floppy Disk to Hard Disk) Submenu. As you can see in Figure 3-13, this gives you a choice of copying one file, several selected files, or all files in the floppy's directory, over to the hard disk, just like the Xenix FdArkFcn Submenu does. In addition, due to special DOS considerations, there's a special function for copying a binary data file (such as a graphic).

To copy a single file, make sure that the cursor bar is over the file on the floppy that you want to copy. (You may need to [F10] back to the DosFdFcn Menu temporarily, so you can [F1] the floppy files into view first.) With the cursor bar in place, and the FdToHd Submenu showing, press [F1] to make the copy. This message will appear during the copying:

MECCA III Archive in progress.

Currently archiving file "filename.ext".

If the file already exists under that name in the directory that it's being copied to, you *won't* get an overwrite warning, so be careful! On the other hand, since DOS filenames are usually stored as ALL CAPS and Xenix filenames as lower case, a file coming from a DOS floppy will overwrite an already resident file only if the resident file is listed in ALL CAPS. This also means that you will want to Move the file to a lower case version of its name after copying.

If you've selected several files on the floppy with the [5] key, you can copy them over at the same time by choosing [F2] on the FdToHd Submenu. The archiving commentary will repeat for each file as it's done.

To copy over the entire contents of the floppy's directory, choose [F3], and do the pathname [Enter] routine on the same old screen, and watch the familiar message return (it may be boring, but it's consistent!).

If you have a binary data file you want to transfer, use the [F4] key. Binary files consist of nothing but 1's and 0's, instead of the ASCII characters (normal letters and numbers) that make up most other files you'll be using. DOS handles these differently than Xenix does, which is why you need a separate function to transfer them.

Copying Files from the Hard Disk to a DOS Floppy Disk

[F4] on the DosFdFcn Menu is used to summon the DOS HdToFd (Hard Disk to Floppy Disk) Submenu. This works exactly the same way as the Floppy to Hard Disk version just discussed earlier.

As before, use [F1] to copy/archive a single file; [F2] to do a group of files; [F3] for all the files in the hard disk directory you're in at the time, and [F4] to copy a binary file to the floppy. Do make sure that you really are looking at the hard disk directory before you start though, and don't do a "AllToFd" ("All to Floppy Disk") unless you're sure there's enough room on your floppy.

[F5] = FileFcn: The File Display Functions

If you choose [F5] on the MinorFcn Menu, you'll get the "FileFcn Menu" shown in Figure 3-14:

F1 = FileSel	F2 = NameSort	F3 = DateSort	F4 = SizeSort	F5 =
F6 =	F7 =	F8 =	F9 =	F10 = MajorFcn

Figure 3-14: The FileFcn Menu

These functions are to enable you to rearrange the file display on your screen any way you like. If you choose [F1] here, you'll see this display:

MECCA III: File List Selection Screen

File List Selection Qualifier: _____

This is where you can type in a filename and extension combination using Xenix wildcards, such as "march???.txt" for all your March text files, or "*.doc" for all your documentation files, or "adam.*" for all of Adam's files, etc. Press [Enter], and only the files that match your criteria will be displayed on the monochrome monitor.

You can also sort your file display by alphabetical order (NameSort), most recently updated (DateSort), or largest to smallest (SizeSort), by pressing [F2], [F3], or [F4] respectively. Naturally, [F10] is what takes you back to the MajorFcn Menu.

[F6] = SendFcn: Outputting Previously Composed Files

This choice on the MinorFcn Menu lets you send previously composed batch files to a desired output device. Pressing [F6] will present you with the SendFcn Menu, shown in Figure 3-15:

F1 = ToLW	F2 = ToAPS	F3 =	F4 =	F5 =
F6 =	F7 =	F8 =	F9 =	F10 = MajorFcn

Figure 3-15: The SendFcn Menu

If you choose [F1] here, the previously composed batch file your cursor is on will be sent out to the LaserWriter (or other PostScript device). If you choose [F2], it will go out to an APS-5 phototypesetter (or other Grafica compatible system).

As with the regular Compose command, if you try to use either of these Send commands to send a file to a device that isn't actually attached at the time, you'll probably hangup the program and have to bail out with the [Del] key.

[F7] = SysMain: System Maintenance

This choice on the Minor Functions Menu gains you access to several highly technical functions. These functions exist to be used by your System Manager or another highly skilled technician in your organization. *We do not recommend that the System Maintenance functions be used by amateurs!* If you don't know what you're doing, you should avoid this menu completely.

F1 = XlateEdt	F2 = XlateNew	F3 = KernEdt	F4 = KernNew	F5 = HyphTest
F6 = HyphUpdt	F7 =	F8 =	F9 =	F10 = MajorFcn

Figure 3-16: The SysMain Menu

Figure 3-16 shows the available functions: you can edit or create Translation Tables, edit or create Kerning Tables, or modify the Hyphenation Dictionary, by pressing the labeled Function Keys.

On each occasion when you invoke one of these functions, you'll be given a series of menus like those discussed in this chapter. Because these matters are highly technical, information about them is given in *Volume 5: System Maintenance*.

[F10] = MajorFcn: Toggling to the Major Functions Menu

This Function Key on the Minor Functions Menu does one simple job: it takes you back to the Major Functions Menu.

And that's it for the monochrome menus and their various functions. Together they represent a powerful collection of file management tools. More importantly, they enable the user to avoid having to learn Xenix!

Chapter 4: Creating Simple Graphics

Starting Up MECCA III

In this chapter and the next, we'll explore some of the basic techniques for using MECCA III to create simple and moderately complex graphics. Details on creating very complex graphics will appear in *Volume 3: Illustrating and Drawing*.

We start by firing up MECCA III as described in the last chapter: by pressing [F8] from the Major Functions Mono Menu. The computer's hard disk will whirl and grind for a while, then you'll see on your color monitor a display that looks like Figure 4-1.

The MECCA III Color Screen

The large square box taking up most of the screen is the "Window". It can show an entire large graphic or a giant-sized expansion of a tiny part of a graphic (with the {Zoom} option discussed in the next section).

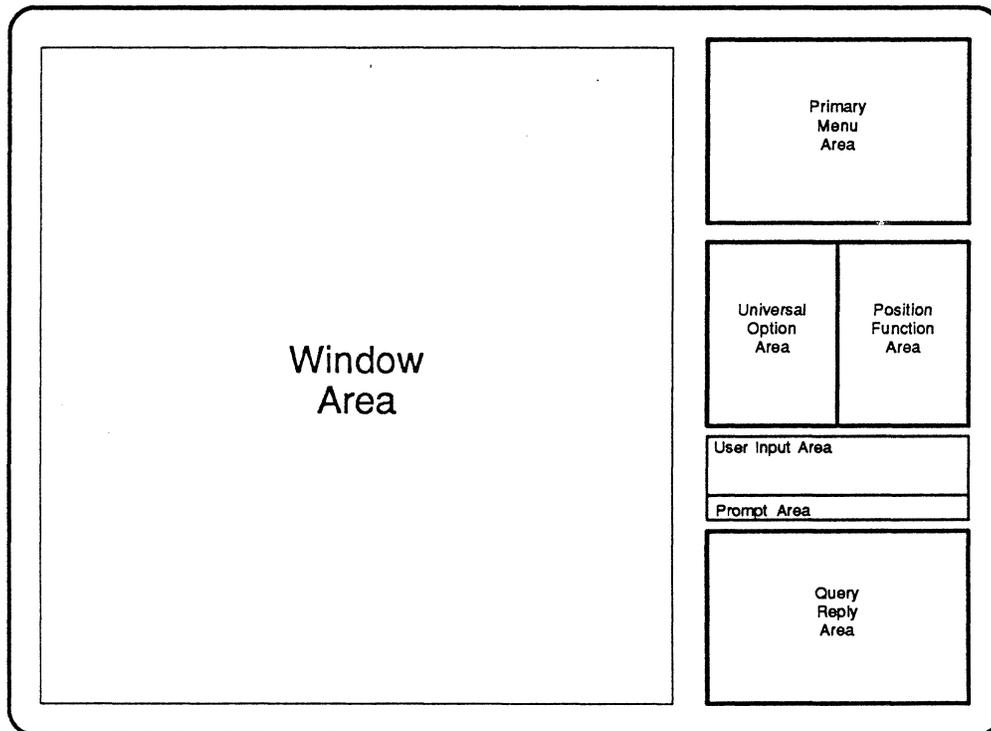


Figure 4-1: The Opening Screen of MECCA III

The blue rectangle in the top right is the "Primary Menu Area". This is where the most important of the menus you'll be using will appear.

The green rectangle below it to the left is the "Universal Option Area". It contains options that can be used at any time *within* the other options chosen from the other menus.

The orange rectangle to the right of the green one is the "Position Function Area". It contains options that are used to allow precise positioning of the starting and stopping points needed by the options chosen from the other Areas.

Below the green and orange areas is the "User Input Area", which is where you will type your instructions to MECCA III, and below that, the "Prompt Area", which is where MECCA III will ask you for the information it needs to follow your instructions.

Finally, at the bottom right of the screen is a red rectangle called the "Status Area", which is where MECCA III gives you detailed information in answer to your questions.

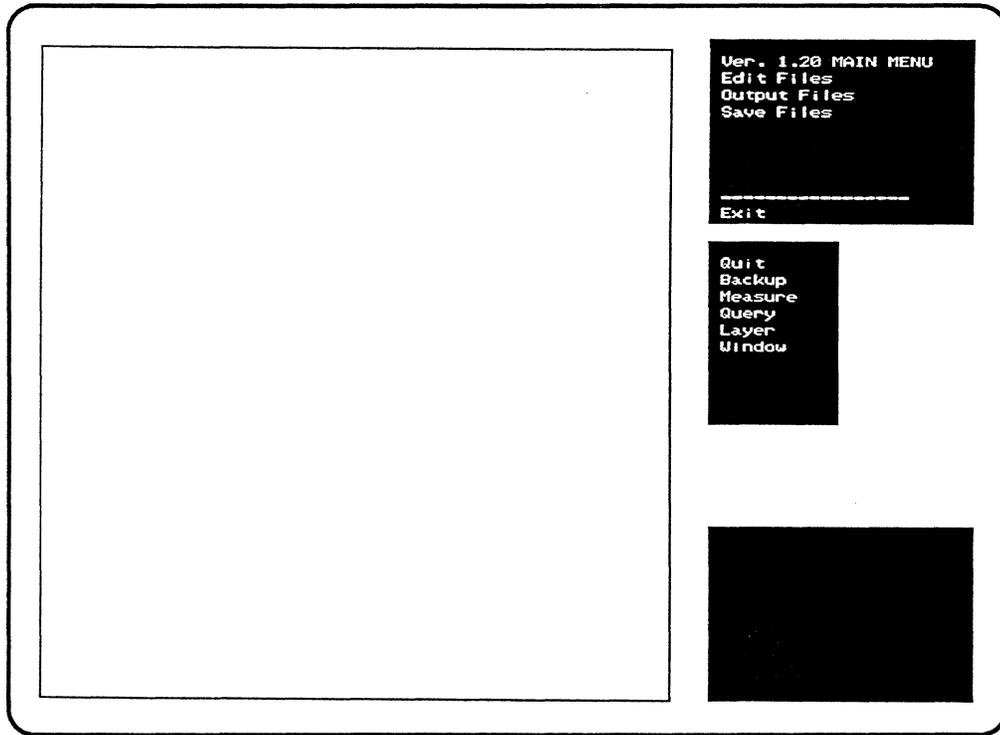


Figure 4-2: The Opening Screen Menus

Figure 4-2 shows how we're going to present actual screen images from the MECCA III color monitor. You'll immediately notice that our figures have black ink where the monitor has bright light, and white space and letters where the monitor has dark. So when we talk about a black bar appearing in the menu areas when you move the cursor, you'll see this effect as a white bar in the screen images. (The important point, that moving the cursor over menu choices makes those choices reverse their lettering and backgrounds, should still be clear.)

The Stylus, Cursor and Crosshairs

Figure 4-3 shows a detailed view of the electronic stylus that attaches to your graphics pad, as well as closeups of two items you'll often see on your color monitor screen: the X-shaped cursor that indicates the relative position of the stylus on the pad; and the "crosshairs" mark made on the screen when the stylus is pressed down to indicate a position to be held in memory by MECCA III (frequently with the {Hold} option).

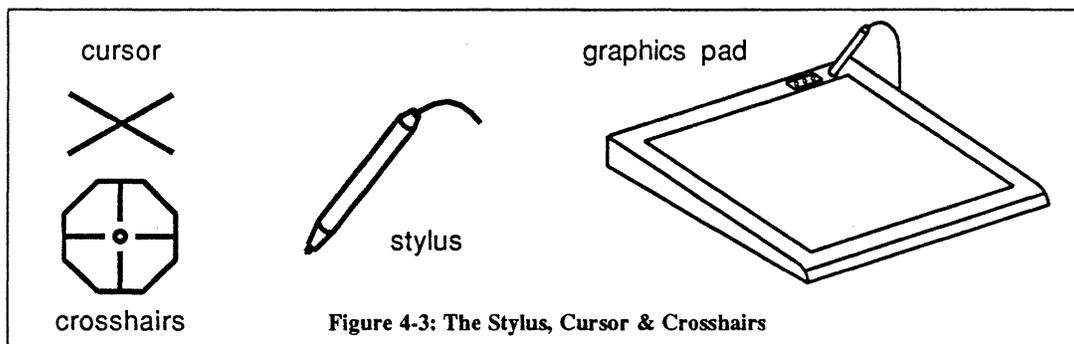


Figure 4-3: The Stylus, Cursor & Crosshairs

Make sure your graphics pad is turned on and cabled properly (see Chapter 1). Pick up your stylus in your regular drawing hand and place it gently on the surface of the graphics pad, near the left side. If the stylus is anywhere near vertical, you'll probably see the X-shaped cursor appear on screen in the Window Area. Move the stylus around gently, without scratching the surface of the pad. You'll notice that you can move the cursor everywhere on the color screen, and that when you place it over words in one of the colored areas, the background shifts to a bar of black instead of its previous color.

Move the cursor back over the Window Area. Press the stylus very gently down on the pad, and you'll notice that there is a slight "give" in the stylus. This closes a circuit inside the stylus that, under various circumstances, will cause MECCA III to display a set of the crosshairs, or to initiate the running of a chosen option.

"Choosing" and "Picking"

As used in these books, "choosing" refers to moving the cursor over the various options and functions listed in the colored boxes, and pressing the stylus down to indicate what you want MECCA III to do next. Throughout the rest of this chapter, we'll be using **boldfaced** type to tell you what options to choose, in what order, to accomplish your goals. "Picking" refers to using the cursor in the Window Area to indicate positions or items to be affected by the options or functions you have chosen.

Choosing Options with the Function Keys

Throughout this chapter and the next, we'll be talking about choosing options with the stylus. However, if you like, you can also choose options in the Primary Menu (blue) Area and the Universal Option (green) Area by using the Function Keys that have associated numbers. There's a maximum number of ten options that can appear in either area. Those in the blue box take Function Keys [F1] through [F10], in simple top to bottom numeric order. Those in the green area take [Shift]ed versions of [F1] through [F10] in the same order (if you have a keyboard with Functions Keys labeled [F11] through [F20], you can use those instead).

Figure 4-4 shows how these Function Key assignments work. Remember that these are an *alternate way* to "choose" options from the blue and green boxes only. Most users will prefer to use the stylus to choose options and that's the way we're going to give most directions.

There are two other ways to use the Function Keys when creating graphics: to load graphics or composed batch files (see next section and Chapter 6) and to edit text within graphics or composed batch files (where the Function Keys will have their usual "vi" meanings, as shown in Chapter 3). However, in both these situations, your attention will then be on the monochrome monitor.

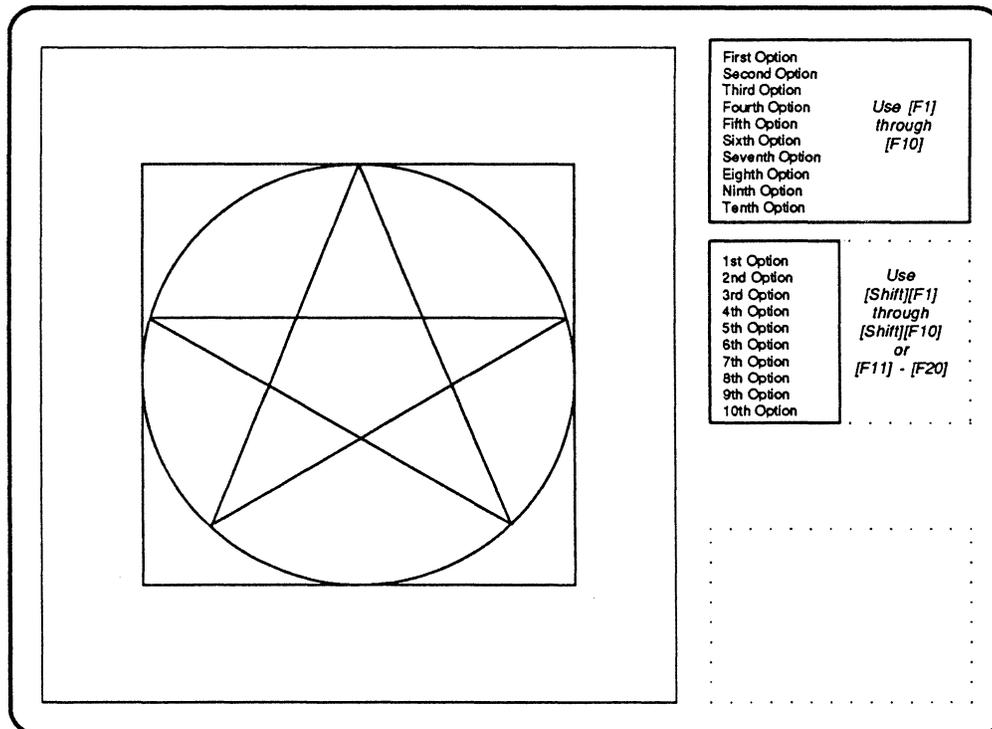


Figure 4-4: Color Function Key Assignments

Starting a Drawing

Figure 4-4 also shows a simple graphic: a star inside a circle inside a square. In the next few pages we'll explore how to use MECCA III to create this picture, as well as many others.

Begin by moving the cursor over to the Primary Menu Area. Notice how the display of each of its lines shifts from black letters on blue to white letters on a black bar, each time the cursor passes over a line. Choose your first option by placing the cursor over {Edit Files} and pressing gently down (*or* you could press [F2] *instead*). You'll see a new menu appear, called the "Edit Files Menu". Choose {EditIllustration} by once again pressing the stylus down while the cursor is over the desired option (again, you could press [F2] *instead*).

The blue area will clear and a prompt saying, "Select File Name from Monochrome Screen Display" will appear. All of a sudden your monochrome monitor will clear and your files will appear as they did with the monochrome menus discussed in Chapter 3. A list of Function Key assignments will be at the bottom of the screen, as usual. Figure 4-5 shows a closeup of this "LoadFcn Menu".

F1 = Load	F2 = Filter_2	F3 = Filter_3	F4 = Filter_4	F5 = DirBack
F6 = DirFwd	F7 =	F8 =	F9 =	F10 = Quit

Figure 4-5: The LoadFcn Menu

[F5] and [F6] should look familiar, since they're the same old "DirBack" and "DirFwd" functions discussed in Chapter 3. They can be useful if the graphic or composed batch file you need to load is in some other directory than the one you started the color side from.

[F2], [F3], and [F4] will not be used by most of you. They will allow you to load graphics taken from other systems, by filtering through Custom Translation Utilities. If you haven't gotten any CTU's from Amgraf, then these choices won't do anything.

[F10] will Quit the Loading Mode, leaving the Window Area of the color screen filled with whatever graphic (if any) was there when you first went to the Edit Files Menu (and taking you to the menu discussed next).

The most important Function Key on the LoadFcn Menu is [F1]. You can move the cursor bar to a graphic (or composed batch file if that's what you asked for), and press [F1] to load it. As soon as a graphic file has finished being loaded (anywhere from ten seconds to a minute or two), the monochrome monitor will clear, and the blue area on the color monitor will be filled up with the most important menu for creating and modifying graphics: the "Edit Illustration Menu", which we're going to call the "E.I.M." for most of this chapter. Figure 4-6 shows the sequence of option choices which will lead you from the Main Menu to the E.I.M.

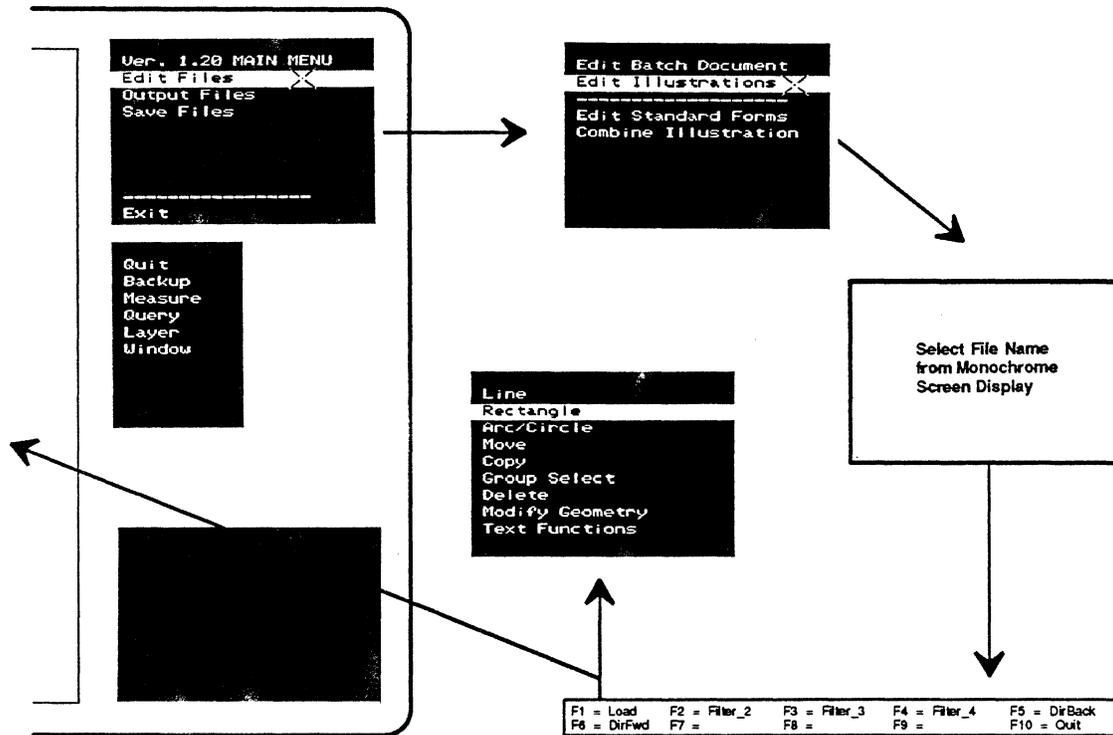


Figure 4-6: Getting to the Edit Illustration Menu

All this is the normal way that you would load a file for editing. But for this first exercise, just go to the LoadFcn Menu (wait for it to actually appear), press [F10] to Quit *without* loading a graphic, and wait a few seconds. You'll get the E.I.M. and the Window Area will remain empty (this technique, of just Quitting out of the LoadFcn Menu, is also useful when you want to resume editing a graphic that you have just saved for security reasons).

Drawing Lines

Choose the {Line} option on the E.I.M. and you'll immediately see the Line Menu show up in the blue area. In the red area you'll see a status report on the "Current Setup" for line weight, style, layer and mode (these are all the default values at this point). In the Prompt Area, the words "pick vector start" will appear. Move the stylus over to a part of the pad corresponding to the Window Area and press it down. The Prompt Area now says "pick vector end". Now move the stylus away a few inches and you'll notice a funny white line following the cursor on screen. This white line will shorten or lengthen depending on how far away from your original starting point the cursor is. As soon as you press the stylus down, the line changes to a color and freezes on screen. The color will probably be green, indicating a 1-point line weight (the default value). Practice moving the cursor around, and make lots of lines (but avoid the lower right corner for now). See Figure 4-7.

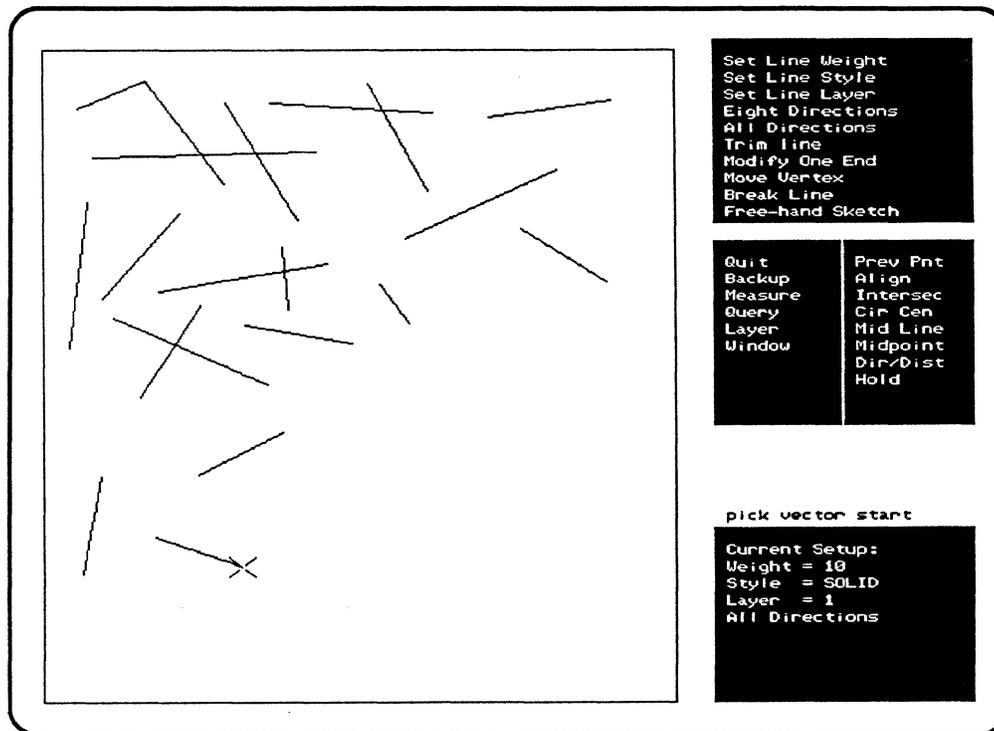


Figure 4-7: Drawing Lines

Choose the {Set Line Weight} option now. You'll see a listing of available point sizes of lines, with associated colors. It should look like this:

```

5 (0.5 pt) Cyan
10 (1.0 pt) Green
15 (1.5 pt) Blue
20 (2.0 pt) Magenta
25 (2.5 pt) Red
30 (3.0 pt) Orange
0 (Invisible) Cyan

```

The numbers used in the listing are in tenths of a point: 10 = 1pt, 15 = 1.5pts, etc. (All the size references in MECCA III are done in these units, called "decipoints".) Choose a new line weight and you'll be returned to the Line Menu. Try drawing some more lines. Then go back and {Set Line Weight} to something different, and draw again.

If you like, you can choose the {Set Line Style} option and look at the variety of line styles you have available:

```

Solid
Solid Rounded Ends
Dotted
Dashed

```

Solid lines (with squared ends) are the default setting. Rounded ends work best with thick lines. Dotted or dashed lines have a variety of uses, especially as

construction (temporary) lines. Try choosing a different line style and draw a few more lines. (They won't look different on the 13" RGB monitor.)

Choose the {Eight Directions} option and see what happens when you try to draw lines (put them in the lower right corner of the Window Area). Yes, it's true, in this mode you can draw lines only at 45 and 90 degree angles (see the matching corner of the Window Area in Figure 4-8). This mode can be very useful when you want precisely horizontal or vertical lines, or 45 degree ones. In order to get back your previous flexibility, choose the {All Directions} option.

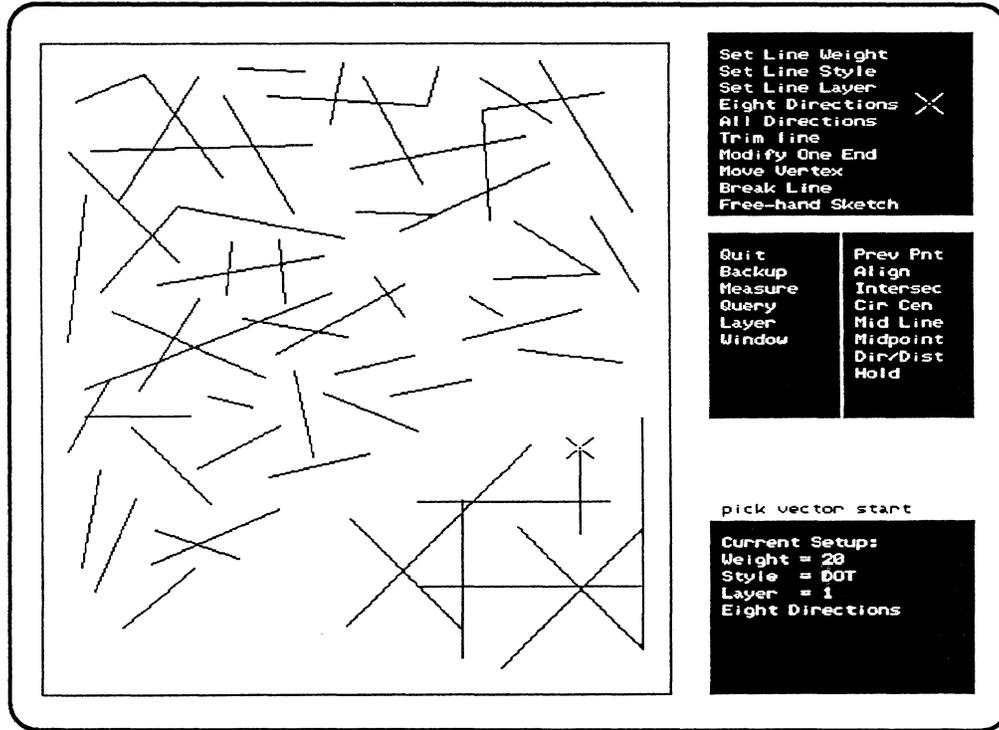


Figure 4-8: Using the {Eight Directions} Mode

Deleting and Restoring

After a while, your screen is going to get filled up with lots of different colored random lines, so you'll want to get rid of them. Move your cursor down to the green area and choose the {Quit} option. You'll immediately be out of {Line} mode and back at the previous menu: the Edit Illustration Menu (E.I.M.). This is what {Quit}ing usually does -- it stops whatever you are doing at that instant, and either immediately sends you back to a previous menu or lets you go back with one more choice of {Quit}. By choosing {Quit} repeatedly, you can march back to the original Main Menu, then go forward again in a different direction.

Now that you are back at the E.I.M., choose {Delete}. You'll be prompted to pick an item to delete, so press the stylus down when the cursor appears to be over a line you'd like to get rid of. It should vanish instantly. Go ahead and {Delete} several more. Figure 4-9 will give you some idea of what it might look like.

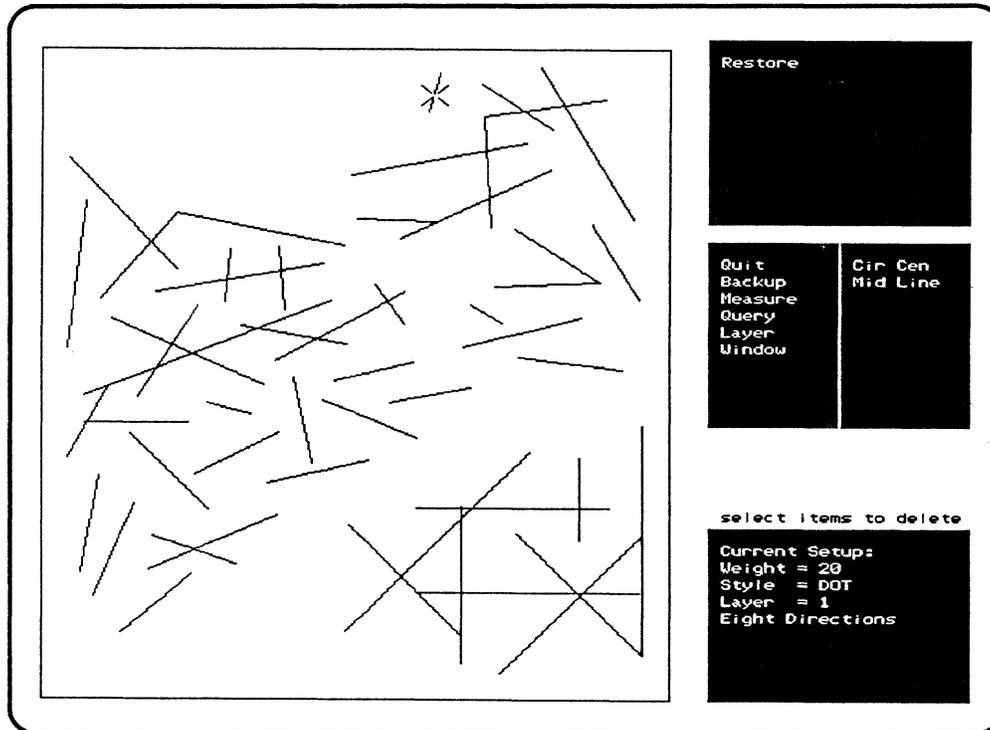


Figure 4-9: Using {Delete} Mode

You may have noticed that when you first chose the {Delete} option, a single option then appeared in the blue area, saying {Restore}. Try choosing {Restore} now, while looking at an area where you erased the last line. The line you had just {Delete}d will reappear. This safety feature is handy for correcting mistakes, as is the {Backup} feature in the Universal Options Area (the green), which works with other modes. *But* both {Restore} and {Backup} will reverse only the most recent action on your part.

Selecting and Unselecting Items for a Group

If you created a lot of lines on the screen, it could take a while for you to {Delete} them all. So try choosing the {GroupSelect} option now. You'll see a listing, the Group Menu, of eight ways to Select or Unselect items. Choose {Select Pick} for now, then use your stylus to pick several different lines. Each of them will go white as you touch them, regardless of their original color. Now {Quit}{Quit} out of the {Group Select} mode (people often want to use several different types of Selecting and Unselecting, which is why it takes two {Quit}s here). You'll be back at the E.I.M., so choose {Delete} again, and pick just one of the white lines.

They all vanished! This is because by {Select Pick}ing them, you defined them to MECCA III as all being members of a Group you were interested in. Anything you do to one member of a Group, you do to all its members ("All for one, and one for all!"). To see further examples of this, {Quit} out of {Delete} mode, choose {GroupSelect} again, then {Select Inside}.

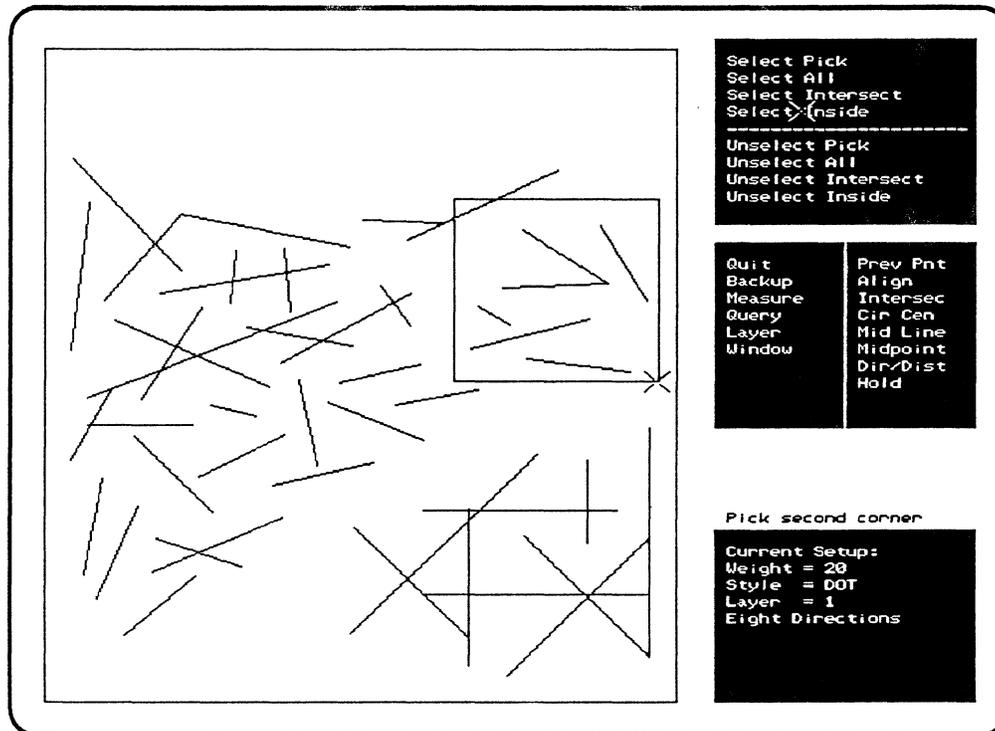


Figure 4-10: The Elastic (Group)ing Box

Move your cursor back over the Window Area and press it down somewhere near some short lines you drew. Move it away slowly in a random direction and you'll see a white box appear, with one corner where you started and the other where your cursor is. Expand this box enough to enclose several lines completely, and press the stylus down. See Figure 4-10 for an example of what the box can look like (though the white lines are printed as black ones). All the lines that were inside the grouping-box will turn white to indicate that they have been Selected. To prove this, {Quit}, {Quit}, {Delete}, and pick any of the now white lines, and watch them vanish.

To see a slightly different method for {Group Select}ing, {Quit} out of the {Delete} mode again, then choose {Group Select} {Select Intersect}. Once more you'll be able to draw a grouping-box, but this time make sure that some of your random lines are partly in and partly out of the white box area. When you finish the box by pressing the stylus, you'll see that every line that was intersected by the box (or even touching it) has now been Selected. You could {Delete} them again, but that's getting boring. So instead, let's {Quit} *once* to halt the {Select Intersect} mode, but keep the Group Menu, so we can choose {Unselect Pick}. Pick a few of the white lines, and they'll go back to their original color. In fact, the Unselect modes are all the exact opposites of their Select versions, and they can be handy if you've accidentally Selected something you didn't really want included in your Group.

But for now, let's get rid of all your previous lines as quickly as possible. {Quit} out of {Unselect Pick} mode and choose {Select All} -- and everything in the Window Area will turn white. {Quit}, {Quit}, {Delete}, and pick any white line. The entire Window Area will be empty within seconds! {Quit} out of {Delete} mode and we're ready to go onward.

Making Rectangles and Squares

When you choose the {Rectangle} option, you'll find that you get a submenu (not-too-surprisingly called the Rectangle Menu) very similar to the Line Menu. You can {Set Line Weight} here if you like, then move the stylus over to the Window Area. Press it down somewhere, then move it around. A white rectangle will appear, in exactly the same way that the grouping-box did, only this one will turn an appropriate color when you press the stylus down (instead of white). Go ahead and make several rectangles like those in Figure 4-11.

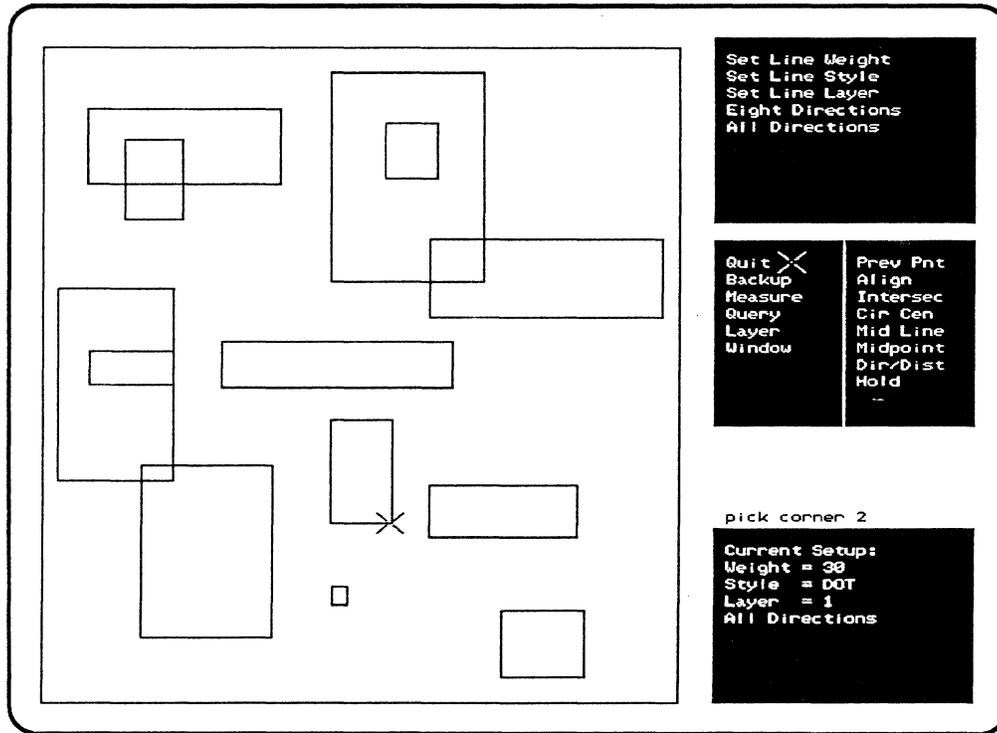


Figure 4-11: Using {Rectangle} Mode

With practice you can make some that look like pretty good squares, but if you want to be precise, there is another way. Press the stylus down in the middle of a clear area. Then, instead of moving it across the pad, put it back in its holder, and type 350 and press the [right arrow] key. You'll see a white line representing 35pts of length appear to the right of your original spot. Now type 350 and press the [down arrow] key. The white line will turn into the top of a white square. Now just press [Enter] and the square will be accepted by MECCA III (and change to whatever the last color/line weight selection was). By using numbers and the [arrow] keys, you can produce very precise rectangles and squares. Play with these techniques for a while, then {Delete} most of them and {Quit} back to the E.I.M.

Making Circles

Circles are just as simple, and are done in much the same way. Choose the {Arc/Circle} option to get to the Arc/Circle Menu. {Set Line Weight} if you like, then press the stylus down wherever you'd like the center of a circle to be, and slowly move the cursor. You'll see a white circle appear, which will expand and contract as you move the cursor further from or closer to the chosen center. When you like the size of the circle, just press the stylus down, and a colored version (in the last selected line weight) will remain. You can then make several more circles in the same fashion, as shown in Figure 4-12.

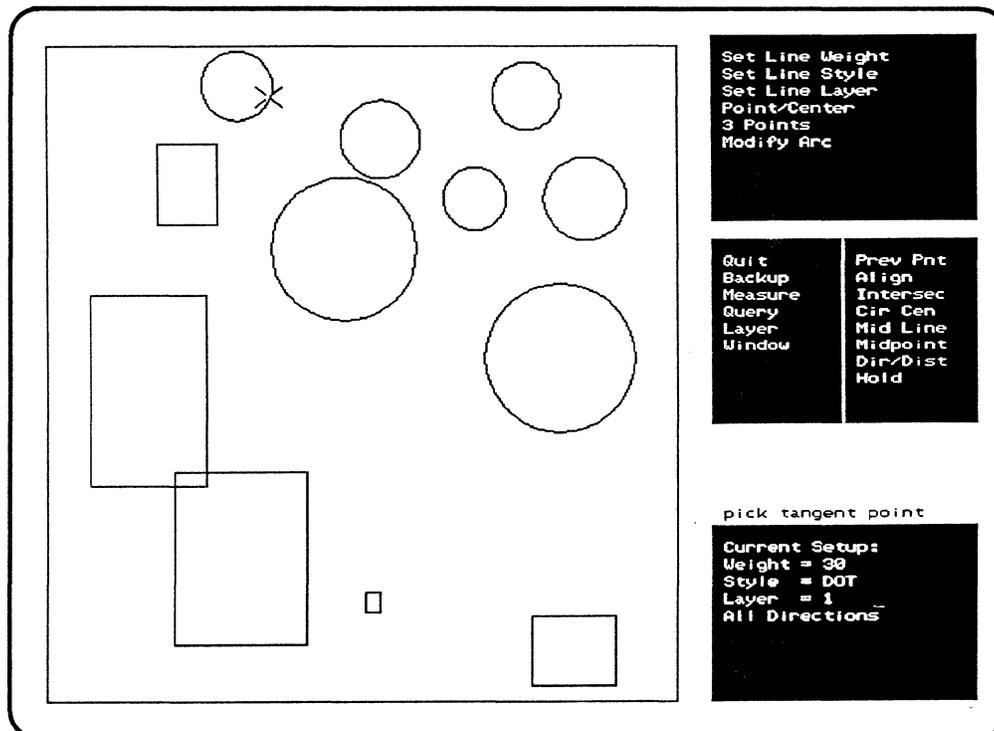


Figure 4-12: Making Circles with {Arc/Circle} Mode

As with the {Rectangle} mode, you can get precise with circles as well. Pick a spot to be the center, set the stylus aside (*not* on the surface of the pad!), type **150** and press any [arrow]key. This defines the radius of the circle you want, it will show up on screen, and all you have to do is press [Enter] to make it permanent. Go ahead and make a few more in different sizes and line weights, then {Delete} most of them and {Quit} back to the E.I.M.

Moving Items

Obviously, not everyone is going to be able to position illustrations on screen by eye, so MECCA III enables you to pick up items and {Move} them around anywhere you like. Try it now. Choose {Move} to get to the Move Menu, then {Move Anywhere}. Pick a corner of one of your rectangles by pressing the stylus down on it (you'll see a set of crosshairs appear), move the cursor away a short distance, and press it down again. The rectangle you picked now has that same corner in the new position. Pick something else, say one of the circles, and do it again. Notice that every time you {Move} something with the {Move Anywhere} option, the picking spot on the original matches the destination spot picked. See Figure 4-13.

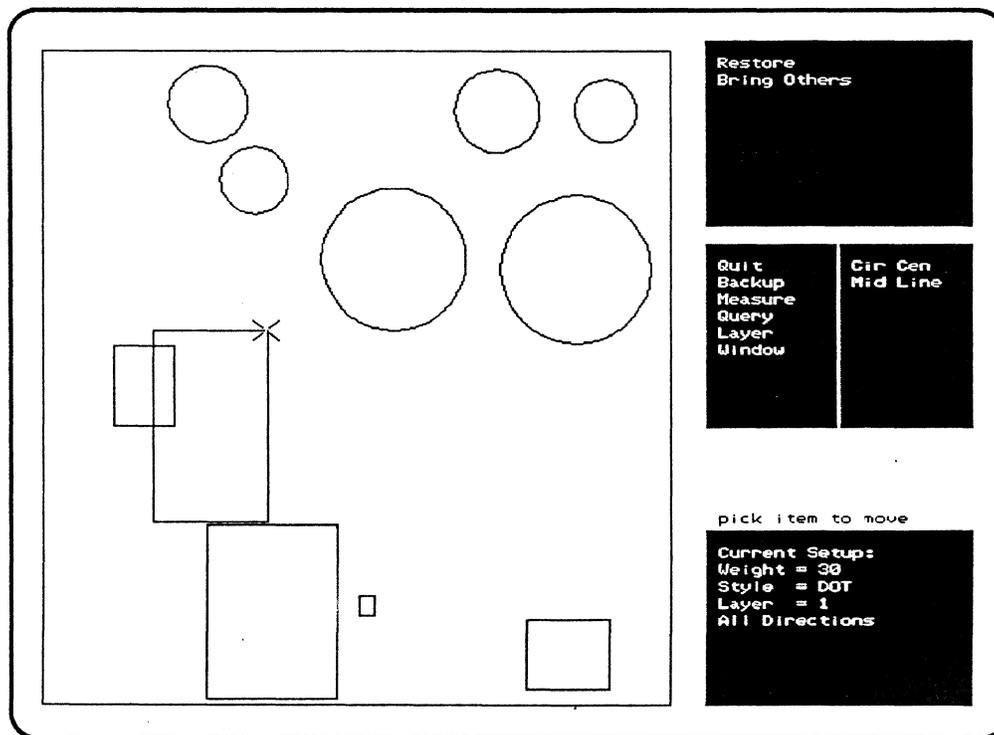


Figure 4-13: Using the {Move Anywhere} Mode

Now {Quit} out of the {Move Anywhere} mode and choose {Move Y Position} instead. Pick an item, then move the cursor directly above or below it, and pick a destination spot. The item will move straight up or down, with the picking spot on it matching the exact vertical position of the destination spot. Think about that a moment, then do it again, this time choosing a destination spot at a wide angle above or below the item's current position. Again the item will move straight up or down, to match the Y-coordinate (the precise vertical position) of the destination spot (see Figure 4-14). {Quit} out of {Move Y Position} mode, and try {Move X Position}. You'll quickly see that it works exactly the same way, only in the horizontal. Try moving things around on screen for a while, then eventually {Quit} back to the Move Menu.

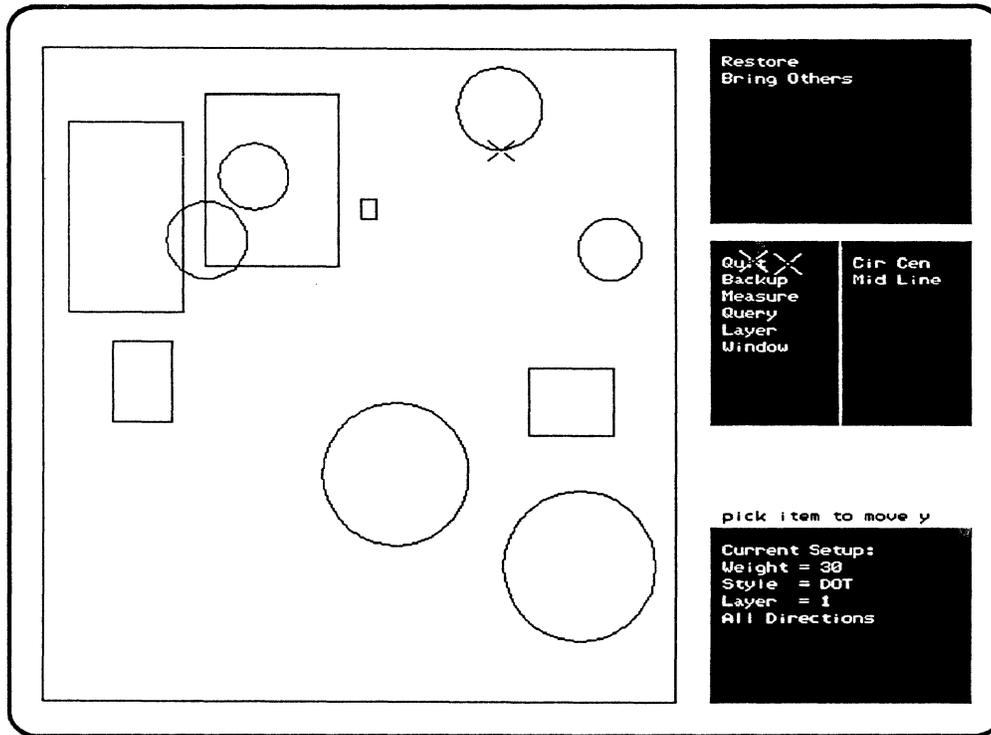


Figure 4-14: Using {Move Y Position} Mode

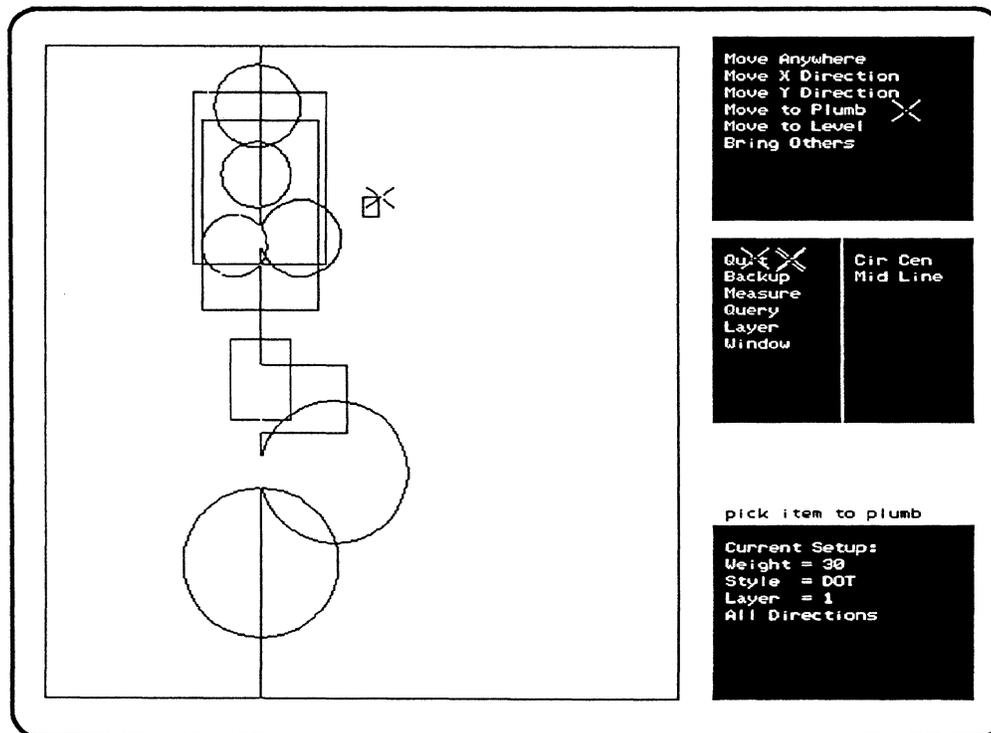


Figure 4-15: Using {Move to Plumb} Mode

When you want to be very precise, you'll want to move items to a Plumb Line or a Level Line, so let's see how to do that. Choose the {Move to Plumb} option first. You'll see a prompt asking you to indicate the Plumb Position, so pick a spot somewhere near the middle of the screen. A vertical white line will appear. Now pick a few items and watch them move horizontally to place their pick spots on top of the Plumb Line. You have something you'd like centered? Just choose the {CirCen} function in the Position Functions (orange) Area, before picking the edge of a circle; or the {Mid Line} function before choosing a horizontal line in a rectangle or square (or any other noncircle really). See Figure 4-15 for examples of items being Moved to a Plumb line.

{Quit} out of {Move to Plumb} mode and try {Move to Level} instead. You'll see it works in exactly the same way, only on the vertical axis. When you've {Move}d things around as much as you like, {Quit},{Quit} back to the E.I.M.

Copying Items

Choose the {Copy} option now, to go to the Copy Menu. It looks suspiciously familiar! Yes, it's just variations on the same commands you were just using. Try {CopyAnywhere} first. Pick a spot on an item, then pick a destination spot. Just as with the {Move} option, you'll suddenly see the item in the new position. But the original is still right where it was (see Figure 4-16).

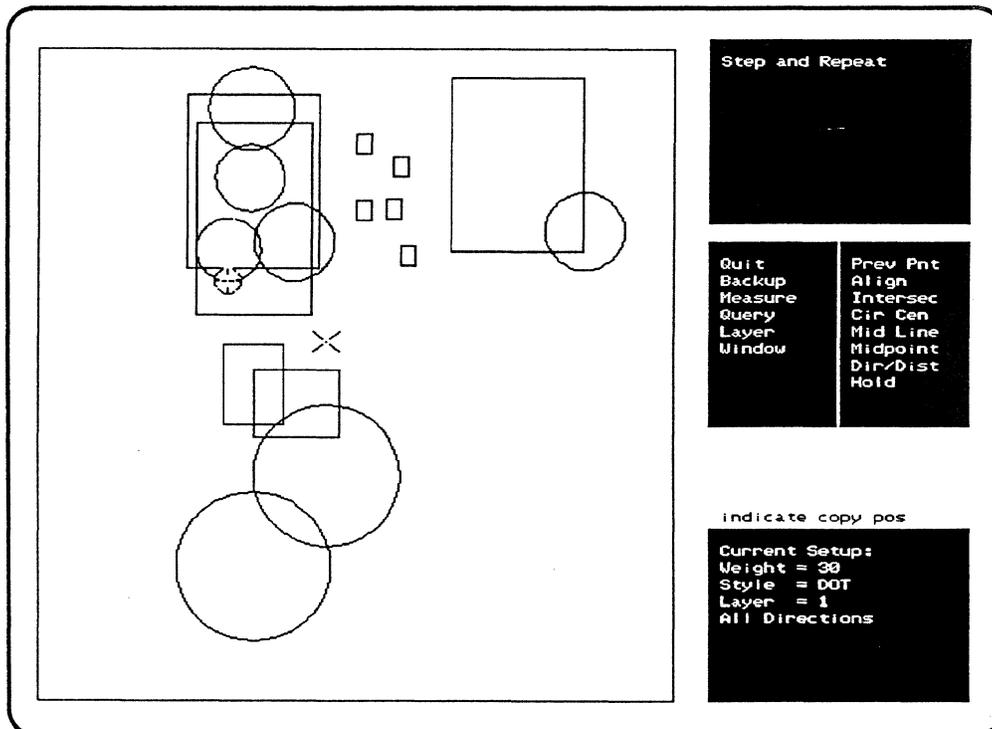


Figure 4-16: Using {Copy Anywhere} Mode

If you like, you can choose the {Step and Repeat} option which will have appeared in the blue area, and another copy will appear exactly the same distance from the first copy as it was from the original. And another and another, each time you use the {Step and Repeat} option. See Figure 4-17.

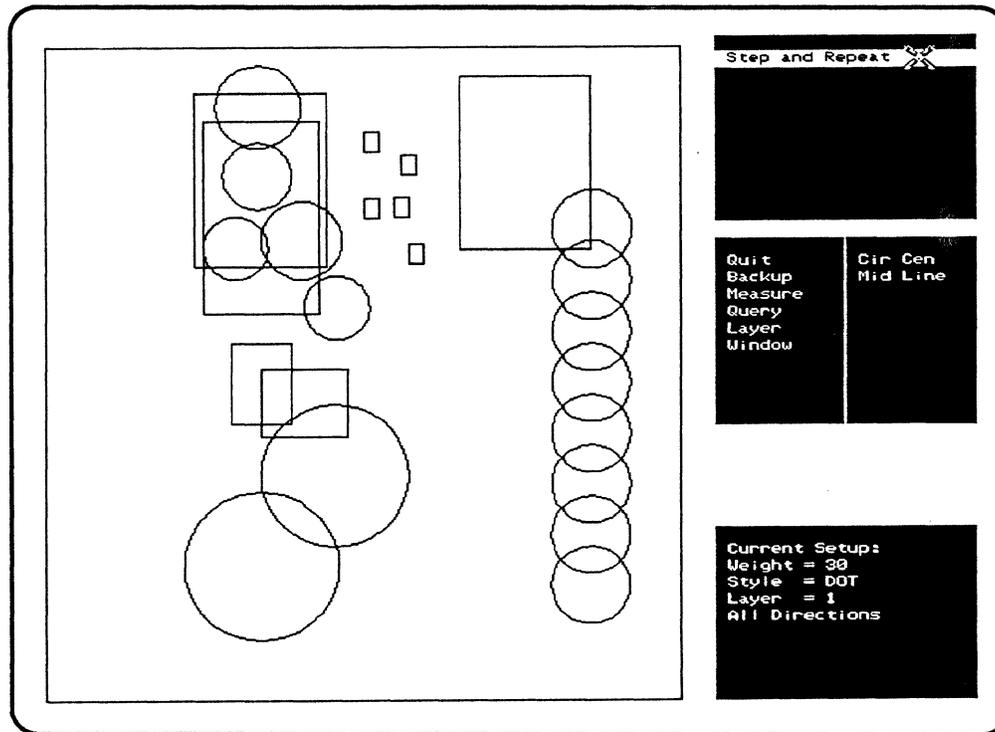


Figure 4-17: Using {Step and Repeat}

The other {Copy} options act exactly like their {Move} counterparts, and a little experimenting will teach you more than we can here. When you're finished, go back to the E.I.M. with the {Quit} option.

Windowing and Zooming

There's one last bit of technique to mention before we go about creating the graphic shown back in Figure 4-4. Many times you will want to see very tiny details of an illustration, and with MECCA III there's practically no limit to how much detail you can see. Choose the {Window} option from the green area, and you'll see a Window Menu appear in the green. Then choose {Zoom}. You'll be prompted for a starting spot, so look around at your current collection of items on screen, and find an area where several items closely overlap. Pick a spot off to the side of this and move the cursor slowly. Yes, it's another of those "rubberband boxes", but watch what happens this time when you press the stylus down: the Window Area is suddenly filled with an expanded version of the area you marked out with the box -- just as if you were using a zoom lens on a camera. See Figures 4-18 & 4-19 for before and after pictures of this.

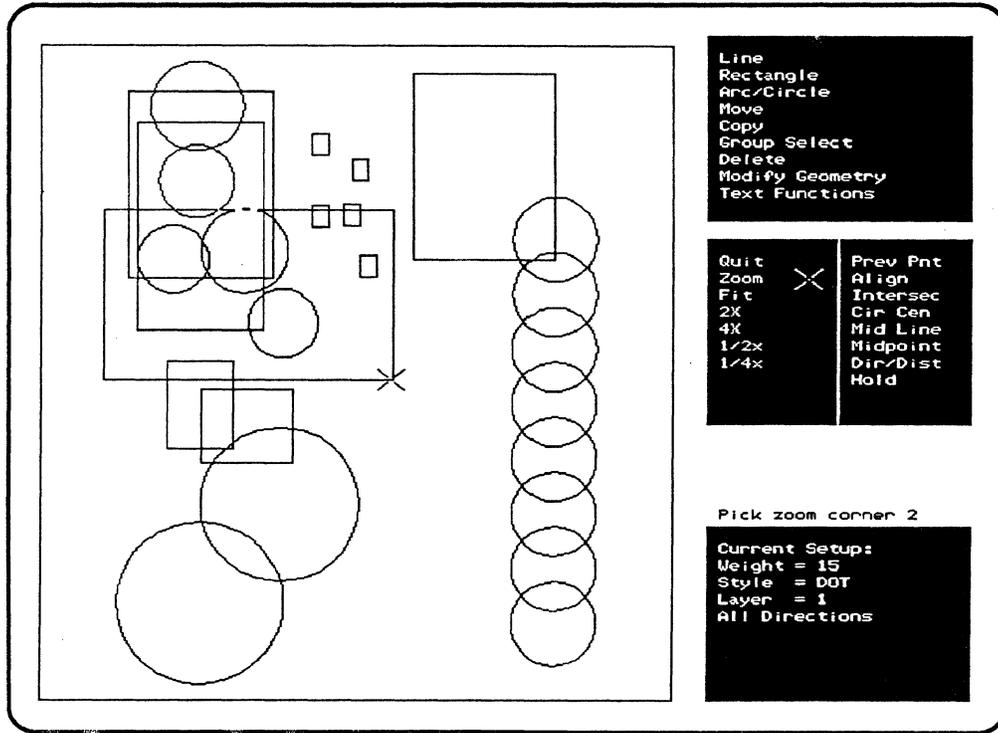


Figure 4-18: Before (Window){Zoom}ing

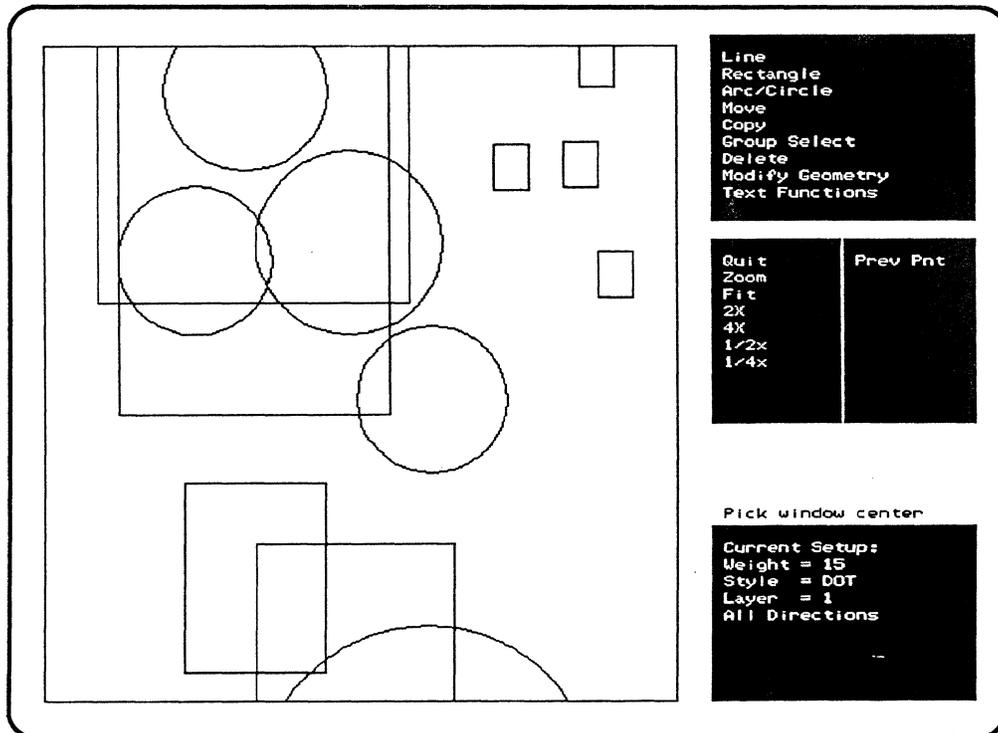


Figure 4-19: After (Window){Zoom}ing

Press the stylus down in the corner of the Window Area and watch the image jump. You may not have noticed, but the Prompt Area had a message for you, telling you to pick a new center (for the Window Area) or another of the {Window}ing options. You can keep pressing the stylus down, and thus keep moving the view, a process known as "panning" (again from movie cameras). Or you can choose one of the other options from the Window Menu, to expand or contract the image on screen. You can even {Zoom} up again and again, making more and more of the details clear. So even if you had picked an area where the lines were so close together that they originally appeared to be overlapping 100%, {Zoom}ing will show you them distinctly enough that you can pick one or the other for a {Delete}, {Copy} or {Move}. That's the whole point of the {Zoom} option!

When you've done a lot of {Window}ing, and you want everything back to its original size, just choose the {Fit} option on the Window Menu. This will take everything in the current picture and fit it into the regular Window Area boundaries (see Figure 4-20). Then just {Quit} again to get out of {Window} mode and you can continue with whatever you were doing (but you can also continue most of the other functions and options while {Windowing} -- you just can't go back to any earlier menu without exiting the Window Menu first).

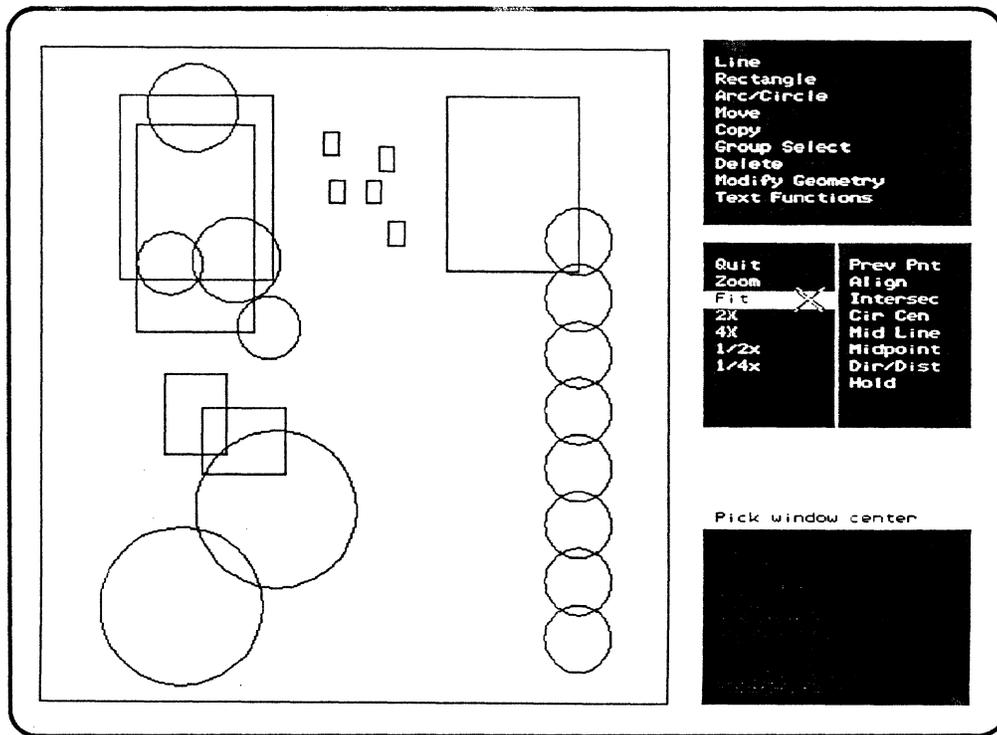


Figure4-20: After {Window}{Fit}{Quit}

By the way, it's a good idea to get in the habit of doing a {Window}{Fit}{Quit} every few minutes while you're working, as well as just before saving your graphic. It can be especially important if you've been doing a lot of Grouping and decide to {Delete} something. If you're ever nervous that you might have forgotten to {Unselect} something important from before, you can use the {Window}{Fit}{Quit} procedure while you still have the {Delete}{Restore} option visible.

Now About that Simple Graphic...

You could {Group Select}, {Select All}, {Quit}, {Quit}, {Delete}, but it's probably easier to {Quit},{Quit},{Quit} all the way back to the Main Menu and choose {Edit File},{EditIllustration} again. Once more you'll be prompted to select a file name, and this time move the cursor bar to size1.g (which your System Manager should have copied over to your graphics directory from its original spot in /usr/amgraf/graphics). Press [F1] on the LoadFcn Menu and the screen will clear. A tall rectangle will appear (see Figure 4-21) with the same general proportions as a sheet of typing paper (that's because it's a standard framing size of 6.5"x9", which fits nicely on 8.5"x11"). This will be our work area. (If you hadn't specified a filename to call up, but had pressed [F1] alone, you'd get the E.I.M. all right, but all your previous junk would still be in the picture, and you would have to erase it all before beginning.)

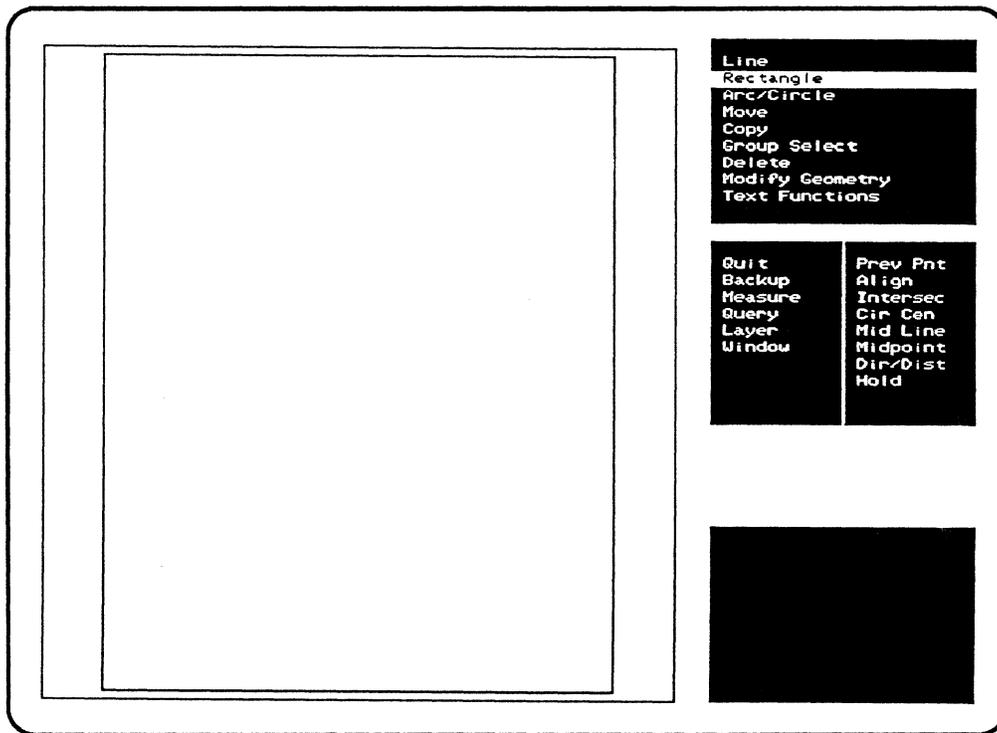


Figure 4-21: Starting Out with "size1.g"

First choose {Rectangle} and pick a spot near the middle of the Window Area. Type 3000 [rightarrow] 3000 [downarrow] [Enter] to make your square. {Window}, {Zoom} up on the square, then {Quit} out of {Window}ing and {Quit} out of {Rectangle} mode. Choose {Line}, pick one corner of the square, then pick the opposite corner. {Quit} out of {Line} mode. Your results should look like Figure 4-22.

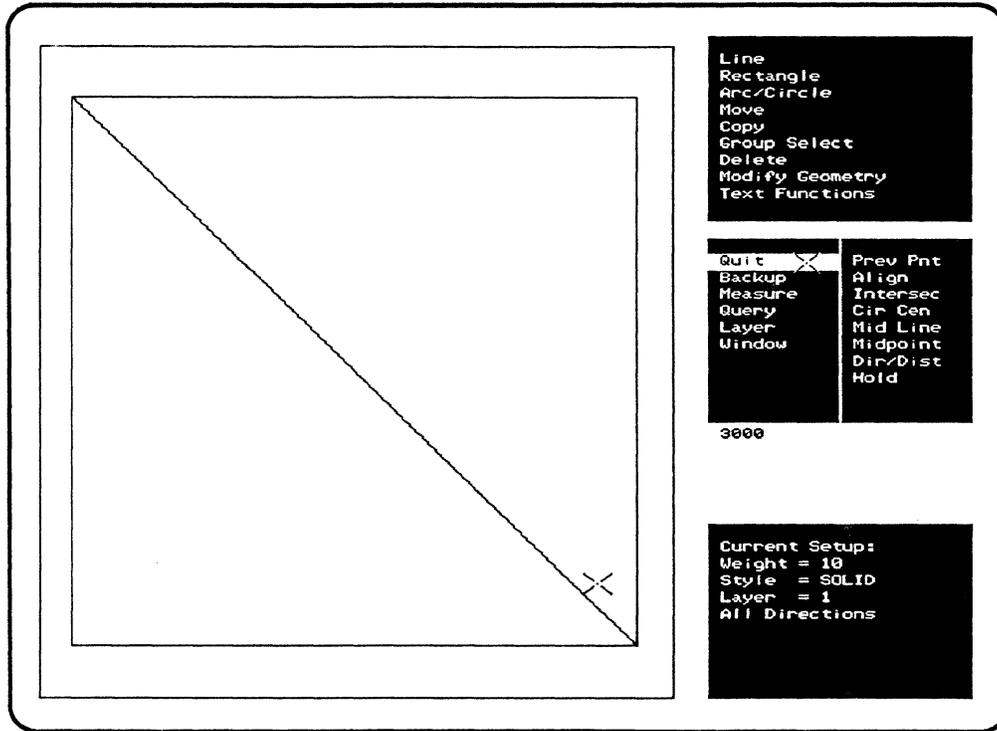


Figure 4-22: Making the Square

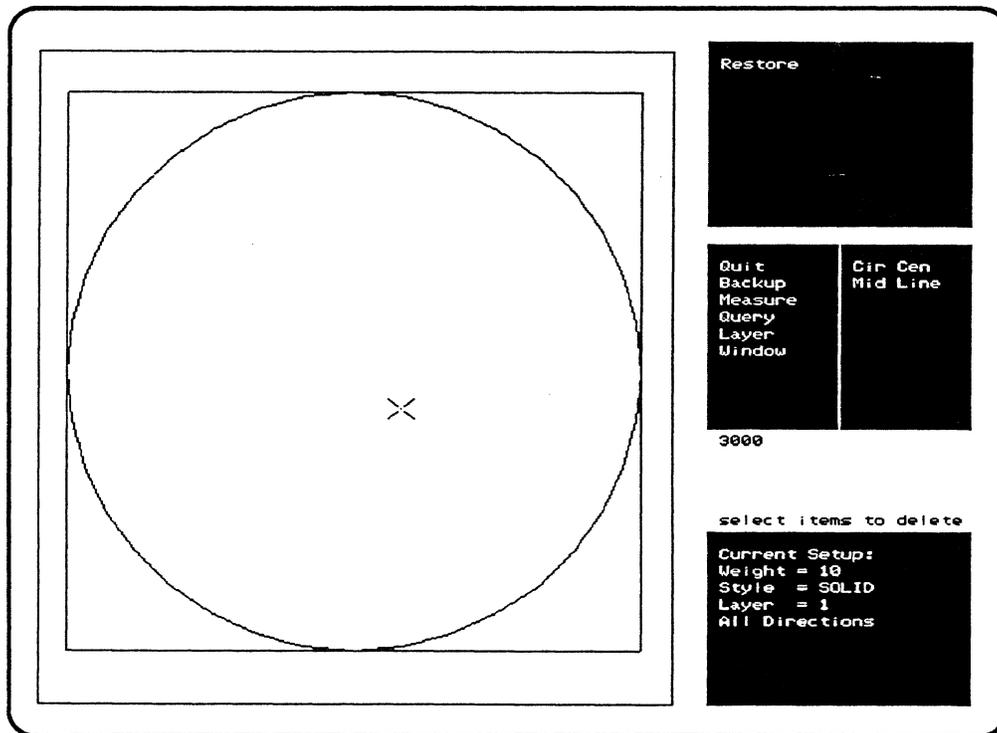


Figure 4-23: Making the Circle

Choose {Arc/Circle} and when you're prompted to "Pick circle center", choose the {Mid Line} function (in the orange area). Pick the line you just drew between the opposite corners. When prompted for the tangent point, choose {Mid Line} again, and pick one of the sides of the square. The circle you want will appear on screen. Now {Quit} out of {Arc/Circle} mode, choose {Delete} and pick the diagonal line (which is called a "construction line" -- one meant to be removed after it has served its purpose). Now your picture should look like Figure 4-23.

{Quit} out of {Delete} mode and choose {Line}. Now you can draw your star, beginning at any edge of the circle you like (we used the {Midline} option and picked the top line of the square).

When you're done, {Quit} out of {Line} mode and do a {Window},{Fit},{Quit}. Choose {Group Select},{Select Pick}. Pick all six parts of the "size1.g" frame, {Quit},{Quit} back to the E.I.M., and {Delete} the frame with one pick. {Quit} out of {Delete} mode and do another {Window},{Fit},{Quit}. You should now have a picture that looks like both Figure 4-4 and Figure 4-24.

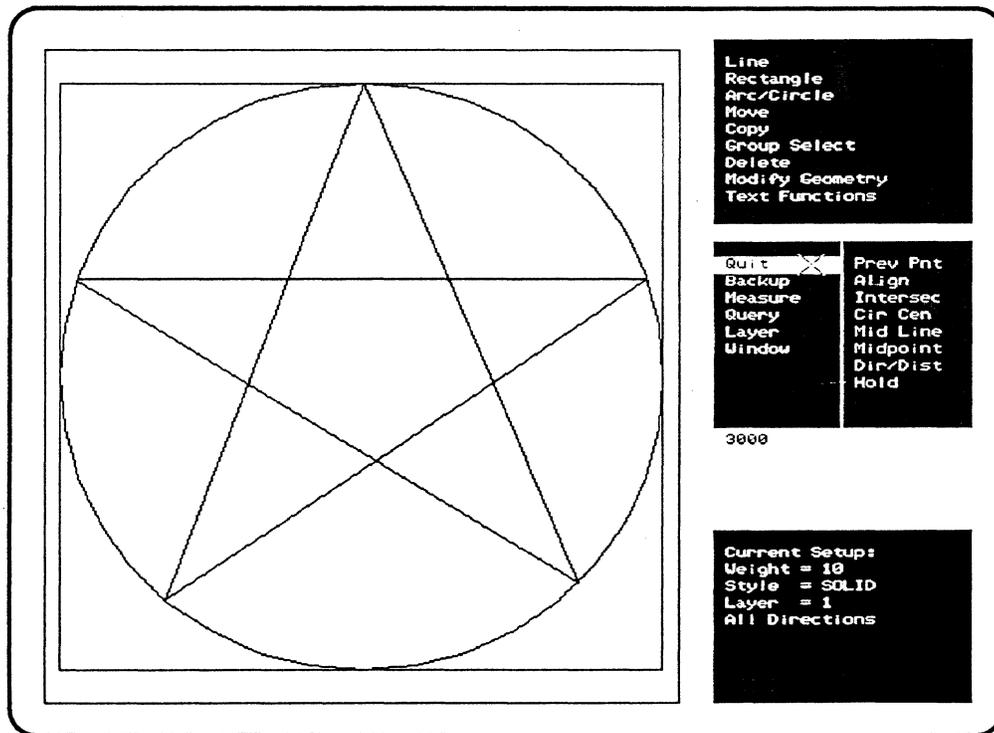


Figure 4-24: Final Results

Saving Your Graphic

This part is easy. Just keep choosing {Quit},{Quit}{Quit}, etc., as many times as necessary to get you back to the Main Menu. Do a {Window}{Fit}{Quit}. Then choose the {Save Files} option. This will take you to the Save Menu, where you'll have these options: {Save Under Old Name}, {Save Selected Group}, and {Save Under New Name}. When you choose the first one, your graphic will be automatically saved under whatever file name it had when you first started your {Edit Illustration} session. So if you combined several graphic files (see the end of next chapter) together, this Save would be under the old name of the very first file that the others were merged into.

{Save Selected Group} lets you save a part of your drawing as a separate graphics file. Just make sure you have every single bit you want {Select}ed before using this option. Obviously, {Save Under New Name} lets you assign a new name to your entire graphic. When you choose either of these options, you'll be shifted over to the monochrome monitor, where you'll be asked for a name to save the graphic under, using the same format as was used for the Copy and Move procedures described in Chapter 3.

So type one in (let's use {Save Under New Name} and mystar.g as the filename), and press [Enter]. In anywhere from a couple of seconds to a minute or so, your file will be saved and the Main Menu will reappear.

You may have noticed that all the filenames we've been using have only lowercase letters and end in ".g" (like "mystar.g"). Xenix prefers filenames to be all lowercase letters, so if you use capital (uppercase) letters you are likely to confuse the computer. The ".g" is the standard "file extension" used by MECCA III for graphics files. You could use a different extension, but try to avoid using one that's already in use by other parts of the MECCA III software.

Printing Your Graphic

This is almost as easy. Get back to the Main Menu and choose the {Output Files} option. You'll be presented with a choice of output devices, so simply choose the one you have (making sure it's connected properly as well as running), such as {AppleLaserWriter}. In a minute or two, the file you have live at the time (in the Window Area) will be printed out and the Main Menu will reappear.

Security Procedures: Homage to Murphy

If anything can go wrong, it will. Murphy's Law warns us that mistakes happen, design opinions change, and buildings lose power unexpectedly. Because of this, *we highly recommend that you pause every 5 or 10 minutes*, {Quit} back to the Main Menu, {Save Files} (perhaps under a name like "temp.g"), possibly print out a proof, and then return to your work. If you suddenly realize that you've {Delete}d something you shouldn't have several steps back, you can always {Quit} back to the Main Menu and call up the most recently saved version of your graphic.

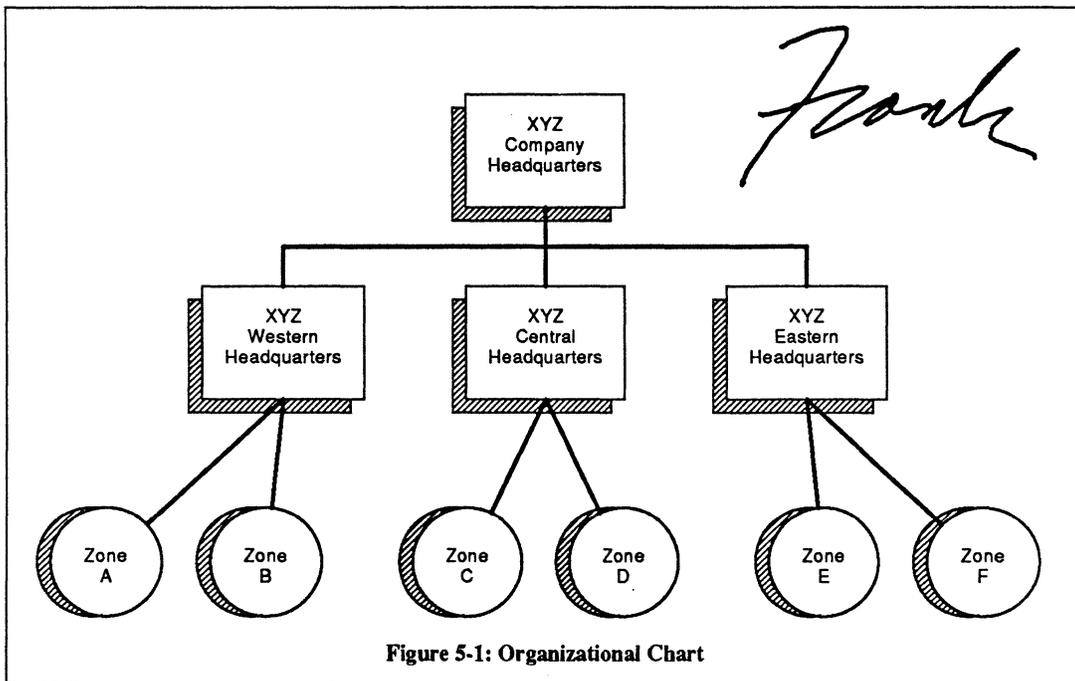
Start this habit right now with the exercises in the next chapter, and we promise you won't regret it. Stop and save after every stage of your drawing, and that way you won't have to go back to the beginning and start over when you make your (inevitable) mistakes.

If, later in your work with MECCA III, you find that you are dealing with material that is likely to change often, or for which you'll need several versions, you can save your work under several different filenames. You can then tailor each one individually, without having to do the early work over.

Chapter 5: Creating More Complex Graphics

What We're Going to Draw

If you'll look at Figure 5-1, you'll see an organizational chart of the sort common to many institutions. The following discussion will take you step-by-step through the creation process. We start up back at the Main Menu with {Edit} and {Edit Illustration}. When the LoadFcn Menu appears, move the cursor bar to size3.g (if you don't have it in your graphics directory, ask your System Manager to copy it over from /usr/amgraf/graphics). It will be the frame around our picture. Press [F1], and when the graphic is finished being loaded (pretty fast for this one), the E.I.M. will appear.



Making the First Shadowed Box

Choose {Rectangle}, then select a {LineWeight} of {10} (=1pt). Now pick a spot to start, about two inches in from the middle of the left side of the frame. Instead of moving the cursor (and thus the opposite corner of the rectangle) freehand, put the stylus down and type in the desired width in decipoints (tenths of a point), 700, and press the [rightarrow] key. Then enter the height in decipoints, 500, and press the [down arrow]. This will produce firstly a white line, and then a white rectangle on the screen (see Figure 5-2), which will be approximately equal to 1" x 3/4" when printed (since 723pts=1"). To accept this as the correct rectangle, press [Enter]. Then choose {Window}{Zoom} around the rectangle, not too tightly, and {Quit} out of {Window} mode. This will serve to put the rectangle in the center of the screen.

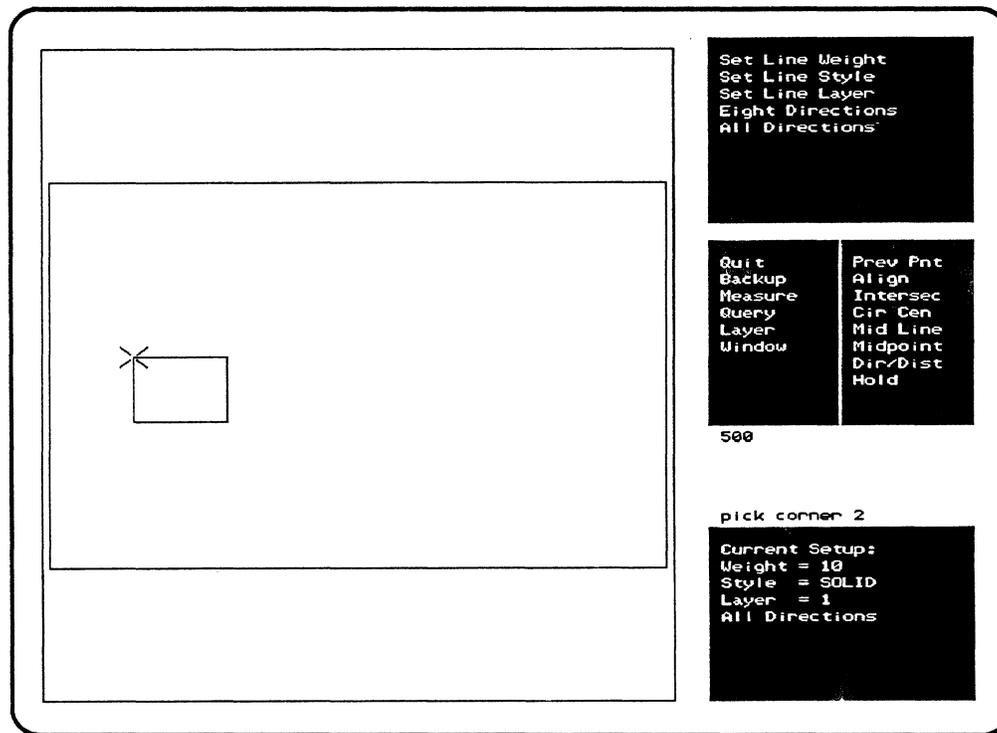


Figure 5-2: Making a Measured Rectangle

We're going to put a shadow around the left and bottom sides of the rectangle, but it will have to be outlined first. The way to get the effect we want will be to use the {Copy} option. First choose {Copy},{CopyAnywhere} and when prompted to "pick item to copy", move the cursor to touch the rectangle. Press the stylus down (for this exercise, anywhere) on the rectangle, and a set of crosshairs will appear. The next prompt will say "indicate copy position", but instead of using the cursor, type the number 60 and press the [left arrow] key. Then immediately type 60 again and press the [down arrow] key and [Enter]. A duplicate rectangle will now overlap the original one, 6 points down and to the left. See Figure 5-3.

You'll need to get rid of the parts of the new one that are inside the old. So {Quit},{Quit} out of the {Copy}ing mode. Choose {Line},{TrimLine}, then use the cursor to pick the left side of the original rectangle when prompted to "indicate trim position". Then pick the right third of the top line of the copied rectangle when asked "indicate item to trim". The picked line will vanish to the edge of the original rectangle. Figure 5-4 shows this stage.

(When {Trim}ming a line, make sure that you pick it near the end furthest from the trim line. If you pick it between its midpoint and the trim line, the part of the line that's on the *opposite* side of the trim line will be what disappears).

Now choose {TrimLine} again, and pick the bottom of the first rectangle as the trim point and the right side of the second rectangle (near its top) as the item to trim, and most of it will vanish as well. Now {Quit},{Quit} back out of {Line} mode. You should have results that look like Figure 5-5.

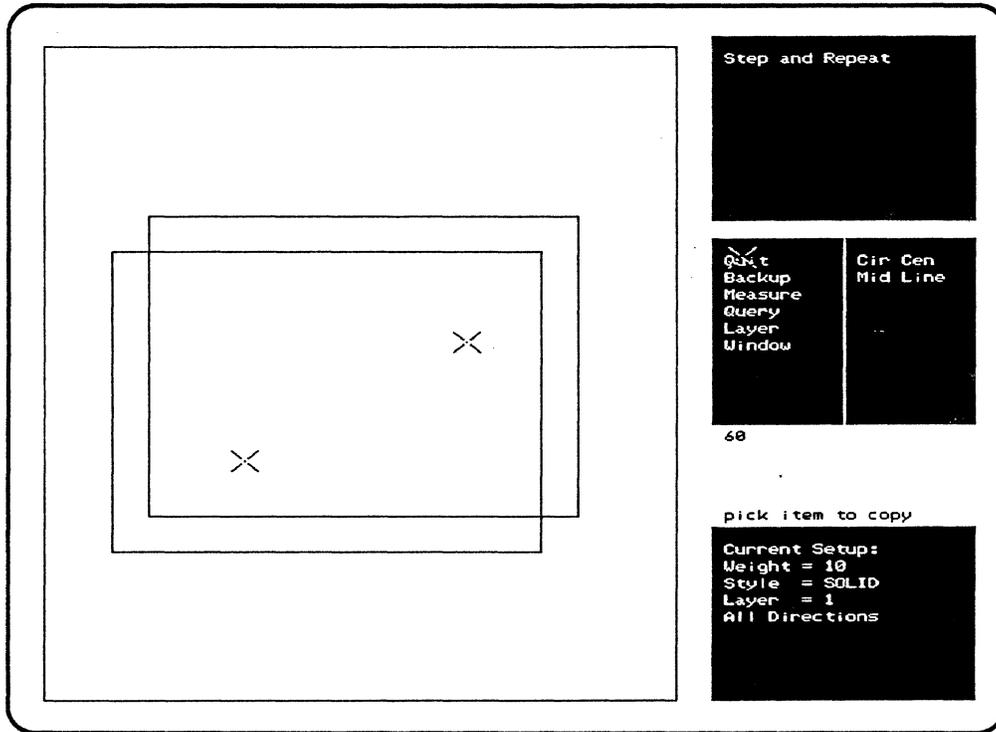


Figure 5-3: Using {Copy} to Start the Shadow Area

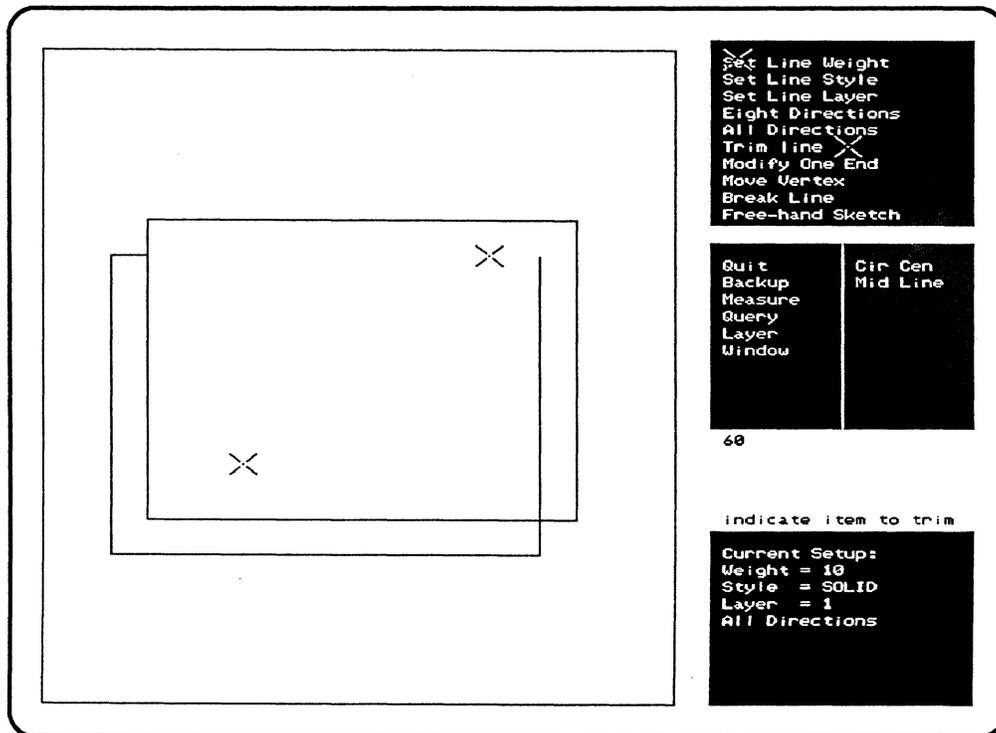


Figure 5-4: Using {Trim Line} to Edit Copied Rectangle

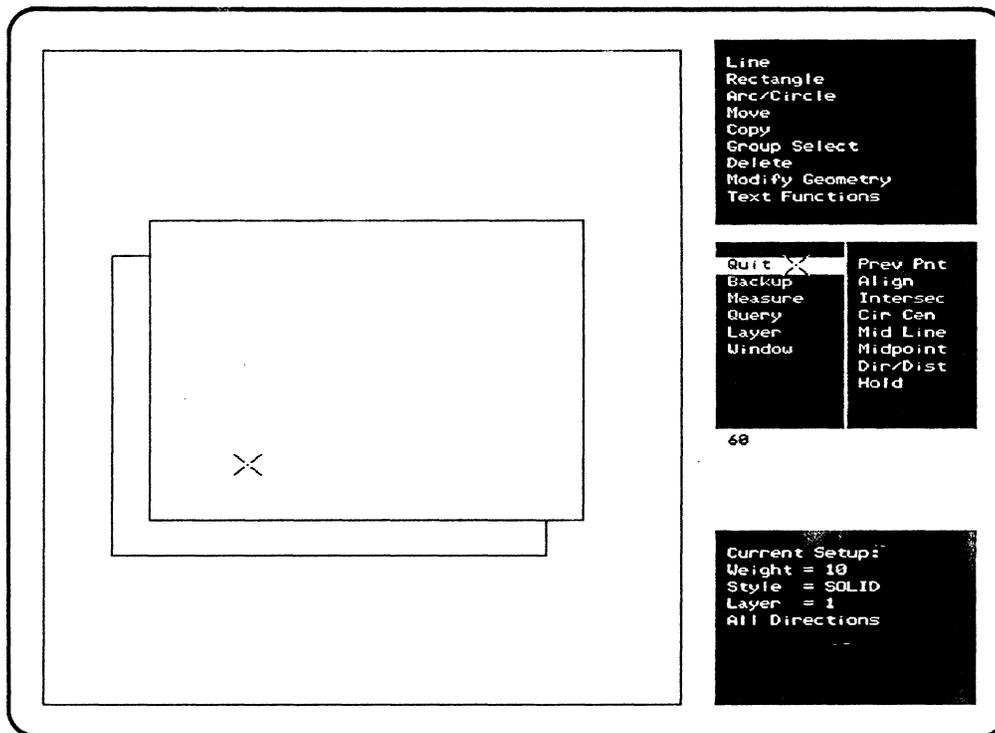


Figure 5-5: The Finished Shadow Area

Having achieved an outline for the shadow we want, it's now time to do shading (or "sectioning", as it's known to engineers): First choose {Modify Geometry}, {Combine/Separate}, and pick the original rectangle as the object to separate into its components (four lines). Then {Group Select}, {Select Pick} and use the cursor to pick the left and bottom sides of the original rectangle and the remaining part of the copy.

{Quit},{Quit} back to where you can choose {Modify Geometry} then {Shading (Sectioning)}. That takes you to a menu where you can choose {Set Line Weight} and type 15 [Enter] (=1.5pts). Next {Set Line Spacing} to 13 [Enter] (at least two decipoints of difference so there will be an overlap). Decide on an angle, such as 45 degrees, then choose {Set Section Angle} and type 45 [Enter]. Finally {Do Sectioning/Shading} and watch the shadow area fill in with parallel lines. The results will be solid black when printed, even though on screen we can see space between lines. See Figure 5-6.

Now {Quit}{Quit} back to the E.I.M., then {Group Select},{Unselect All},{Quit},{Quit}. *This will make sure that you're not leaving parts of your picture Selected* (and thus vulnerable to any later commands that affect other Selected parts). Now you can do a {Window},{Fit},{Quit} and you'll see that the first box, complete with shadow, is done. See Figure 5-7.

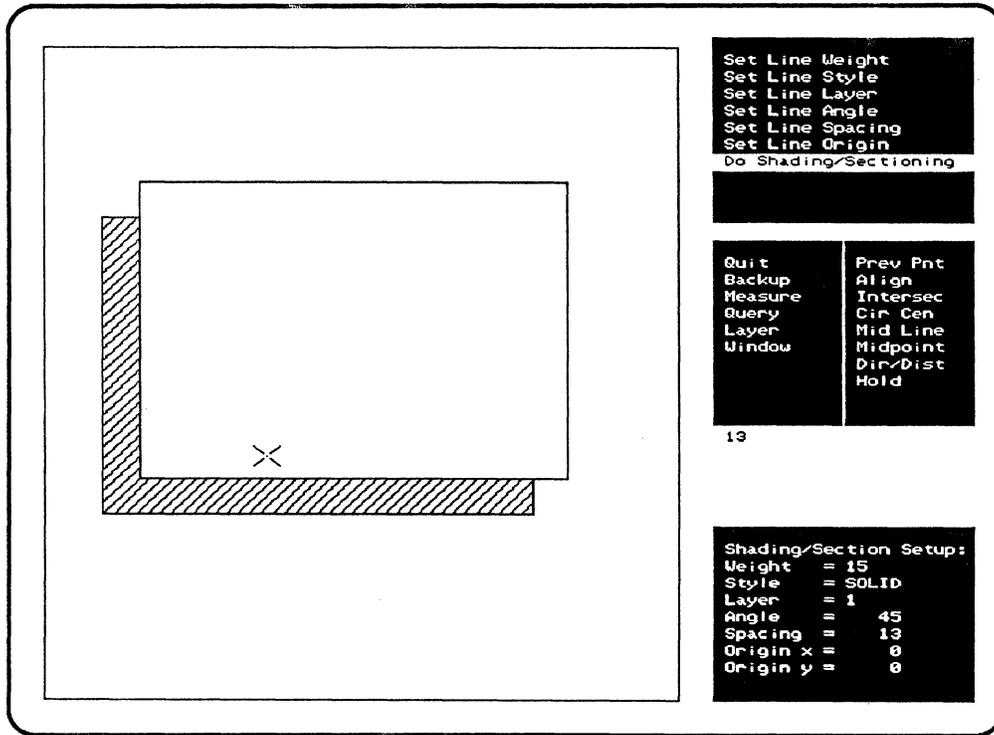


Figure 5-6: Using {Shading/Sectioning} to Fill the Shadow Area

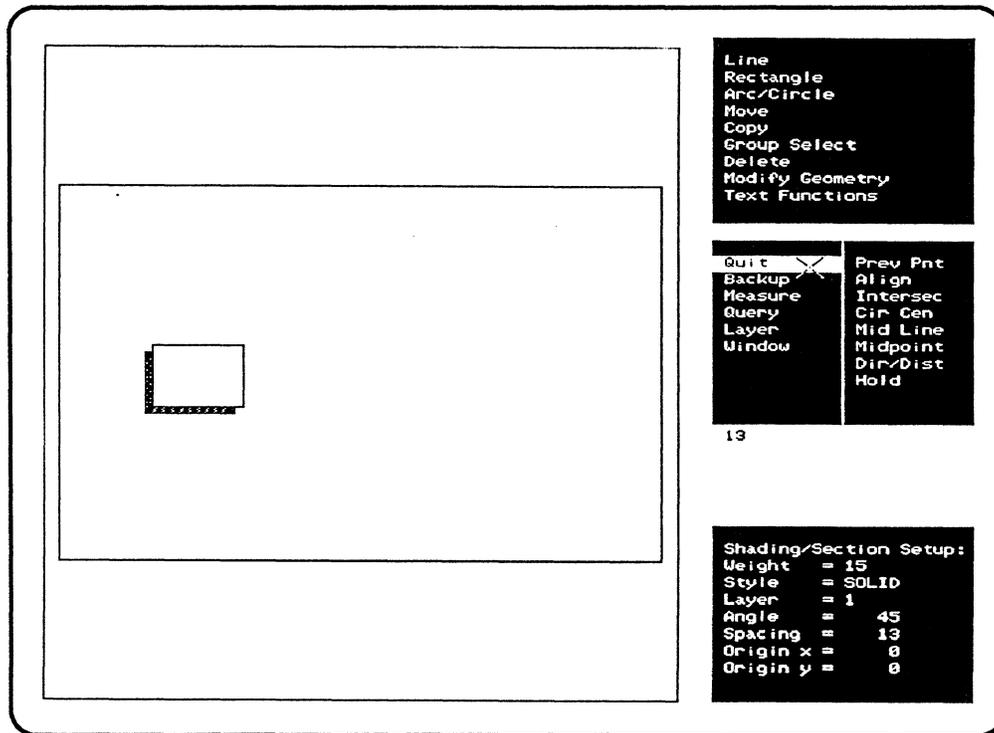


Figure 5-7: The First Shadowed Box

Making the First Shadowed Circle

We next need to do something similar with a circle. Starting from the E.I.M., choose {Arc/Circle} to get to its submenu. Here you can {Set Line Weight}, {10}. You'll be prompted for the location of the circle's center, so pick one (more or less under the left side of the box, but down at least a visual inch on screen) with the stylus. Instead of determining the radius freehand, set the stylus down, and type 240 and any [arrow] key (see Figure 5-8). This will draw a white circle, with a radius of 24pts. Press [Enter] to accept the circle as is. (This is actually using the {Center/Radius} option on the Arc/Circle menu, which happens to be the default.) {Quit} back to the E.I.M.

Now you can use {Window},{Zoom} around the circle, and {Quit} to put the circle nice and large in the center of the screen.

Choose {Copy}, {Copy X Direction}, pick the circle, and type 60[left arrow] [Enter]. This will copy the circle to the left 6 points, producing two identical overlapping circles (see Figure 5-9). {Quit} out of the {Copy} mode. Choose the {Arc/Circle},{Modify Arc} options. "Arc modification" means that you can decide on new starting and ending points for a circle, and thus erase the parts not included. This process always goes counterclockwise, so first, pick the recently copied circle to indicate that it's the one you want to modify; second, pick the new position for the circle to start at the top overlap point of the two circles; and thirdly, pick the new end ending spot at the bottom overlap point. The rest of circle (the right half of the left circle) will vanish (Figure 5-10). The {Delete} option wouldn't work here, because it would take away the entire circle. {Quit} back to the E.I.M.

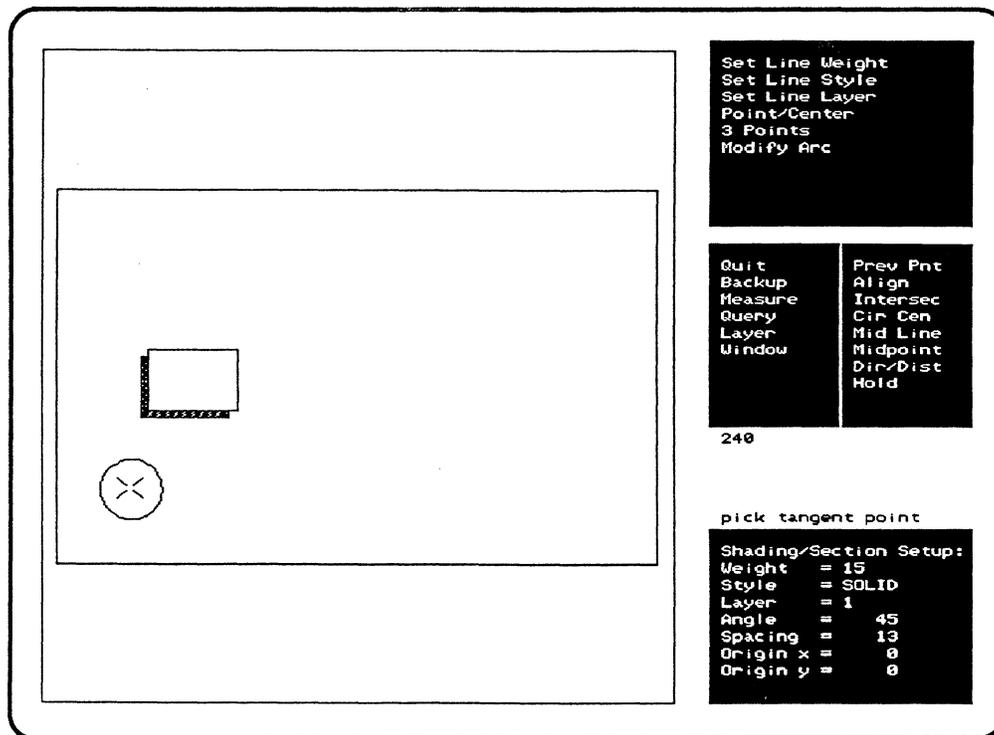


Figure 5-8: Drawing a 24-point Radius Circle

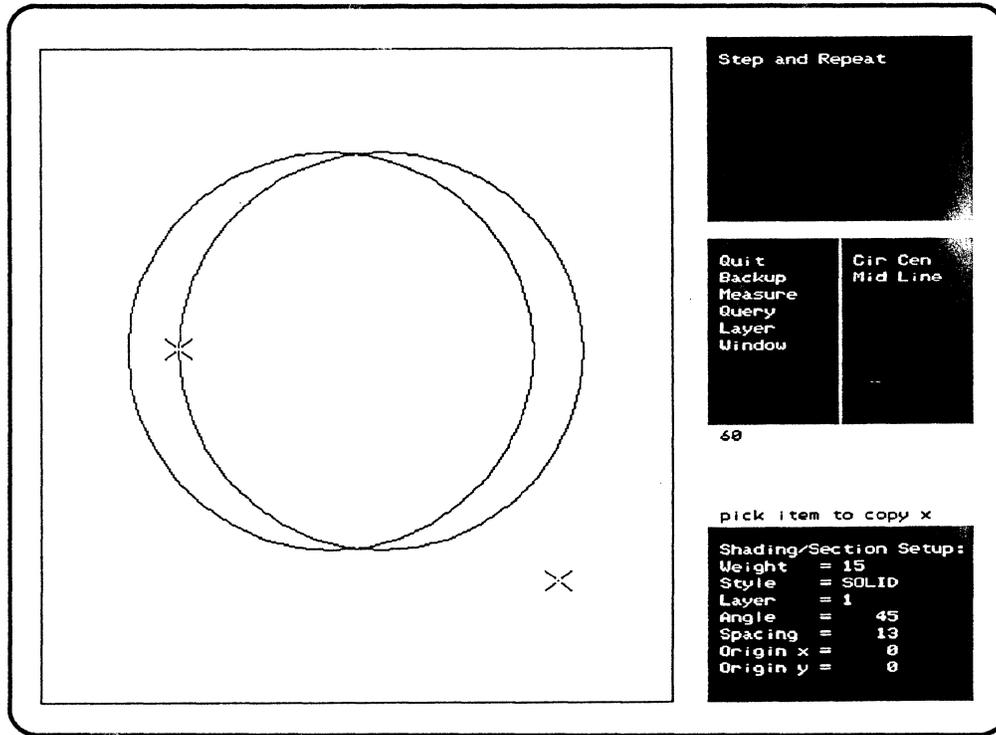


Figure 5-9: {Copy}ing the Circle 6 points to the Left

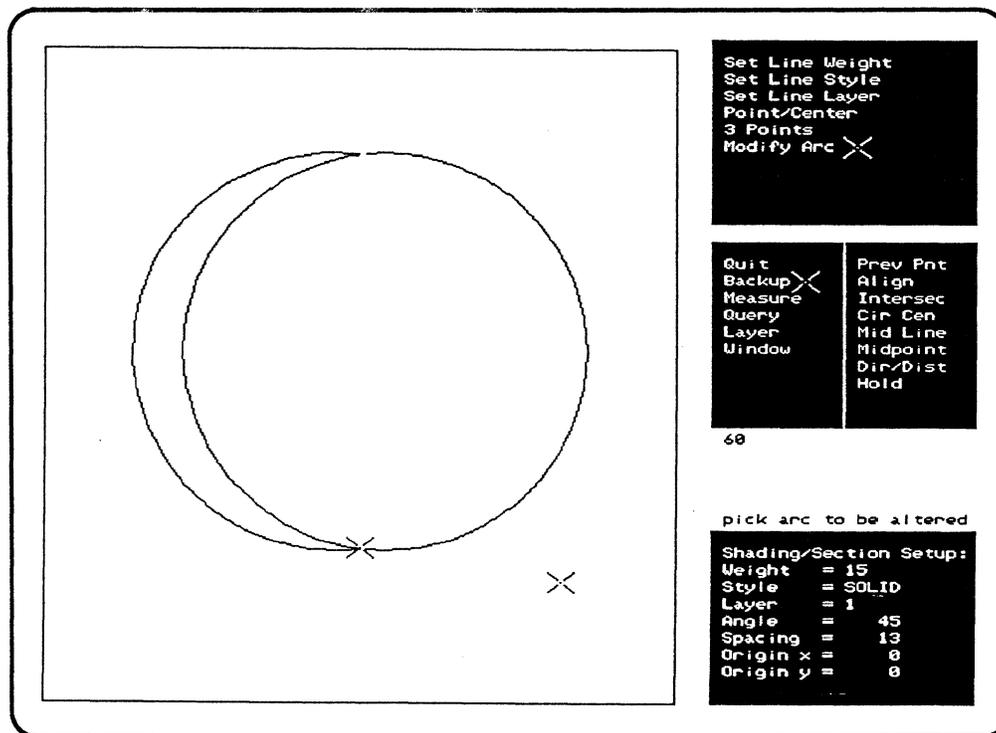


Figure 5-10: Erasing the Overlap with (Modify Arc)

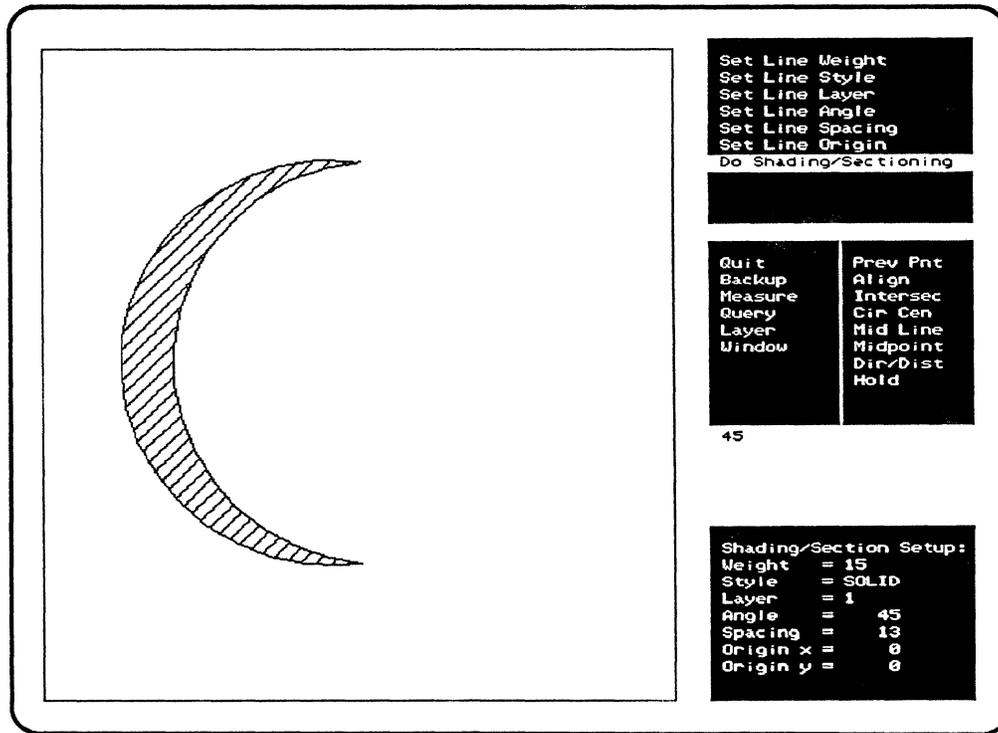


Figure 5-11: (Shading/Sectioning) the Circle's Shadow

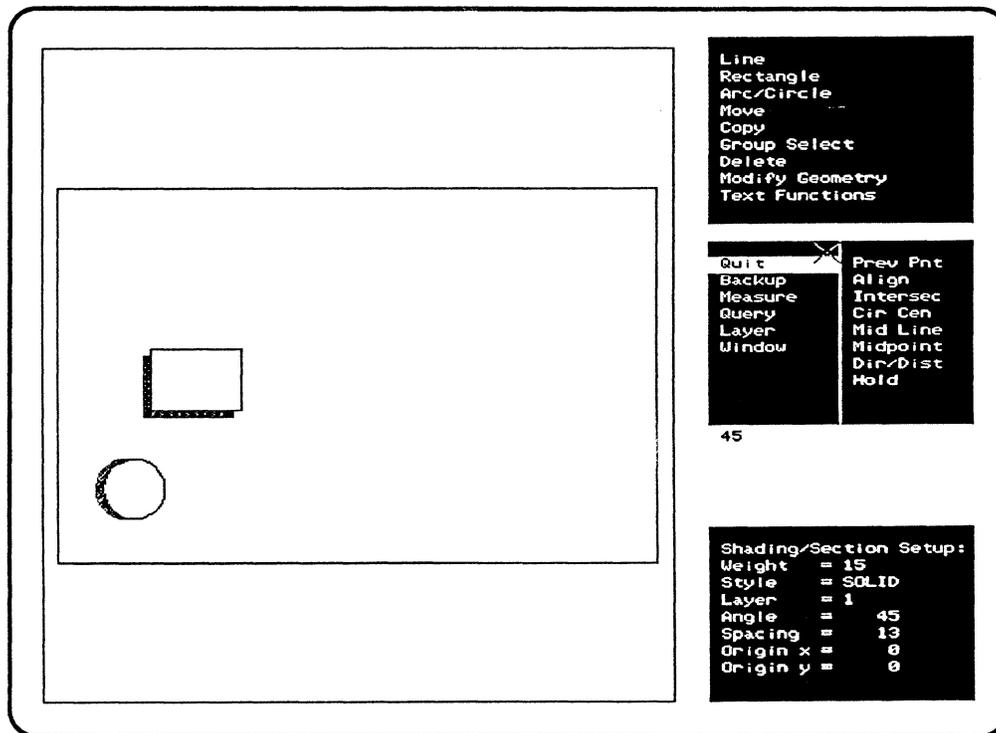


Figure 5-12: The First Shadowed Circle

Now it's time to set up boundaries for the {Shading (Sectioning)} process. This is done in a very similar way to what we just did with the box. First choose {Arc/Circle}, {Modify Arc}, and this time choose the original circle as the one to modify. Pick the top overlap point as the new start for the arc, and the bottom overlap as the new end. This will give you a crescent shape. Now {GroupSelect}, then {Select Pick} the two parts of this crescent.

Then follow this sequence: {Quit}{Quit} out of the {Group Select} mode. Choose {Modify Geometry}, {Shading (Sectioning)}. Set the same variables you did before: {Set Line Weight} 15 [Enter], {Set Line Spacing} 13 [Enter], and {Set Line Angle} 45 [Enter]. Finally, you can {Do Shading/Sectioning} (see Figure 5-11). {Group Select}, {Unselect All}, {Quit}.

When that's done, it's time to put the circle back. {Arc/Circle}, {Modify Arc}, pick the right side of the crescent as the arc to be changed, then press the stylus down *twice* in the same spot (say, the top overlap point) to redraw the complete circle. Now do a {Window},{Fit},{Quit} to see how it looks (it should resemble Figure 5-12), and {Quit} back to the Edit Illustration Menu.

Inserting Text

One way to make sure that a series of captions that are supposed to match do so, is to make one caption, copy it as many times as needed, and then use the {Edit Text} option to change copies. This is an example of a general principle: if you are going to be doing a lot of replication, do as much as possible in the original item before making copies. We'll talk about editing text inside graphics later, first we have to make some original text to be multiplied.

So let's try it. {Window},{Zoom} in on the box, then {Quit}. Choose the {Text Functions} option, to get to the Text Functions Menu. Choose {Set Text Attributes}, {SetFont}, which will give you a menu listing available type fonts. Choose {Times Roman} with the stylus, and you'll be back at the Set Text Attributes Menu. Next, {SetStyle} to {Normal}. Next {Set Point Size} to {10points}. The composition mode we want (centered) is chosen through {Set Composition Mode}, {Center}. Now {Quit} back to the Text Functions Menu.

Finally we can {Key & Compose Words}. Move the cursor to where you want the text to be (center point since it's to be centered), and press the stylus down to leave crosshairs. Then type your text out (it will appear in the User Input Area): XYZ [Enter]. You'll see the crosshairs move down on the screen, so you can type Company [Enter]. On the next line, as shown in Figure 5-13, type Headquarters [Enter]. Since we only need three lines of text for this stage of the exercise, {Quit} out of the {Key & Compose Words} and {Text Functions} modes, and you'll be back at the E.I.M.

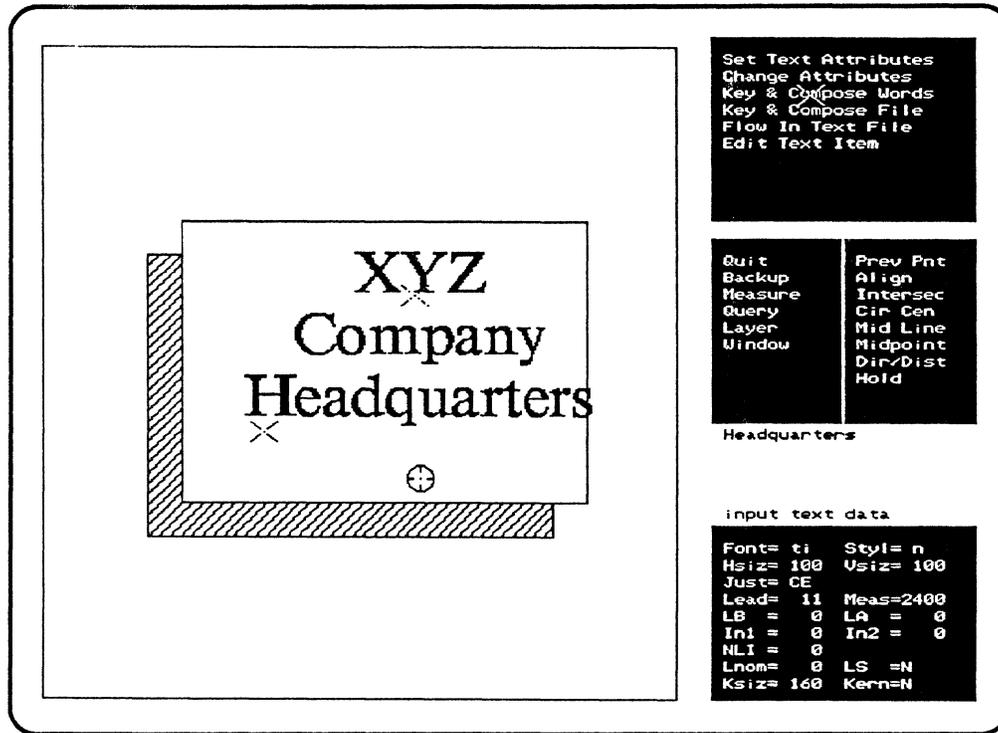


Figure 5-13: Inserting Text into the Box

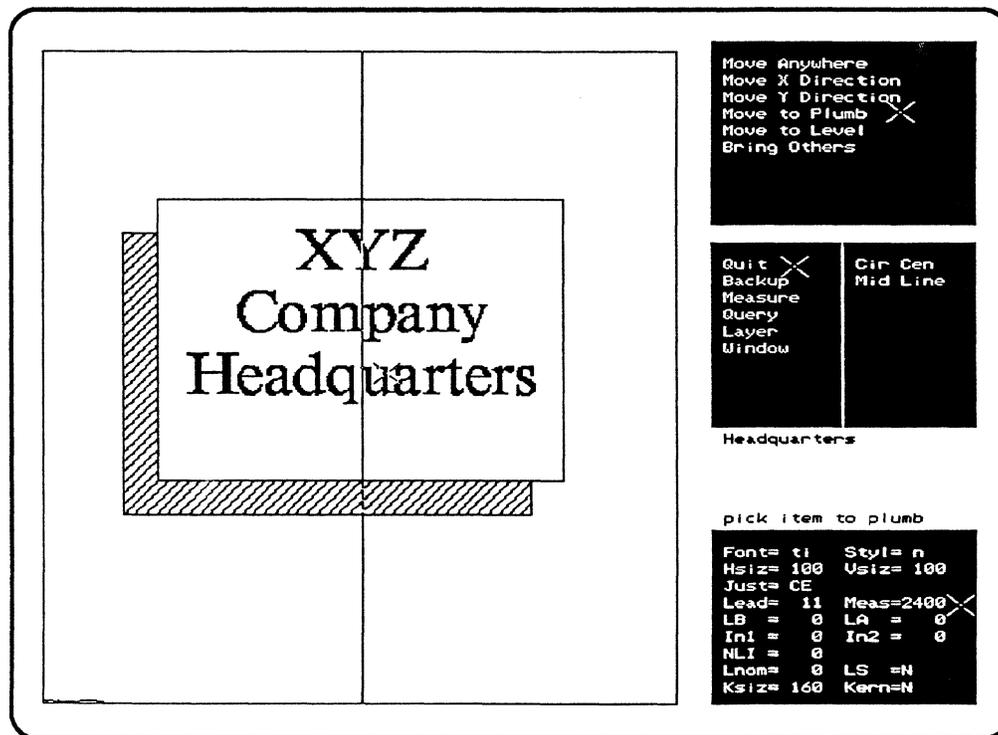


Figure 5-14: Text (Move to Plumb) with (Mid Line)

Moving Text to a Plumb Line

Now most people aren't very good at eyeballing text position at first, so MECCA III gives us a way to precisely position the text (or anything else) both horizontally and vertically. Use the {Move} option, then choose {Move to Plumb}. You'll notice some functions appear in the orange area on screen. These are to let you say exactly where you want your plumb line drawn. Choose the {Mid Line} function, which will drop the plumb line from the exact center of any line you pick. So pick the top line of the box, and you'll see a white vertical line suddenly appear. Now you can pick the center of each of the text strings ("XYZ", "Company", and "Headquarters"), and they'll be moved right or left as needed. When all three lines have been {Moved to Plumb} (see Figure 5-14).

{Quit} back to the Move Menu. Should you decide it's necessary, you can now use {Move Y Direction} to adjust text vertically. After you move the first item in each box, you can use the {Bring Others} option to move the second and third items, simply by picking them. When you're satisfied with the way things look, {Window},{Fit},{Quit},{Quit}.

Text for the circle will be done pretty much the same way. {Window}{Zoom} on the circle, then {Quit}. Choose {Text Functions},{Key & Compose Words}, pick a spot inside the circle a bit above the center, then type Zone [Enter] A [Enter], as in Figure 5-15. {Quit} back to the E.I.M.

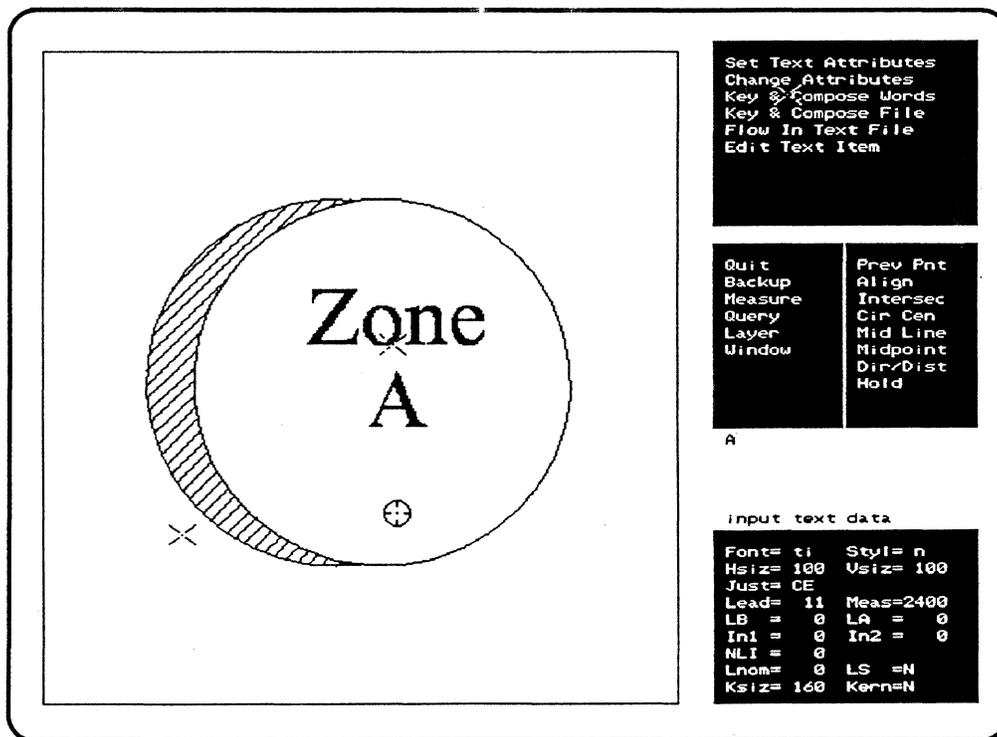


Figure 5-15: Inserting Text into the Circle

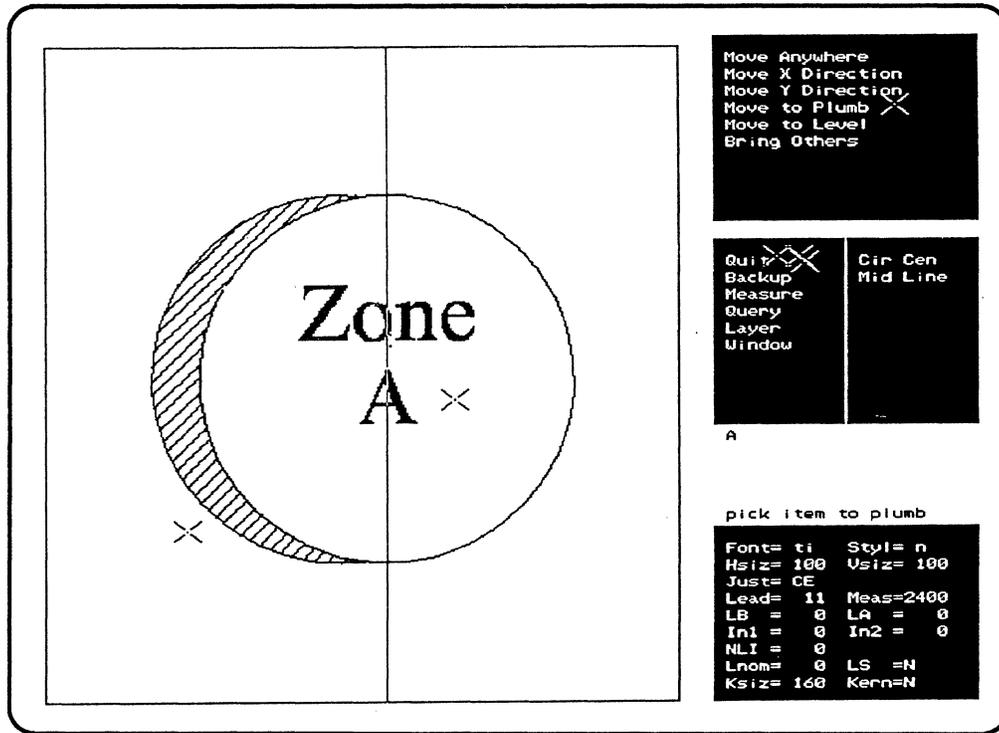


Figure 5-16: Text {Move to Plumb} with {Cir Cen}

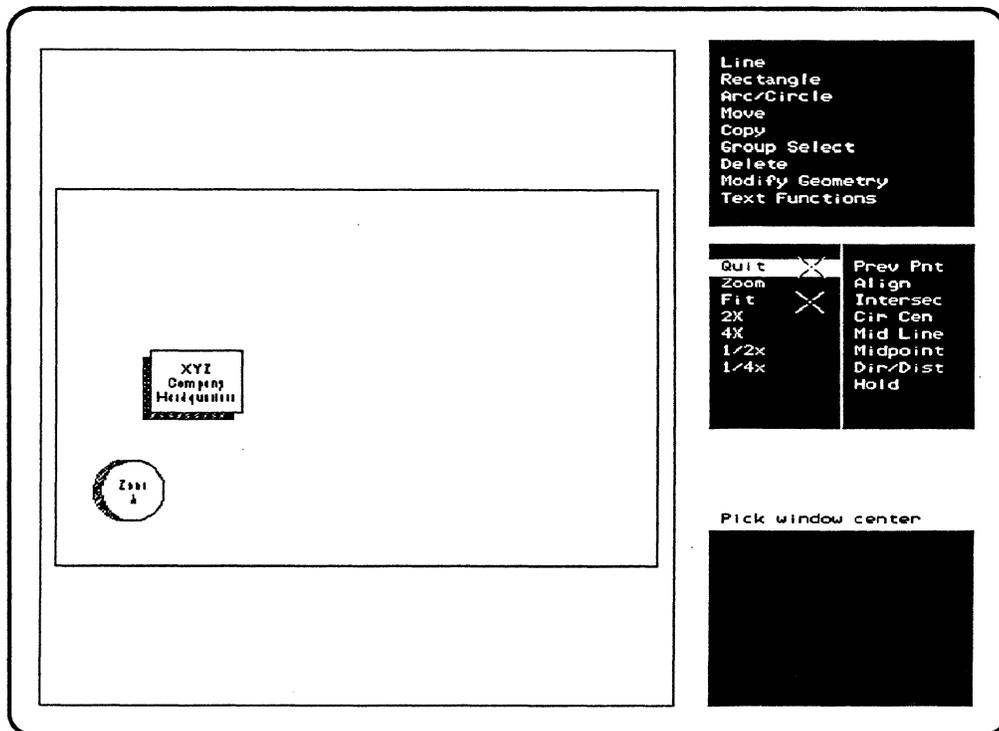


Figure 5-17: Box and Circle with Initial Text

Then {Move to Plumb}, using the {CirCen} function. This works very similarly to the {Mid Line} one, except that you can pick anywhere on the circumference of the circle (Figure 5-16). This runs the plumb line through the center of the picked circle, and you can then pick the type near the center of each text string (near the middle of "Zone" and on the "A"). When the type is where you want it, {Quit} back to the E.I.M. and {Window},{Fit},{Quit}. Your current results should look like Figure 5-17.

Copying and Rearranging the Graphic Elements

At this point, we have the basic components of the picture, including starter text. Now we need to copy and arrange them. We're going to make a pyramid with one box on top, three boxes below it, six circles below them. Because there are more circles than anything else, we'll use them to determine spacing factors.

Let's start this part of the exercise with {Group Select},{Select Inside}, and draw our grouping-box around the master circle. Wait for all the parts of the master circle to turn white, then {Quit} out of {Group Select} mode. Choose {Copy}{Copy X Direction}. Pick the master circle as the item to copy, then pick a new spot to the right side (by number and [arrow] key, or by hand). Remember that relative positions on the original and its copy will match, so you're safest to pick a spot near the left side of the master circle and a second spot well to the right of the master circle's right side. As soon as you pick the second spot, we'll have two shadowed circles with text (Figure 5-18).

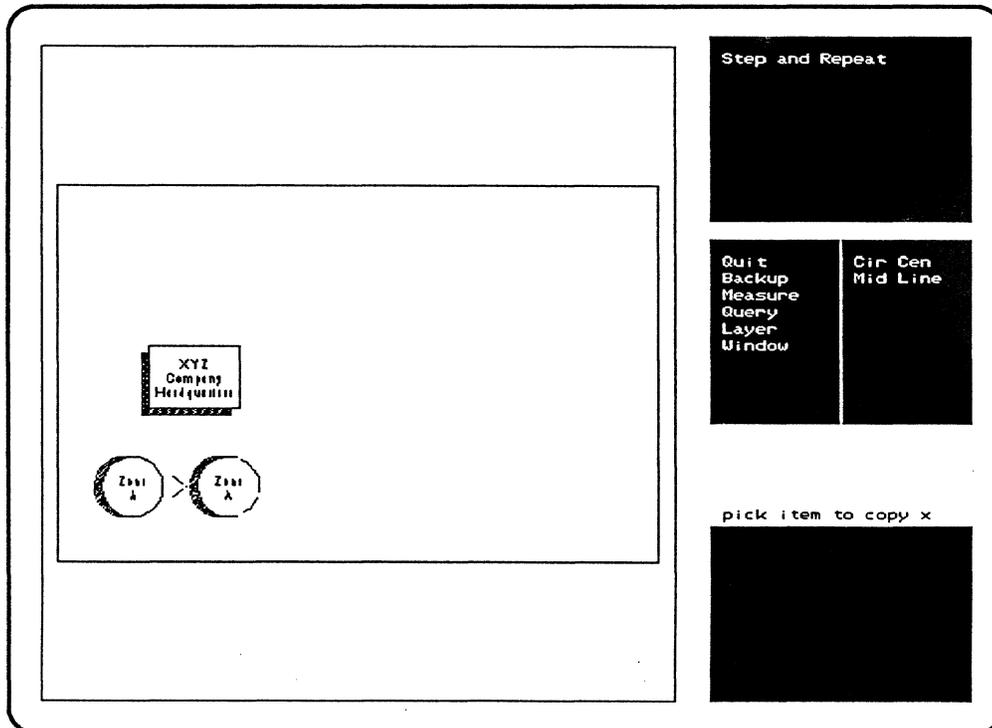


Figure 5-18: The First Two Circles

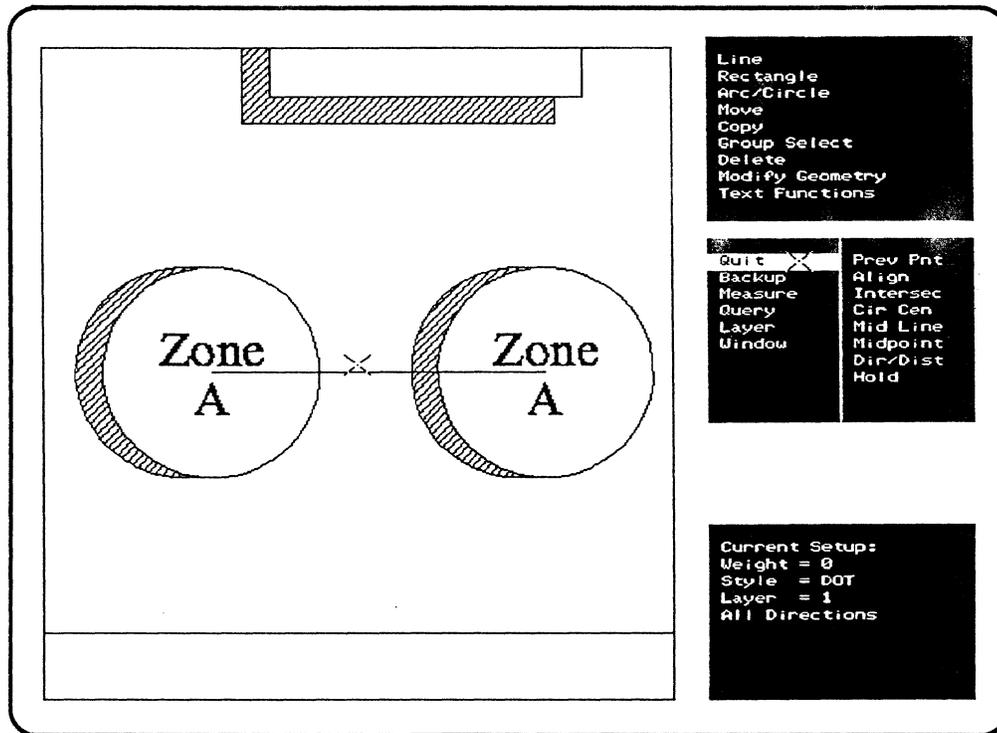


Figure 5-19: The Construction Line Between the Two Circles

We want the couplets about half an inch apart on screen, so if you did wind up with an accidental overlap, then {Move}, {Move X Direction}, pick the copy of the master circle, which is now white -- indicating that it's Selected as a Group, and pick a new spot a little further over. When everything is as it should be, {Quit}, {Quit} to the E.I.M.)

Choose {Group Select}, {Select Inside}, and wrap the grouping-box around the currently unselected (actually the original) master circle. Since groups are additive, both circles are now part of the same group. {Quit}.

Because we're going to want to do precise positioning of these circles later, we need to add a construction line (later to be deleted). Here's how: {Window}{Zoom} up on the two master circles, {Quit}. Choose {Line}, {Set Line Weight}, {0}, then {Set Line Style}, {Dotted}. In general, it's a good idea to use dotted (if you've got the 16" color monitor), nonprintable lines as construction lines, since they will stand out on screen and if you forget to delete them later, they won't embarrass you by printing out as part of your graphic.

When you're prompted to "pick vector start", choose {Cir Cen} *before* picking one of the complete circles, then (at the "pick vector end" prompt) choose {Cir Cen} again *before* picking the other complete circle (avoid picking the arc on the shadowed side). A dotted cyan (light blue) horizontal line will appear, linking the centers of the two master circles. {Quit}, {Group Select}, {Select Pick} that line, to add it to the group, and {Quit}. The total group Selected now consists of two master circles connected by a construction line, as shown in Figure 5-19. We'll call this a "couplet".

Do a {Window},{Fit},{Quit} to make sure you can see what you're going to do next. Choose {Copy},{Copy X Direction} again, and pick the couplet's original and destination positions, making sure that the left side of the copy will not overlap the right side of the original. Then, instead of {Quit}ing back to the Copy Menu, choose the {Step and Repeat} option once. This will repeat the last copy made, to produce a total of three equidistant sets of two circles each.

Now you can {Quit} back to the E.I.M. and {Group Select},{Select Inside} the currently unselected circles by putting them inside the grouping-box. {Quit} out of {Group Select} mode; then {Move},{Move to Plumb}, picking the {Mid Line} of the topborder ("size3.g") box as the plumb position and the {Mid Line} of the middle construction line as the thing to be moved. This will center all three couplets of circles (see Figure 5-20). Now, before anything awful happens, {Group Select},{Unselect All},{Quit}.

{Window}{Zoom} up on the left side of your graphic, so you can see the leftmost box and couplet. Then {Group Select},{Select Inside} the entire shadowed box. {Quit} out of {Group Select} mode. Next, {Move},{Move to Plumb},{Mid Line}, and pick the leftmost couplet's construction line. Then choose {Mid Line} and pick the box's top. This will center the box over the couplet, as shown in Figure 5-21. If necessary, use {Move},{Move Y Direction} to raise or lower the box to a proper height above the couplet. {Quit},{Quit}, out of {Move} mode.

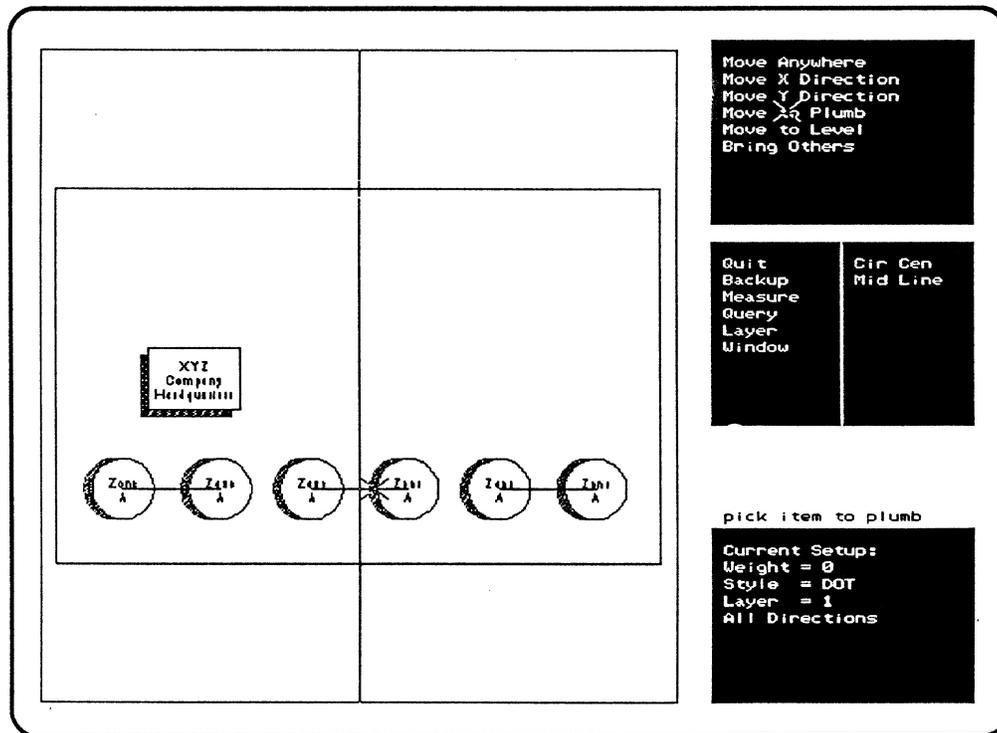


Figure 5-20: The Three Couplets Centered

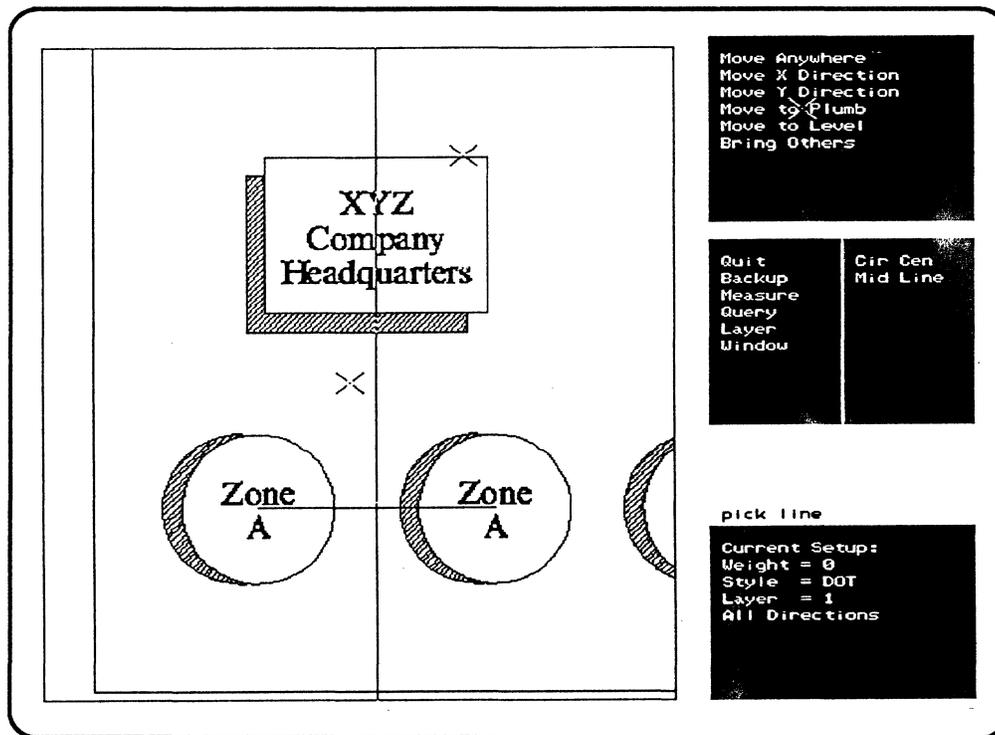


Figure 5-21: Centering the Box over the Left Couplet

Do a {Window},{Quit},{Fit}. Use {Copy},{Copy to Plumb},{Mid Line}, and pick the center couplet's construction line, as the plumb position. Follow this with {Mid Line}, and pick the top of the box. Since all the distances are going to be the same, you can use {Step and Repeat} to make the third box (Figure 5-22).

Here's how to make the top box: {Quit} back to the Copy Menu. {Copy},{Copy Anywhere}, the already Selected box to a point above the center box. {Quit} out of {Copy} mode, then {Move},{Move to Plumb} the new box: the {Mid Line} of the box below being the plumb position, and the {Mid Line} of the new box being what gets {Move}d. {Quit}{Quit} back to the E.I.M., then {Group Select},{Unselect All},{Quit}. See how closely your work resembles Figure 5-23.

You may now need to adjust the position of your drawing vertically within the frame. The easiest way is to {Group Select},{Select Pick} the four sides of the frame, then {Move},{Move Y Position} it up or down as needed. The reason this is easiest, is because the less you move or copy, the faster it works. (and the less chance for you to make a mistake).

This is where you get into graphic design judgements. You may decide that the couplets of circles and the boxes should be closer together or farther apart horizontally or vertically. Just make sure to {Group Select} all the items you want to move at once, and use the number and [arrow] technique to make matching {Move X Position}s and {Move Y Position}s. *Remember to {Group Select},{Unselect All} after each time!*

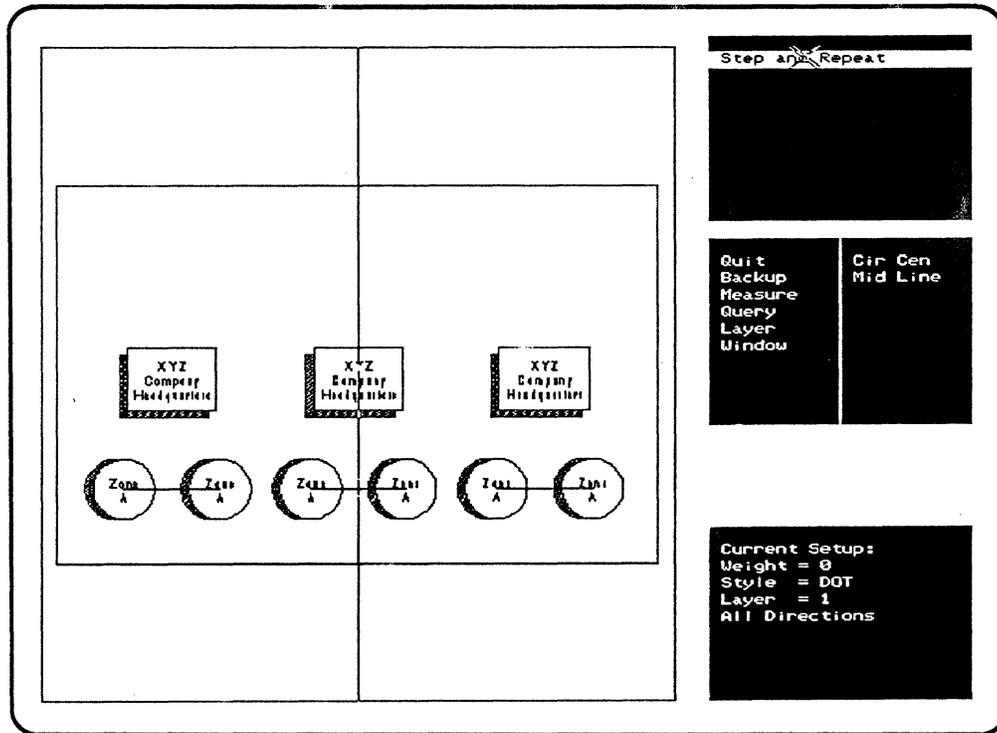


Figure 5-22: Reproducing the Box with {Copy to Plumb} & {Step & Repeat}

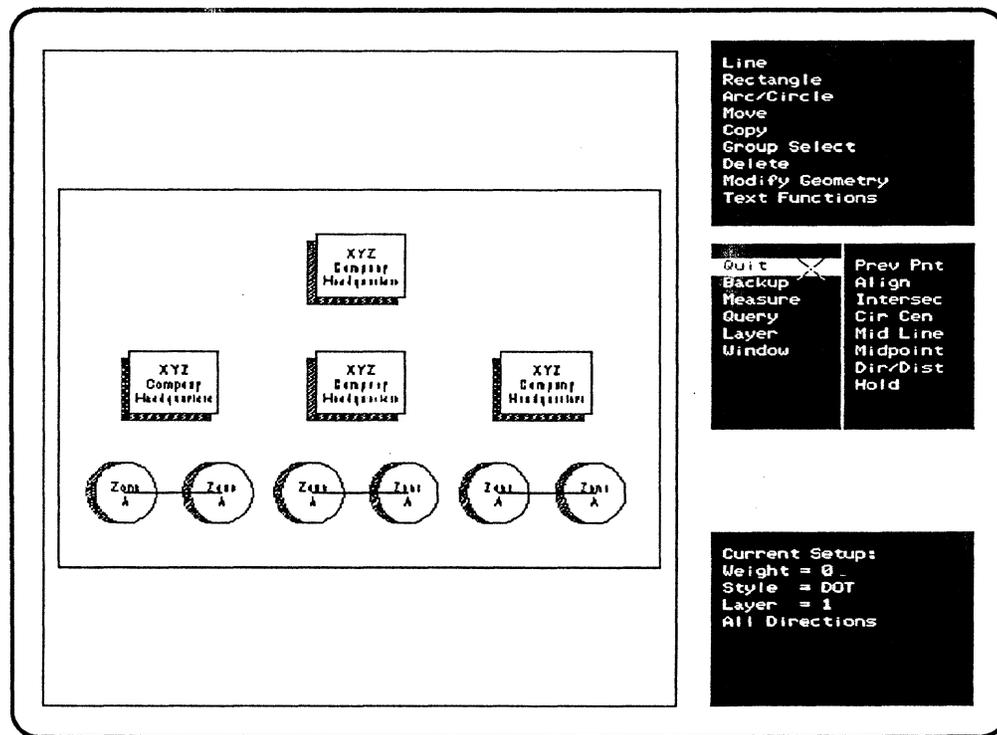


Figure 5-23: After the Top Box Has Been Added

Adding the Connecting Lines

Now {Window}{Zoom}, up on the left side and middle of your drawing (get all four circles). It's time to draw the connecting lines. Choose {Line}, {Set Line Weight} {10}, {Set Line Style}, {Solid}, to get back to regular lines (away from the construction type). Choose {Mid Line}, pick the top box's bottom line (make sure you *don't* pick one of the section lines by mistake). Choose {Mid Line} again, pick the top of the the box underneath the top box. Then choose {Mid Line}, pick the bottom of the left box, {Cir Cen}, pick the left master circle (not the shadow arc) below; {Mid Line}, pick the bottom of the same box, {Cir Cen}, and pick the other master circle below (again avoiding the shadow arc). Then connect the middle couplet to the middle box in the same way. See Figure 5-24 for what it should look like at this point.

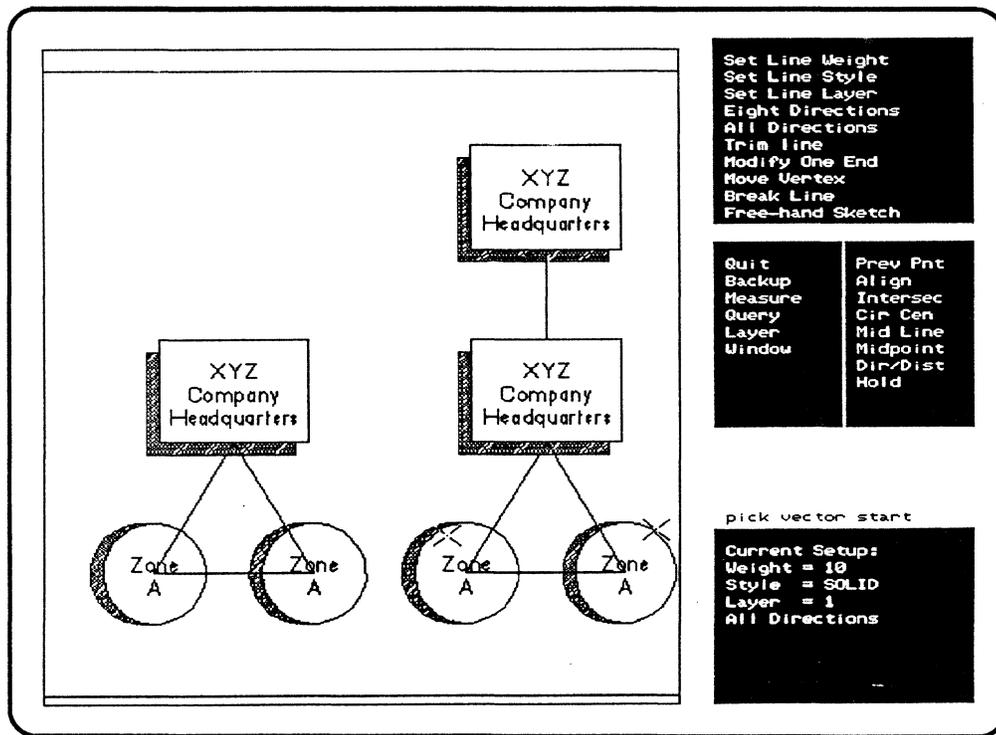


Figure 5-24: Drawing the Connecting Lines on the Left

{Window},{Zoom} up on the left couplet, {Quit}. Choose {Trim Line}, pick the edge of the circle as near as you can to the line coming from the box, pick the line inside the circle to trim it away. {Quit}. Now do the same for the other circle (Figure 5-25). Then choose {Window}, position the cursor as far to the right of the couplet as you can, and press the stylus. The Window will move over towards the middle, since you have just defined a new Window Center. Do it again if necessary, until the middle couplet is clearly visible. Now repeat the line trimming operation, {Zoom}ing up as much as necessary to check accuracy.

When everything looks right, {Window},{Fit},{Zoom} up on the right half of your picture and repeat all the steps to connect the righthand box to its circles. {Window},{Fit},{Quit}.

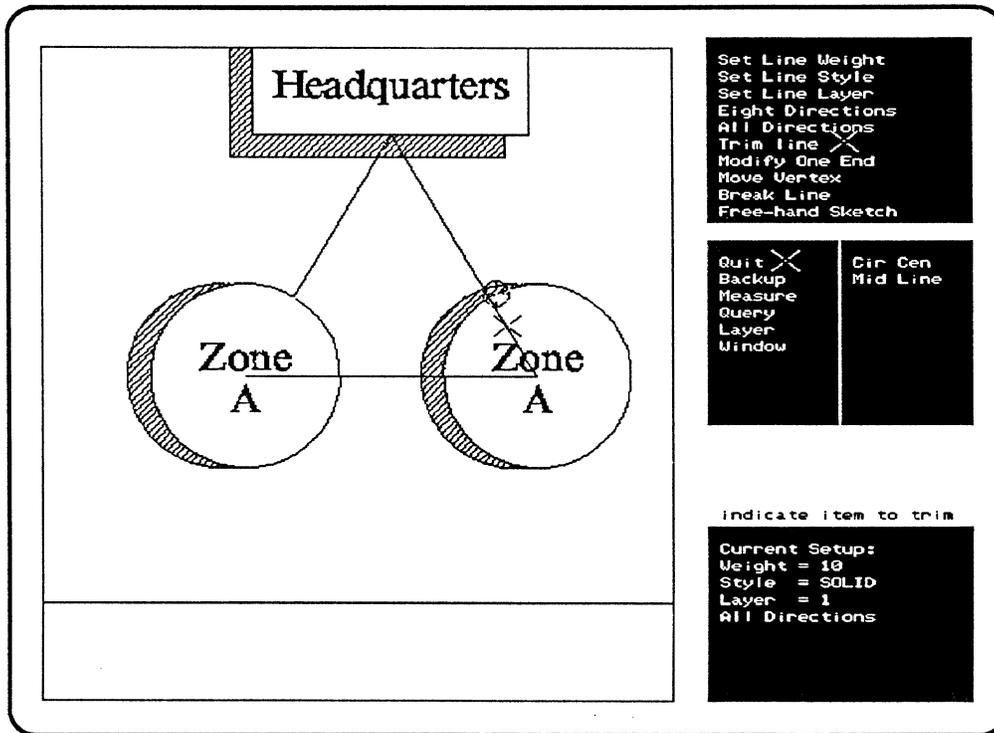


Figure 5-25: Trimming the Connecting Lines on the Left

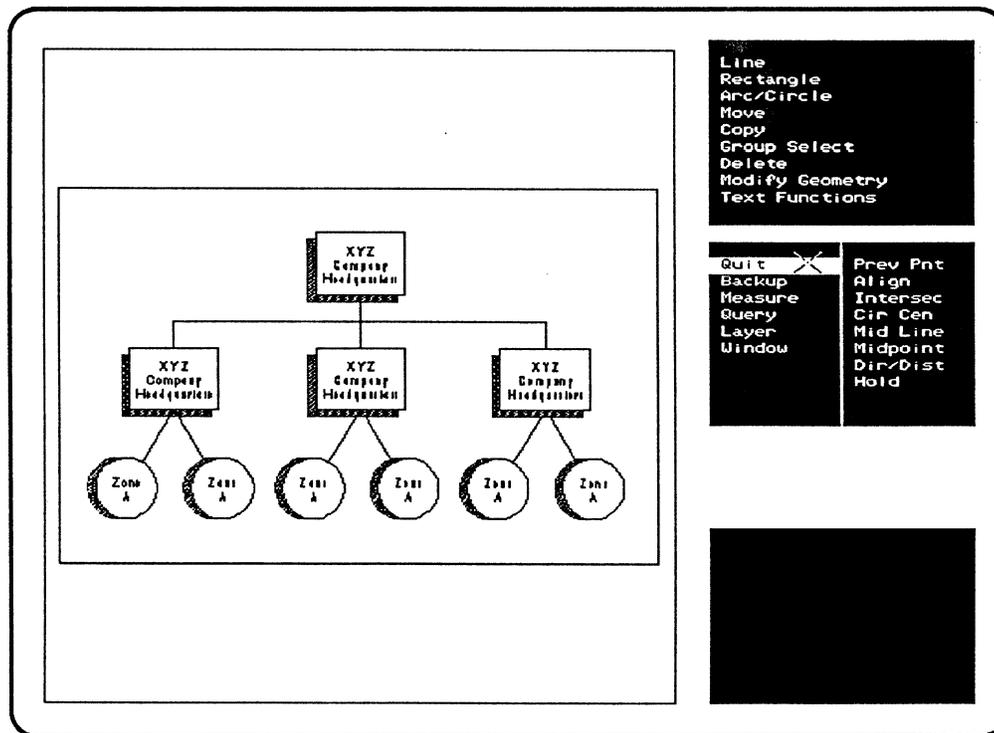


Figure 5-26: After All the Connecting Lines are Drawn

We have only a few lines left to add. We're still in {Line} mode, so just choose {Eight Directions}, {Mid Line}, pick the line between the top and middle box, move the cursor to the right until it's a bit past the middle of the right box, and press the stylus down. Then {Mid Line}, pick the top of the right box, draw your line straight up till it's on the horizontal line you just drew, and press the stylus. {Trim Line} any excess at the intersection. Then repeat this procedure on the left side. That takes care of our connecting lines! But we still have those construction lines left. Just {Delete} them one at a time. Now compare your progress with Figure 5-26?

Editing the Text

So now we have our chart done, at least as far as the geometry is concerned. But all the boxes say "XYZ Company Headquarters" and all the circles say "Zone A". So we'll need to edit some of the text. Start with {Text Functions}, {Edit Text Item}. You'll see a prompt telling you to "pick item to edit". Well, the first piece of text to be modified is the word "Company" in the left box in the center row, which we want to change to "Western". But it's a little hard to Pick out from the other text in that box, so you'll want to {Window}{Zoom} up on the left triad (box and couplet) first. {Quit} out of the {Window} mode, then (as shown in Figure 5-27) put the cursor on "Company", and press the stylus down.

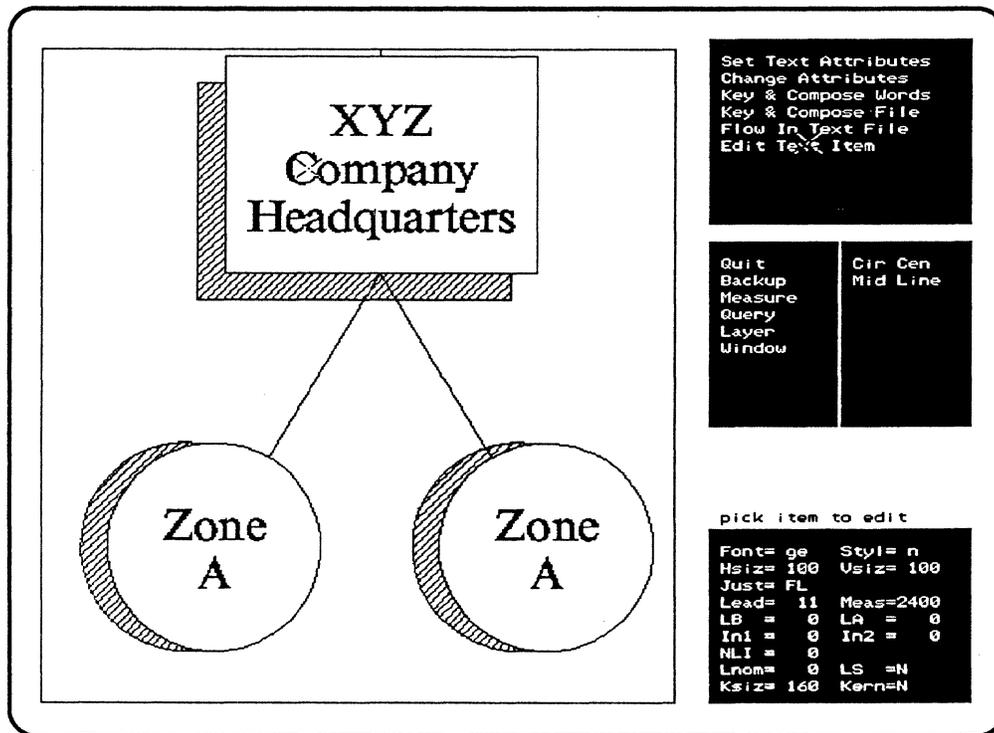


Figure 5-27: Editing Text

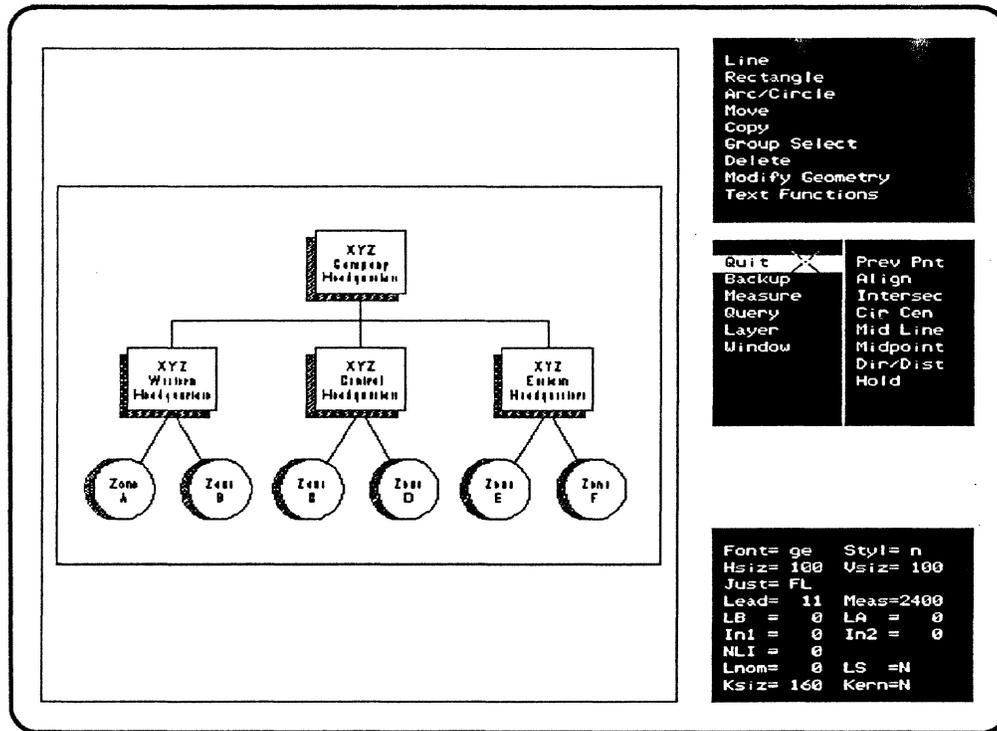


Figure 5-28: After All the Text is Edited

The monochrome monitor will clear and a temporary "vi" file will appear, consisting of just one word on the first line: "Company". Use the normal "vi" commands, which in this case would be: [R] Western [Esc] [:] [x] [Enter]. As soon as you exit from "vi", the change will appear upon your color screen.

We're still in {Text Edit} mode, so once again we're prompted to pick an item to edit. This time, move the cursor down to the right circle of the couplet below (we don't have to change the contents of the left circle, since "Zone A" is OK there). Press the stylus on the "A", and "vi" will start up again, with the "A" where "Company" was before. Type [r] [B] [:] [x] [Enter] to replace it. You'll probably need to {Quit} out of {Text Functions} mode and {Move to Plumb} "Western". That's it for this triad!

{Window}, then use the center moving function (changing the center of the Window by pressing the cursor on screen) as we did before, to pan over to middle box and couplet. {Quit} out of {Window}ing, then repeat the text editing and moving process, this time replacing "Company" with "Central" and the two "A"s with "C" and "D". Do it again for the right hand box and couplet ("Eastern", "E" and "F"). Finally, {Quit},{Quit} back to the E.I.M. and {Window},{Fit},{Quit} to see what your completed graphic looks like. This next to final stage is shown in Figure 5-28.

Remember that "vi" is a complicated program all by itself, and make sure that you're read your Xenix documentation on it before you try anything complex. Be assured that any legal "vi" commands can be used with this MECCA III process.

Signing Your Work -- the {Sketch Line} Function

If you're like most creative people, you'll want to sign your work. Now you could do this with the regular {Key & Compose Words} function, but that would be boring. How about using your real signature! Just choose {Line},{SketchLine}, and you'll be prompted to pick a starting point. Move the cursor to an empty part of the graphic and press it down gently. Now slowly sign your name in the usual fashion, keeping the stylus vertical as you go, and pressing it down again at the end. Then {Quit},{Quit} back to the E.I.M.

The reason we advise slowness in using the stylus for this is that the {Sketch Line} function is *very* sensitive. In order to handle the millions of possible freehand lines that a user could want, MECCA III has to pay attention to the smallest of stylus movements. This means that it's easy to wind up having parts of your sketch line (in this case, your signature) where you don't want them. You can delete these parts (see *Volume 3*) but it's a bother.

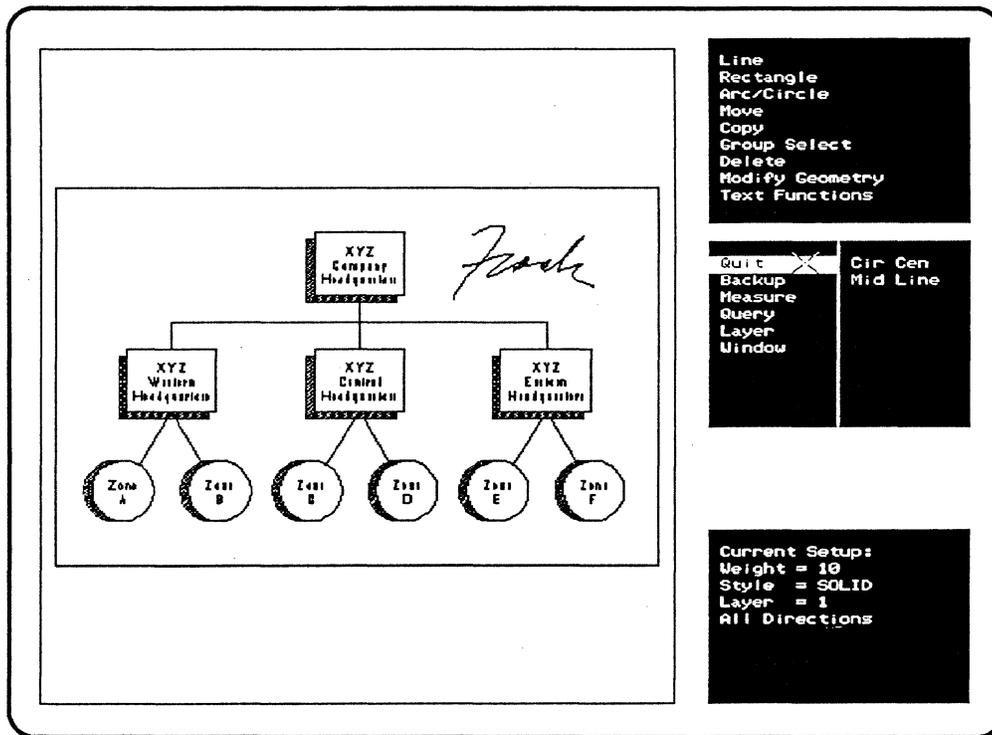


Figure 5-29: Using {Sketch Line}

(We recommend that you use sketch lines sparingly, since they use a lot of memory, and too many in one picture can cause MECCA III indigestion. Figure 1-10 has about the maximum for one graphic file.)

Do a {Window},{Fit},{Quit} to check to see that everything seems OK. Your final results should look like Figure 5-1 and 5-29. You can keep going back and changing parts as often as you like, until you are finally satisfied. Then you can {Quit} back to the Main Menu, {Save Files} under a chosen filename (such as mychart.g [Enter] say), and {Output Files} a copy to show your friends.

Merging Graphics into Graphics

So now you have two graphics created, the simple one and the more complex one. Suppose you needed to have them both in the same picture? From the Main Menu, choose {Edit Files}, {Edit Illustration}, and use mystar.g [F1]. As soon as its loaded you'll get the E.I.M. in the blue area. Now immediately {Quit} one step back to the Edit Menu, and choose {CombineIllustration}, using mychart.g [F1]. Wait several seconds (this one is a much larger illustration) and it will appear on screen, all in white.

If you can't see it, and the E.I.M. has shown up anyway, do a {Window}{Fit}, {Quit} and it will appear. It's more common for the new graphic to show up overlapping the current one, especially if you had remembered to {Window}, {Fit}, {Quit} it before it was {Save}ed -- because {Fit}ting a graphic always centers it, and both illustrations will try to occupy the same space at the same time (as in Figure 5-30).

Whether the new graphic is on top of the current one or off to the side, you can use the {Move} functions to easily position the newcomer the way you want, because those white lines are the indication that the new file arrives completely Selected as a Group. When you are satisfied, you can {Group Select}, {Unselect All}, {Quit}, and everything will be back in living color. Do another {Window}, {Fit},{Quit}, and you can print, save or change this combined graphic (see Figure 5-31) just as if you had created it from scratch.

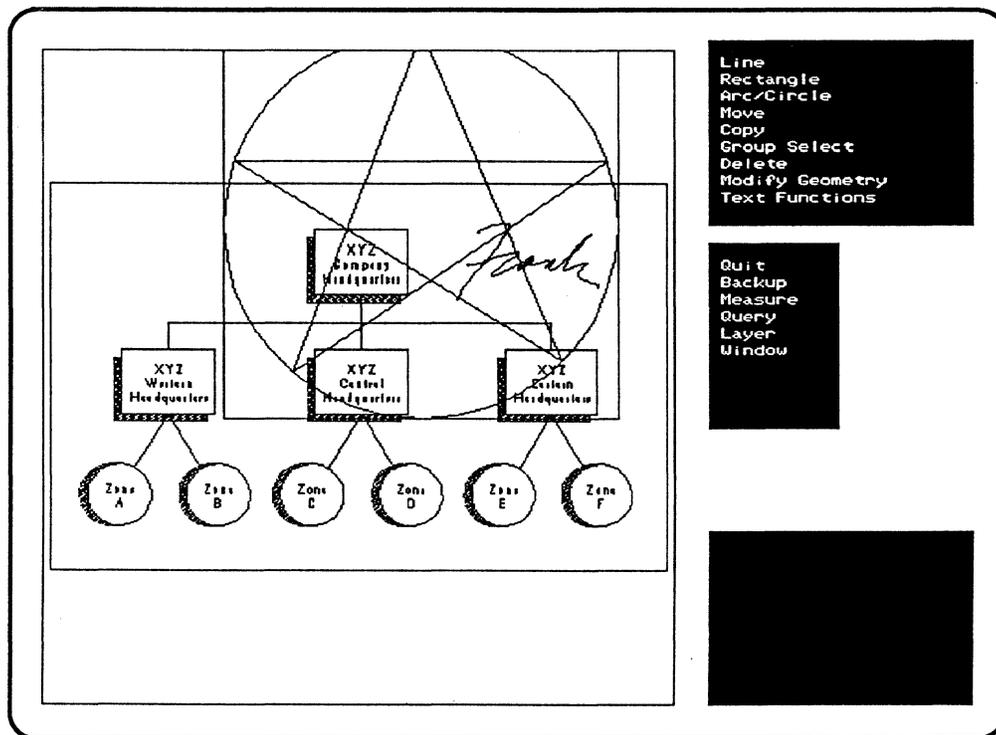


Figure 5-30: {Combine Illustration} Option

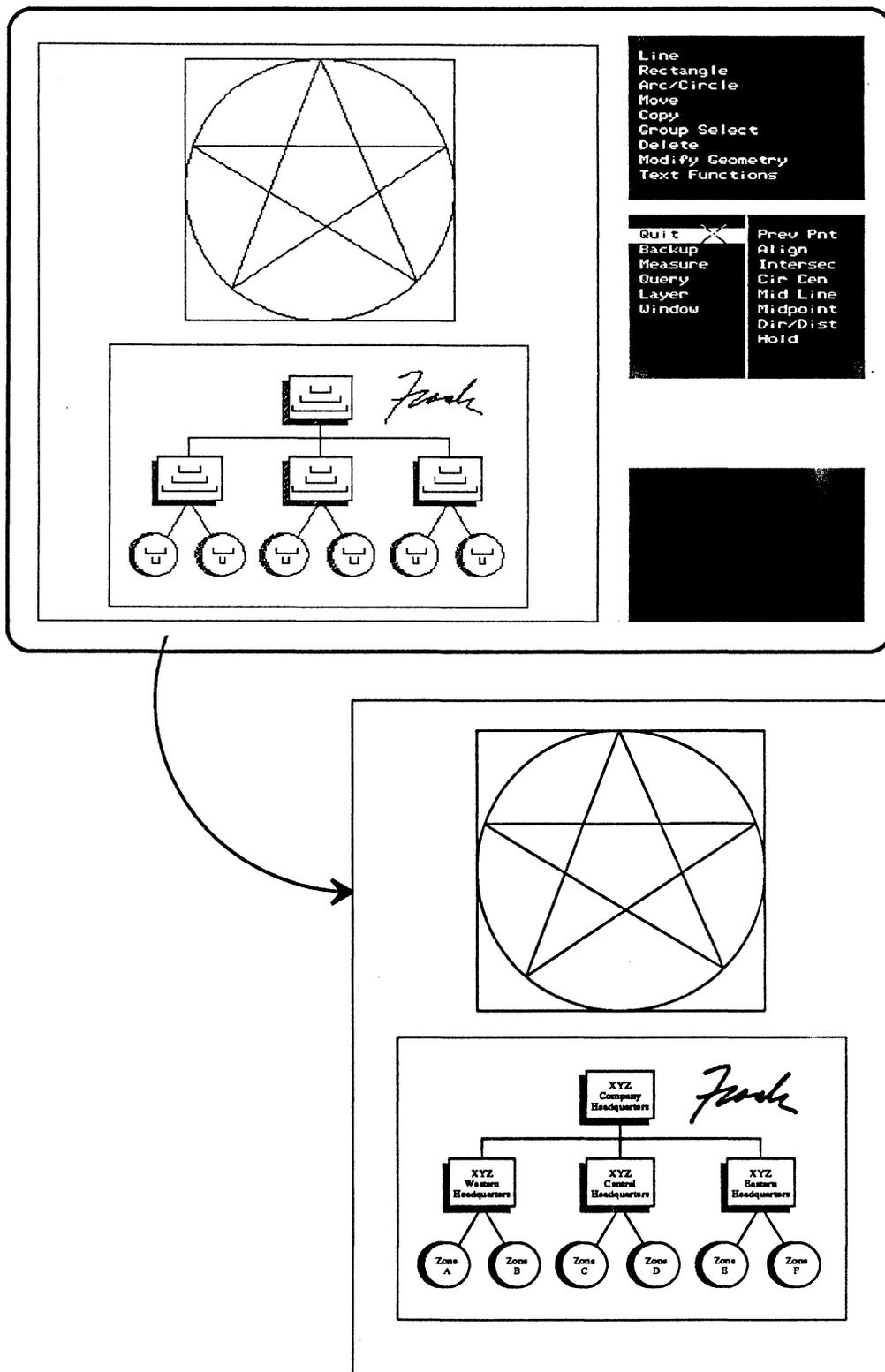


Figure 5-31: Rearranging Combined Illustrations

Chapter 6: Using Batch Files and Page Formats

Creating Batch Composition Files

Almost any wordprocessing program that runs under PC-DOS or MS-DOS can be used on your PC/AT to create batch files that can be used with MECCA III (though you'll have to strip out any extra "control characters", as described in Chapter 3). Or if you have a text editing program that runs under the Xenix system, you can use it instead.

We assume that most users will invoke Page Formats in their batch files, but it's not absolutely necessary. In fact, you can even create a batch file with no composition commands at all, and it will still compose!

The Naked Batch File: It's All Default of the System...

Type out the following batch file with your wordprocessing program, putting blank lines in where indicated:

Example of a batch file without a format or any embedded commands:

This is to show what happens when you make up a batch composition file for use with MECCA III, and don't bother to use a Page Format of any sort.

Unless they are over-ruled by embedded Immediate Commands, the default values in the software will decide what font, style, pointsize, margins, etc. should be used, and the batch file will be composed.

So even your boss will be able to produce typeset copy!

If you've been using a DOS wordprocessor, "print" your file "to disk". When you're done, copy your Xenix text file or DOS printed-to-disk file over to your /usr/name/text directory, using the Xenix FdArkFcn or DosFdFcn Menus described in Chapter 3. Strip out control codes and blank lines at the end, if necessary (double-check that all of them were actually deleted, since "vi" sometimes leaves a few). Then put the cursor bar over the filename and press [F8], on the MajorFcn Menu, again as explained in Chapter 3. Tell the computer, via the Composition Control Screen, what device to send the composed version of the file to, and press [Enter] to start the composition process.

Within a minute, you should have a composed version of your file in the LaserWriter's hopper or the APS-5's cartridge. The results will look like Figure 6-1.

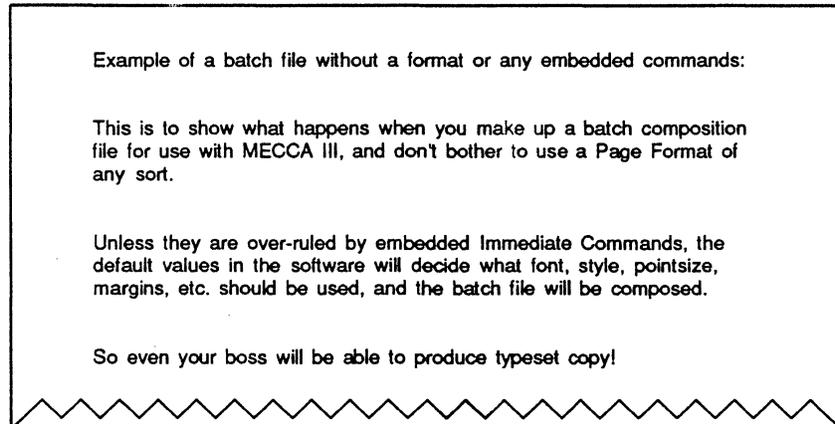


Figure 6-1: Results of Composing a Naked Batch File

The default values used are:

- typefont = Geneva
- style = Normal
- pointsize = 10pts
- margins = 732 decipoints
- composition mode = Flush Left
- Column Definition = One

If you want to change any of them, you'll have to either embed some special codes known as "Immediate Commands", or else use a Page Format as described later in this chapter.

This "naked" batch file doesn't produce very exciting results though, so let's explore some options to "dress it up" a bit.

The Four Families of Commands

There are four different families of commands that you can use in order to guide MECCA through the batch composition process. They are: *Immediate*, *Text Item*, *Setup*, and *Pagination Commands*. In the next few pages we'll explain how to use some of the simpler commands in each family, without using Page Formats.

Immediate Commands

With the Immediate Commands, you can change the type size, style and even font in the middle of a line. You can alter the justification, the leading, or the baseline, for one character or the rest of your text item. You can insert extra space horizontally or vertically, put in leader dots, switch to super- or subscripts, or print out special characters in the middle of otherwise normal text.

The two important things to remember about Immediate Commands is that (1) they start working the instant the composition process gets to them, and (2) they stop working as soon as a countermanding code is encountered *or* the end of the text item occurs. Here's a list of some of the more important ones:

Normal: \N^	Italic: \I^
Light: \L^	Light Italic: \LI^
Bold: \B^	Bold Italic: \BI^
Extra Bold: \XB^	Extra Bold Italic: \XBI^
Underline Start: \US^	Underline End: \UE^
Change Font: \CF^	Change Mode: \CM^
New Line: \NL^	Special Characters: \nnn^

Altering Type Styles and Adding Underlines

You'll notice that we grouped the style and underlining commands together. Let's try using some of them on the same file we created earlier. Edit your file to match the following exactly:

\B^Example of a batch file \BI^without \B^a format but \US^with \UE^ embedded style commands:

This is to show what happens when you make up a batch composition file for use with MECCA III, and \I^don't bother to use a Page Format \N^of any sort.

Unless they are over-ruled by embedded Immediate Commands, the \US^default values in the software \US^ will decide what \L^font, style, pointsize, margins, etc. \N^should be used, and the batch file will be composed.

So \XBI^even your boss \N^will be able to produce typeset copy!

When you compose the file again, the results should look like Figure 6-2. Compare the results to your batch file text. It's obvious that a caret sign (^) is used to attach each command to the words to be affected. But did you notice that the second "\B^" command in the first sentence stopped as soon as it came to the blank line? That's because (as mentioned before) all Immediate Commands stop when they get to the end of a "Text Item", which in MECCA III is anything surrounded by blank lines.

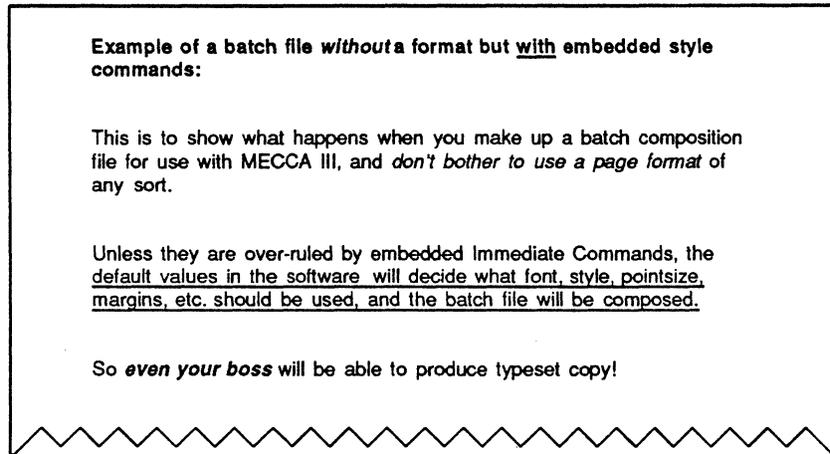


Figure 6-2: Composed Batch File with Type Style & Underline Codes

Changing Modes, Changing Fonts, and Starting New Lines

The Immediate Command for changing composition modes to Flush Left, Flush Right, Centered, and Justified is "\CM" and a space followed by either a "FL^", "FR^", "CE^", or "JU^", respectively. The Immediate Command for changing the typefont to Geneva or Times Roman is "\CF GE^" or "\CF TI^", respectively. The Immediate Command for starting a New Line is "\NL^".

Let's try using some of these on the same file we've been playing with. Strip out all the style commands you just put in (or go back to your original naked file, if you still have it on disk). Edit the file to match this:

```
\CM FR^Example of a batch file without \NL^a format but with
embedded \NL^Mode, Font and New Line commands:
```

```
\CM CE^This is to show what happens when you \NL^make up a batch
composition file \NL^for use with MECCA III, \NL^and don't bother to
use \NL^a Page Format of any sort.
```

```
\CM JU^Unless they are over-ruled by embedded Immediate
Commands, the default values in the software will decide what font,
style, pointsize, margins, etc. should be used, and the batch file will be
composed.
```

```
\CM FL^So even your boss will be able to produce typeset copy!
```

When you compose this version, the results should look like Figure 6-3.

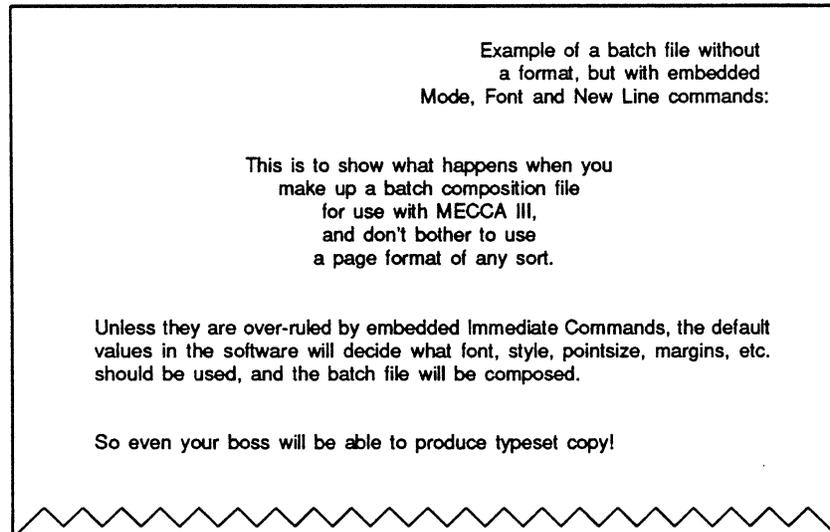


Figure 6-3: Composed Batch File with New Line, Font & Mode Codes

Using Special Characters

The Immediate Command for inserting "Special Characters" into your text is "\nnn", where the "nnn" is a three digit number taken from one of the Special Character Tables in *Volume 2: Batch Composition*.

For example, the numbers 111, 112, and 113, when embedded with a backslash in front and a caret following, will produce these symbols: ©, ®, and ™. Try this exercise: Make up a new text file consisting of the following:

```
\126^ Special Characters \111^1986 by Me\113^
Style has an effect on them too:
\B^Bold -- \125^, \N^Normal -- \125^, \I^Italic -- \125^.
```

When you compose this tiny file, the results should look like Figure 6-4.

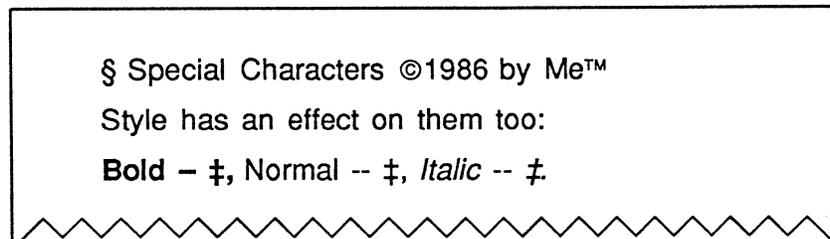


Figure 6-4: Composed Batch File with Special Character Codes

There are several other Immediate Commands you'll want to know about. They are all discussed extensively in *Volume 2: Batch Composition*.

Text Item Commands

Text Items Commands are the commands that say, "Now I'm starting a paragraph of type 3", "The page heading should now say 'Chapter Four'", "A table is starting", "Put a figure right here", etc. Remember that in order for a string of text to be recognized as belonging to a given Text Item command, it has to have a blank line before the command, and a blank line after the end of the string. Here's a list of all of the Text Item Commands:

Heading: \HD
 Paragraph: \P
 Page Foot: \PFUT

Page Heading: \PHED
 Table Start: \TS
 Merge Figure: \FIGURE

Let's try using two of them, Heading and Paragraph, in a sample batch file. As before, make up a text file duplicating the following exactly:

```
\HD1 This is a Heading, type 1.
```

```
\P1 This is a Paragraph of type 1. It's purpose is to show how
embedded Text Item Commands control the typesetting output of
MECCA III.
```

```
\HD2 This is a Heading, type 2.
```

```
\P2 This is a Paragraph of type 2. It's purpose is to show how
embedded Text Item Commands control the typesetting output of
MECCA III.
```

Now try composing this, the same way you did with the previous examples. The results should look like Figure 6-5.

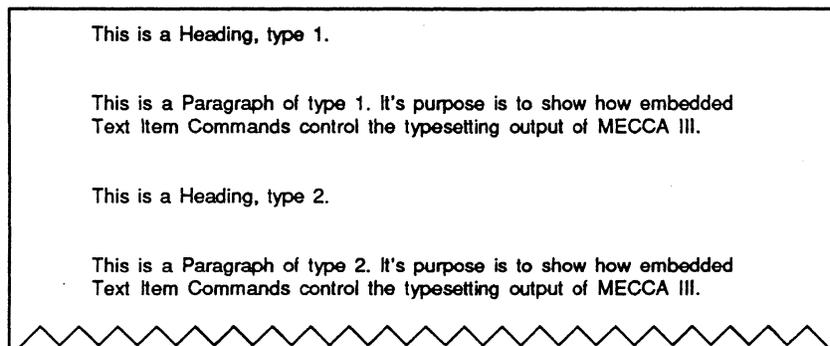


Figure 6-5: Composed Batch File with Undefined Text Item Codes

Setup Commands

The reason why the results of the last example weren't too exciting is that you can't tell the computer, "Give me a type 5 paragraph now," if you haven't bothered to tell it what a "type 5" paragraph is! The Setup Commands are primary components of your Page Format files, and they basically define what you mean by the Pagination and Text Item Commands: what the size and shape of your pages are to be, margins, type sizes, fonts, hyphenation rules, normal letter spacing, what your page headers and footers will look like, etc. Here are four of them that are necessary to make the Text Item Commands in our last example actually work:

Heading: \HDX
Paragraph Style: \PX

Page Definition: \PDEF
Text Style: \TXT

Let's re-edit the last batch file we did, *adding* these lines at the beginning (put each one on a single line):

```
\PDEF WIDTH=6145 DEPTH=7953 TM=7230 BM=0723 LM=1073
RM=5073 ORN=0 DUPLEX=Y\END

\TXT1 FONT=GE STYLE=B VSIZE=180 HSIZE=180 LEAD=240\END

\TXT2 FONT=GE STYLE=B VSIZE=140 HSIZE=140 LEAD=180\END

\TXT3 FONT=TI STYLE=N VSIZE=120 HSIZE=120 LEAD=160\END

\HDX1 TEXT=1 CM=CE LM=1073 RM=5073 LB=360 LA=0\END

\HDX2 TEXT=2 CM=FL LM=1073 RM=5073 LB=280 LA=0\END

\PX1 TEXT=3 CM=JU LM=1073 RM=5073 LB=240 LA=0\END

\PX2 TEXT=3 CM=JU LM=2073 RM=4073 LB=240 LA=0\END

\HD1 This is a Heading, type 1.....
```

Now try composing the batch file and see what you get! The results should look like Figure 6-6. As you can see, once you tell the computer what a "type 1" or "type 2" heading or paragraph is, it has no trouble obeying your orders.

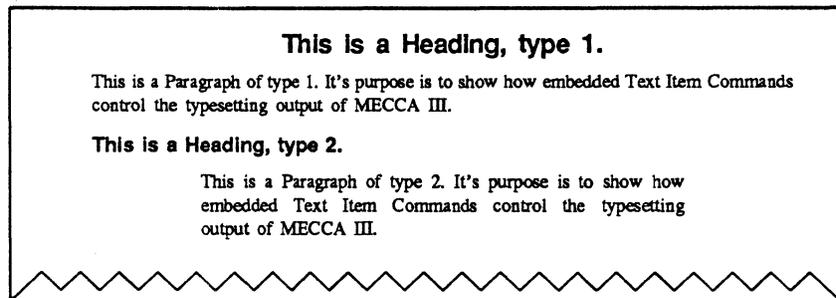


Figure 6-6: Composed Batch File with Defined Text Item Codes

Merging Figures into Your Text

Let's jump back a bit to the Text Item commands, and look at "\FIGURE". This is the one you'll use when you want to take one of the graphics you've created and put it into the middle of a page of text. The pattern for using it looks like this:

```
\FIGURE NAME=/path/filename.ext  POS=xx  WIDTH=nnnn
DEPTH=nnnn  LB=nnnn  LA=nnnn  ORN=n\END
```

In between the "\FIGURE" and the "\END" are a number of "arguments" that explain just which graphic you want to use, and exactly where to put it. The "/path/filename" can be something like "/usr/eve/graphics/fig23.g" or "/usr/adam/graphics/fnord.g", etc. Most users will keep their graphics in a directory called "graphics", under their "/usr/name" directory. The ".g" is the standard MECCA III file extension for graphics files (though you could use something else).

The "POS=xx" has two possible versions: "POS=IM" and "POS=FL", which stand for "Position Immediate" and "Position Float". The former says to put the graphic into the text file at that precise point where the "\FIGURE" command is. The latter says to float the picture on the page somewhere in the general vicinity of the command. Different occasions will dictate your preferences here.

The "WIDTH=nnnn" and "DEPTH=nnnn" commands define the size of the hole on the page into which your graphic is to be placed. The "nnnn" is a four digit number representing decipoints (tenths of a point) of measurement. The graphic you are using will be centered horizontally and vertically within the hole you define with these commands.

"LB=nnnn" and "LA=nnnn" define the amount of blank space or "Leading" to put Before and After the hole for the graphic starts and stops. Again the "nnnn" is decipoints. So for an extra 10 points of leading before and after your graphic's space, you'd say "LB=0100 LA=0100".

"ORN=n" refers to the Orientation of your graphic. "ORN=0" means to put the picture on the page the same way it appeared on screen when it was created,

with the top of the picture towards the top of the page. "ORN=1" means to rotate the graphic 90 degrees, with the top of the picture towards the lefthand side of the page.

As with so many other composition codes, you can leave most of these arguments out completely, because of the presence of default values in the software. For example, if you were to simply say "\FIGURE NAME=/path/filename.ext \END", MECCA III's composing process would measure the graphic to determine its DEPTH, would assume that the WIDTH was equal to the margins of the page, that the POS should be immediate, and that LB and LA and ORN all equaled 0. It would then attempt to fit the graphic on the page as best it could. For some sorts of projects, these default values will work fine. For others, you'll want to specify values for each argument. It's your choice!

But What About Pagination Commands?

These are the ones used for tailoring your Page Formats to specific situations. They tell MECCA III what page number you want a part of your file to start out on, that a footnote is coming up, that you want to skip to the next odd (or even) page, that you want to switch to a different Page Format, add or subtract spacing between letters from now on, etc. They keep going until a countermanding command is met. Many of them require specific Setup Commands to be present in the Page Format file. Here's a list of some of them:

Sequential Page Numbering: #P	Page Number: \PN
New Page: \NP	New Odd Page: \NOP
New Even Page: \NEP	Comment: *
Page Format: \PFMT	

Most of these commands are difficult to demonstrate in a brief sample, since they deal with series of entire pages. The "#P" command is usually used in conjunction with a "\PFUT" (page foot) or "\PHED" (page head) command. For example, suppose you had this in your file near the start: `\PFUT2 6/#P .`

This would tell MECCA III that a page footer should be put at the bottom center of each even numbered (left hand) page, and that it should consist of "6/" and the current page number. In combination with a similar command string for the odd numbered pages ("`\PFUT5 6/#`"), this use of the "#P" command will produce pages numbered "6/1", "6/2", "6/3", etc. In fact, this chapter was created with a batch file having exactly that coding.

Not all batch files are going to start out with page 1, however. So we need to be able to tell the computer where to begin the page numbering. The "\PN" command is used for this. Suppose, for example, that your batch file starts with page 53 of a book or manual. You would put the code "\PN53" near the beginning of your file, with a blank line above and below it, and any "#P" codes would accept 53 as the page number for the first page.

You don't always want or need to fill an entire page with text and graphics before beginning the next one. The "\NP", "\NEP", and "\NOP" commands will

cause the composition process to pause and skip to the start of the very next page, the next even page or the next odd page, respectively. These commands require you to have a blank line above and below them in your batch file.

Wouldn't it be nice to be able to sneak notes to yourself into your batch file, so you could remember why you made various coding decisions or what a particularly long command string is supposed to do? With the "*" command at the beginning and end of a Text Item, you can! The computer will ignore any text surrounded by this code. Try adding these lines to your current sample batch file:

```
\* Page Definition \*
```

```
\PDEF WIDTH=6145 DEPTH=7953 TM=7230 BM=0723 LM=1073
RM=5073 ORN=0 DUPLEX=Y \END
```

```
\* Type Style Definitions \*
```

```
\TXT1 FONT=GE STYLE=B VSIZE=180 HSIZE=180 LEAD=240 \END
```

```
\TXT2 FONT=GE STYLE=B VSIZE=140 HSIZE=140 LEAD=180 \END
```

```
\TXT3 FONT=TI STYLE=N VSIZE=120 HSIZE=120 LEAD=160 \END
```

```
\* Heading Definitions \*
```

```
\HDX1 TEXT=1 CM=CE LM=1073 RM=5073 LB=360 LA=0 \END
```

```
\HDX2 TEXT=2 CM=FL LM=1073 RM=5073 LB=280 LA=0 \END
```

```
\* Paragraph Definitions \*
```

```
\PX1 TEXT=3 CM=JU LM=1073 RM=5073 LB=240 LA=0 \END
```

```
\PX2 TEXT=3 CM=JU LM=2073 RM=4073 LB=240 LA=0 \END
```

```
\* Begin Text \*
```

```
\HD1 This is a Heading, type 1.
```

```
\P1 This is a Paragraph of type 1. It's purpose is to show how
embedded Text Item Commands control the typesetting output of
MECCA III.
```

```
\HD2 This is a Heading, type 2.
```

```
\P2 This is a Paragraph of type 2. It's purpose is to show how
embedded Text Item Commands control the typesetting output of
MECCA III.
```


Using the \PFMT Command

Perhaps the most important Pagination Command of all is the "\PFMT" command, which is the one that tells the computer what Page Format you want it to use when composing your file. You've probably figured out that typing all these codes could be a real pain if you had to do it every time you wanted to compose a file. Fortunately, through the use of Page Formats, you can work out the tiny details of how to code a particular type of batch file once, then just use the same pattern over and over again, without having to retype the commands each time.

You can use one of the standard Page Format files provided to you by Amgraf. Or you might prefer to create your own, according to the instructions in *Volume 4: Page Formats, Tables and Forms*. Either way, simply insert this command near the start of your file (or elsewhere, if you need to change formats in midtext:

```
\PFMT /path/filename.pfmt \END
```

For most users, the "/path" will be either "/usr/amgraf/text" if they're using Amgraf's prepared Page Formats, or "/usr/name/text" if they have copied one of the former into the latter, or created a new one in their directory. Page Format files need to have that ".pfmt" as their file extension, but the rest of their filenames can be any legal Xenix filenames.

After inserting the "\PFMT" command, you can prepare your text for typesetting with a minimum of commands to be inserted. You'll want to label chapter and section headings, perhaps insert blank lines, or force page breaks, etc. You may want to italicize some words in the middle of a paragraph, or merge a figure or chart into the middle of the text. We've explained how to do all these things in this chapter, but the bottom line is that you could easily prepare a large document with less than a dozen different types of command, once you had a Page Format invoked.

Make sure that the person typing your raw text, whether it's you or someone else, puts a blank line between each paragraph or other text item that will need to be labeled. When you're getting the raw file ready to be composed by MECCA III, be careful to put a blank line on either side of the Pagination and Text Item commands that require them, and to put a backslash (\) in front of every command (except the Sequential Page Number command, which uses a # instead).

Figure 6-7 shows the basic idea of how the \PFMT command allows three pages of coding to be condensed down to one line in a batch file, which is then composed to produce the final result. Figure 6-8 shows a closeup of the first page of the batch file.

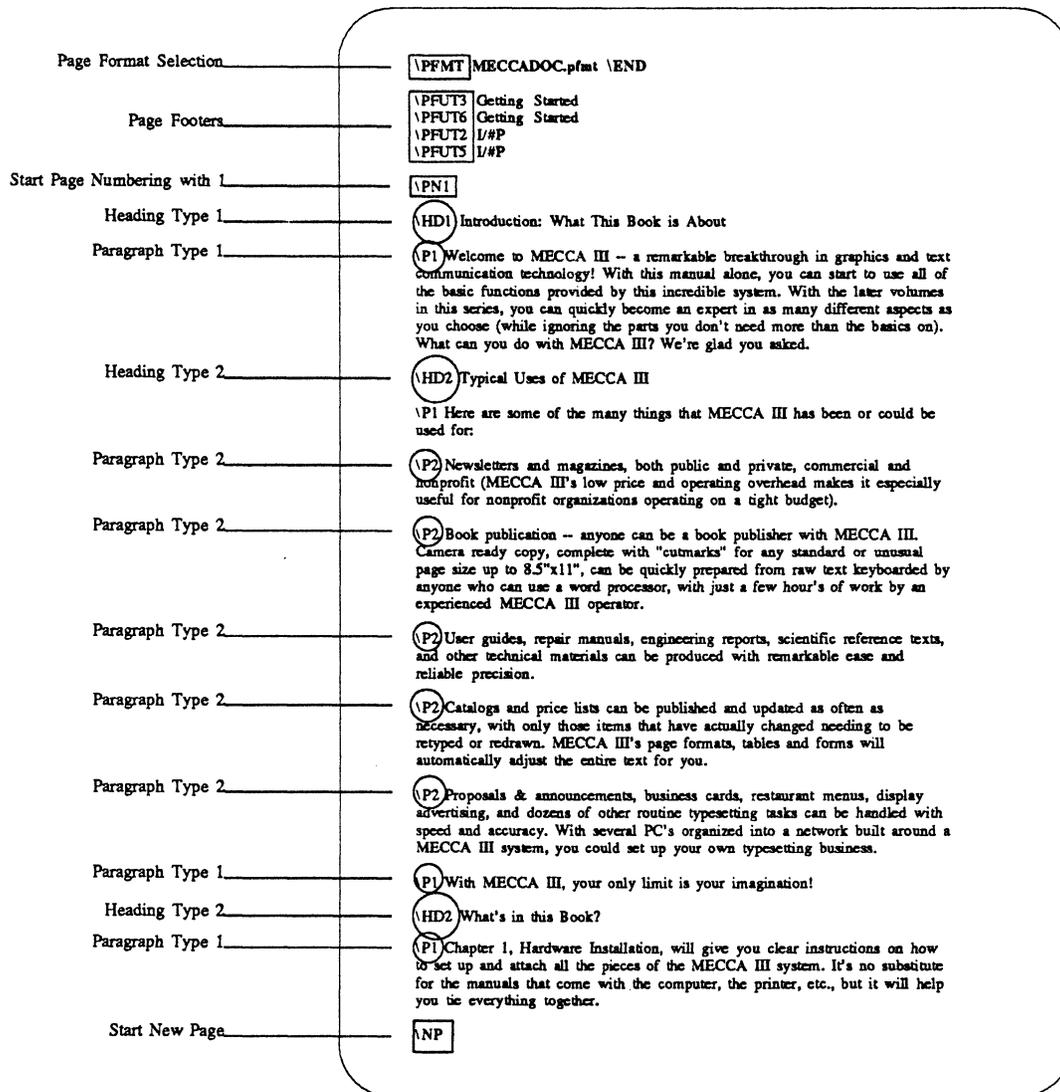


Figure 6-8: Using Text Item Commands

Composing Batch Files *with* Page Formats

When you have everything ready, you compose a Page Formatted batch file the same way we've been doing with these samples: by putting the cursor bar on the Major Functions Menu over the name of the batch file and pressing [F8] to get to the Composition Control Screen. Follow the usual procedures there (described in Chapter 3 and above), and your composed file will arrive at its destination quickly.

Tracing Composition Problems

Once in a while, especially while you're learning, you'll have difficulty getting a batch file to compose properly. This can be very frustrating with long files, since a simple "\" out of place (or missing) on page 27 can tie up a 30 page file.

There are three major categories of problems that can cause crashing compositions (other than the *1812 Overture*). *They are problems with:*

- Category One -- Immediate, Text Item and/or Setup Commands
- Category Two -- Pagination Commands
- Category Three -- available disk space.

To test for the first two categories, we use the Composition Control Screen. Since most of the time when a composition fails, you'll be sent back to the Major Functions Monochrome Menu, it's easy to choose [F8].

MECCA III: Composition Control Screen

Name: filename.ext__

Output to: _ Laser; _ APS-5; _ Preview File

Do: _ All ... or ... Pages ____ Through ____

Trace only: _ Galley ... or ... _ Pagination

Laser name: /dev/tty01

APS-5 name: /dev/lp0

Preview name: _____

This screen should be familiar from Chapter 3. The "Trace" option that we ignored then is what we're going to look at now.

Use the [Tab] key to get to the choice that says "Do _ All", and put an x there. Then [Tab] to the choice that says "Trace only: _ Galley", *or* the one that says "Trace only: _ Pagination", put an x in *one* of them, and press [Enter]. The computer will begin to compose your file, showing the Text Items one by one as they are composed. When it gets to one it can't handle, it will stop. And there on the screen will be a finger pointing at the culprit: the last "good" Text Item before something confused the computer. A few moments of inspecting your batch file (and maybe referring to your documentation!) should clear up the mystery. Use your text editor to fix the mistake, and try again to compose your file.

If you run a trace on one category and the computer goes all the way through the file without stopping, then returns you to the MajorFcn Menu, you should trace the other category. If that one also seems to be OK, check for Category Three (space) problems.

Don't get discouraged if your first few long files seem to have several mistakes each. That's happened to all of us and is a normal part of your learning process. Just remember how picky (and stupid) computers can be, and try again.

As for Category Three, if you have a lot of large files, it's possible that you may be having trouble composing because there's not enough "scratch space" (which computers use like we use scratch paper) free on the hard disk. That's when you'll get a message saying "not enough space on device 1/40", since "1/40" is Xenix jargon for the hard disk. Generally, a composed file takes up about four times as much space on the disk as the original batch file. Fortunately most composed files are temporary ones that get rewritten over each time you compose another file directly to an output device. Only composed "preview files" reside permanently on the disk (until deliberately erased). As a practical matter, it's best to limit your batch files to a maximum of 250 kilobytes (that's one-quarter of a million characters!) each, and to store long preview files on floppies except when you need them.

Just like some people say that, "You can never be too rich or too thin," computer techies have a saying that, "You can never have too much memory." No matter how big your hard disk may be (30 megabytes, 40 megabytes, 50...), sooner or later, if you don't "take out the garbage", you'll find your free space vanishing.

If you do get the "out of room" message, or if you notice that a file listing on your monochrome monitor says that it's over 250000 bytes long, there are three things you can do: You can use your Delete Functions to get rid of any large obsolete files that are taking up space on your disk (if you've had any "core dumps" caused by compositions crashing, you should delete the files called "core", "compose.inp", and "pagemu.dat"). You can use your Floppy Disk Functions (DOS or Xenix) to copy several large files onto floppies, and then delete the originals on the hard disk. You can use your text editor to break up your large file into two or three smaller ones, remembering to duplicate any Page Format commands from the first part into the other parts (and to insert the new starting page numbers with the \PN command), and then try to compose the now smaller files. Any of these tricks should free up enough scratch space on the disk to make your computer more cooperative.

Using MECCA III to Edit Composed Batch Files

As you'll recall from Chapter 3 and the last section, the Composition Control Screen asks you how much of the file to compose, and which device (if any) to send it to. One of those options is to create a "Preview" file with a name of your choice. These preview files exist for two main purposes: to allow you to create several already composed files to be sent out as a group to a phototypesetter via the "[F6] = SendFcn" option on the AltFcn Menu; and/or to allow you to edit them interactively on the MECCA III color screen.

To do the former, see the instructions in Chapter 3. To do the latter, fire up MECCA III's color side by pressing [F8] on the StdFcn Menu and choose the {Edit Files}, then {Edit Batch Document} options on the color screen. You'll see a message in the blue area saying "Select File Name from Monochrome Screen Display" and the LoadFcn Menu will once again appear on the monochrome monitor. Move the cursor to the composed preview file you want to edit and press [F1] to Load it.

After the preview file gets loaded, the blue area will show a very simple menu, the Edit Document Menu, which consists of these three choices: {Display Next Page}, {Display Prev Page}, and {Display Specific Page}. Choose {Display Next Page} and soon you'll notice the first page of your document appearing in the Window Area.

Using the first two options, you can page forwards and backwards through your document, or (to save time) you can jump to a particular page by choosing {Display Specific Page} and typing in the desired page number and pressing [Enter] when prompted. The first page that has that number assigned to it will be displayed (since you can start or change your numbering anywhere in a batch file, page 7, for example, won't necessarily be the seventh from the front of the file).

If you are using a slashed or hyphenated numbering system in a document (such as in these manuals), you'll want to run each section or chapter as a separate file if you want to use the {Edit Batch Document} {Display Specific Page} modes, since MECCA III can't tell the difference between page "1-3" and page "2-3", "3-3", "4-3" etc. You might want page 4-3, but if you have all the chapters merged together and you ask for page 3, you're going to get page 1-3 (the first page 3 encountered).

All of the graphics and text editing commands discussed in Chapters 4 and 5 can now be used to alter your document. You can combine graphics into any empty spaces available, change type faces and styles, and otherwise experiment until you have the page exactly the way you want it to be. You can then print *that page* out on your output device. Make sure you remember to do a {Window}, {Fit},{Quit} first, then print the page with the {Output Files} option.

When you are using MECCA III to edit composed files, you are working with one page at a time. If you want to save the changes you have made, you must first, remember to do that {Window},{Fit},{Quit}, then second, save each page as an individual graphic (".g") file with the {Save Files} option.

If you want to preserve all your changes, you'll need to either make corresponding changes in your original text file, or else break the entire composed file up into individual graphics files and save them. This interactive mode of composition is meant primarily for short files, rather than long ones, since a graphic made up of text (which is what you're seeing on the MECCA III screen) takes a lot of disk space to save. So we recommend that most users who are working with long files experiment with representative pages only, then use their word processing programs to make appropriate changes throughout their text files, then recompose and print them out.

When you're finished working with, or just viewing, a given page, go back to the Edit Files Menu. If you want to see another page, choose {Edit Batch Document}. The LoadFcn Menu will show up again, with the cursor bar on the last document file loaded. Choose another file, or stay where you are and press [F1] again. If you're staying with the same file, the "Loading" will be nearly instantaneous. You can then decide which of the three options on the Edit Document Menu you want (forwards, backwards or specific page).

If you've been using the color Function Key assignments mentioned in Chapter 4, this whole process can be as simple as [F1], [F1], [F1] to get the next page, or [F1], [F1], [F2] to get the previous page. Just pause about two seconds between each key pressing for best results.

Appendix A: Glossary

AA	Abbreviation of "Author's Alteration." It is used to identify any altered text or illustrative matter which is not a PE (Printer's Error).
ALIGNMENT	Arrangement of type within a line so that the base of each character (excluding descenders) rests on the same imaginary line, i.e., base-aligning. Also the arrangement of lines of type so that the ends of the lines appear even on the page; that is, flush left, flush right, or both.
ALTERATION	Any change in copy after it has been set. See AA and PE.
AMPERSAND	Name of the type character "&" used in place of "and."
ARABIC NUMERALS	Ten figures, zero and numerals 1 through 9, so called because they originated in Arabia, as opposed to Roman numerals.
ART	All original copy, whether prepared by an artist, on a camera or by other mechanical means. Loosely speaking, any copy to be reproduced.
ASCENDER	That part of the lowercase letter that rises above the body of the letter, as in <i>b, d, f, h, k, l</i> and <i>t</i> .
ASTERISK	Name of the type character "*" which is the reference mark used in the text to indicate a footnote. Also used to indicate missing letters or words.
BAD BREAK	Incorrect end-of-line hyphenation, or a page beginning with either a widow or the end of a hyphenated word.
BAD COPY	Any manuscript that is illegible, improperly edited, or otherwise unsatisfactory to the typesetter. Most typographers charge extra for setting type from bad copy.
BASELINE	Imaginary horizontal line upon which all the characters in a given line stand.
BLEED	Area of plate or print that extends ("bleeds" off) beyond the edge of the trimmed sheet. Applies mostly to photographs or areas of color. When a design involves a bleed image, the designer must allow from 1/8" to 1/4" beyond the trim page size for trimming.
BLOCK	An area defined by the user to group Text Items that must be kept together. These items can have a fixed position on the page or can be allowed to float.
BLUE LINE	Blue nonreproducible line image printed on paper showing the layout. Used for a stripping guide or for mechanicals. Because the blue lines are nonreproducible, they do not show when the layout sheets are photographed for platemaking.

Glossary

BODY MATTER	Also called <i>body copy</i> . Regular reading matter, or text, as contrasted with display lines. See TEXTSETTING.
BODY SIZE	Depth of the body of a piece of type measured in points.
BOLD FACE	Heavier version of a regular, or normal, typeface, used for emphasis. Indicated as BF and bf .
BORDERS	Decorative lines or designs available in type, used to surround a type form or page.
BOXED OR BOXED-IN	Refers to matter enclosed by rules or borders.
BRACKETS	Pair of marks used to set off matter extraneous or incidental to the text.
CAMERA-READY ART	Copy assembled and suitable for photographing.
CAPITALS	Also known as <i>caps</i> , <i>uppercase</i> and <i>w/c</i> . Capital letters of the alphabet.
CENTERED TYPE	Line(s) of type set centered on the line measure.
CHANGE MODE	Ability to change a paragraph or other Text Item between the left and right margins, such as <i>flush left</i> , <i>flush right</i> , <i>center</i> or <i>justify</i> .
CHAPTER HEADS	Chapter title and/or number of the opening page of each chapter.
CHARACTER COUNT	Total number of characters in a line, paragraph, or a piece of copy to be set in type.
CHARACTERS	Individual letters, figures, punctuation marks, etc., of the alphabet.
CLOSE UP (v.)	Bring together by removing space.
COMMAND	In phototypesetting, the portion of a computer instruction that specifies the operation to be performed (e.g., what typeface, point size, linespacing, etc., are required).
COMPOSITION	See TYPESETTING.
CONDENSED TYPE	Narrow version of a regular typeface.
COPY	In design and typesetting, typewritten copy. In printing, all artwork to be printed: type, photographs, illustrations.
DAGGER	Second footnote reference mark (†) after the asterisk.
DATA	General term for any collection of information (facts, numbers, letters, symbols, etc.) used as input for, or desired as output from, a computer.

Glossary

DECIPOINT	One-tenth of a point.
DELETE	Proofreader's mark meaning "take out."
DESCENDER	That part of a lowercase letter that falls below the body of the letter, as <i>g, j, p, q</i> and <i>y</i> .
DISCRETIONARY HYPHEN	Hyphen that is keyboarded with the copy, which may or may not be used in the printed matter.
DOT LEADERS	Series of dots used to guide the eye from one point (usually horizontal) to another.
EDITING	The process of checking copy for fact, spelling, grammar, punctuation and consistency of style before releasing it to the typesetter.
EM	Commonly used shortened term for <i>em-quad</i> . Also, a measurement of linear space, or output, used by typographers (i.e., How many <i>ems</i> does the copy make?)
EM-DASH	Also referred to as a <i>long dash</i> (—). A dash equal to the width of an <i>em-quad</i> .
EM-QUAD	Also called a <i>mutton</i> . In phototypesetting, a space that is the square of the type body size; that is, a 10-point <i>em-quad</i> is 10 points wide. The <i>em</i> gets its name from the fact that in early fonts the letter <i>M</i> was usually cast on a square body.
EM-SPACE	Space that is the width of an <i>em-quad</i> .
EN	Commonly used shortened term for <i>en-quad</i> .
EN-DASH	A dash the width of an <i>en-quad</i> (–). Used to take the place of the word "to," as in "1978–79."
EN-QUAD	Also called a <i>nut</i> . The same depth as an <i>em</i> but one-half the width: the <i>en-space</i> of 10-point type is 5 points wide.
ENUMERATED PARAGRAPH	What is referred to in standard typing as a simple outline style is called, in MECCA III, "enumerated paragraphs." An enumerated paragraph is one with a number, word or other item in the left margin of an indented paragraph, page foot or page heading.
EXCEPTION DICTIONARY	In computer-assisted typography, that portion of the computer's memory in which exceptional words are stored. Exceptional words are those words which do not hyphenate in accordance with the logical rules of hyphenation. For example, <i>ink-ling</i> would be an exceptional word since computer hyphenation logic would break it as <i>inkl-ing</i> .
EXTENDED FACE	Also called <i>expanded</i> . A wide version of a regular typeface. That part of a metal type that prints. Also, the style or cut of the type: typeface.

Glossary

FAMILY OF TYPE	All the type sizes and type styles of a particular typeface: roman, <i>italic</i> , bold, condensed, expanded.
FLUSH LEFT (OR RIGHT)	Type that lines up vertically on the left (or right).
FONT	Complete assembly of all the characters (upper- and lowercase letters, numerals, punctuation marks, points, reference marks, etc.) of one size of one typeface: for example, 10-point Geneva normal. Font sizes (characters in a font) vary from 5 to 96 points, depending on the makeup of the font. Special characters (those not in a regular font) are called <i>pi characters</i> .
FORMAT	General term for style, size and overall appearance of a publication. Also, the arrangement or sequence of data.
FORMAT FILE	In phototypesetting, translating the designer's type specifications into a file of command codes for the phototypesetting equipment.
GALLEY	A long vertical strip of type (usually 1 column wide) that may or may not have appropriate spacing and headings inserted.
GUTTER	Blank space in the center of a book or magazine spread where two facing pages meet. Also, the blank spaces between columns on a multiple-column page as well as the blank spaces between columns in tables.
GUTTER MARGIN	The inner margin of a single page.
HAIRLINE	Fine line or rule; the finest line that can be reproduced in printing.
HANGING INDENT	In composition, a style in which the first line of copy is set full measure and all the lines that follow are indented.
HEAD	Top, as opposed to the bottom, or foot, of a book or a page.
HEADING	Bold or display type used to emphasize copy. Opposite of BODY COPY and TEXT.
HYPHENATION	Determination of where a word should break at the end of a line. In typesetting, computers are programmed to determine hyphenation by the following methods: discretionary hyphen, logic, exception dictionary, and true dictionary.
INDENT	Placing a line (or lines) of type in from the regular margin to indicate the start of a new paragraph. The space used for an indent is usually <i>one em</i> .
INPUT	In computer composition, the creation of new copy or the data to be initially entered or processed.
ITALIC	Letterform that slants to the right. <i>This sentence is italic.</i>

Glossary

JUSTIFIED TYPE	Lines of type that align on both the left and the right sides of the full measure.
JUSTIFY (v.)	Specify lines of copy to be set flush in both the left and right margins by adjusting the amount of space between words in the lines to make them even.
KERNING	Adjusting the space between letters so that part of one extends over the body of the next. In phototypesetting, it is accomplished by deleting one or more units of space from between character pairs. Composition set this way is often termed <i>set tight</i> or <i>set with minus</i> letterspacing.
L.C., LC, l.c., lc	Lowercase, or small, letters of a font.
LEADERS (pron. <i>leeders</i>)	Row of dots, periods, hyphens, or dashes used to lead the eye across the page. Leaders are specified as 2, 3 or 4 to the em; in fine typography they may be specified to align vertically.
LEADING (pron. <i>ledding</i>)	In phototypesetting, the placement of space between lines of type; also called <i>linespacing</i> or <i>film advance</i> .
LETTERSPACE	Space between letters.
LETTERSPACING	In composition, adding space between the individual letters in order to fill out a line of type to a given measure or to improve appearance.
LIGHTFACE	Lighter version of a regular typeface.
LINE DRAWING	Any artwork created by solid black lines: usually pen and ink. A drawing free from wash or diluted tones.
LINE LENGTH	See MEASURE.
LOWERCASE	Small letters, or minuscules, as opposed to caps.
MARGINS	Areas that are not printed around type and/or illustrative matter on a page: the top, bottom and sides.
MARK-UP	In typesetting, the process of marking the type specifications on layout and copy for the typesetter. Generally consists of the typeface, size, line length, leading, etc.
MEASURE	Length of a line of type, expressed in in points. MECCA III's system uses decipoints, or tenths of points.
MERGE	In photocomposition, a technique for combining items from two or more sequenced tapes into one, usually in a specified sequence, using a computer to incorporate new or corrected copy into existing copy and to produce a clean tape for typesetting.
OUTPUT	In phototypesetting, type that has been set.

Glossary

PAGINATION	The numbering of pages in consecutive order.
PARAMETER	Variable that is given a constant value for a specific process. Commonly used in the printing industry to refer to the limits of any given system.
PE	Abbreviation of "Printer's Error," or mistake made by the typesetter, as opposed to "AA."
PHOTO-TYPESETTER	One of various machines used to photographically set, or compose, type images.
PHOTO-TYPESETTING	The preparation of manuscript for printing by projection of images of type characters onto photosensitive film or paper. Also known as <i>photocomposition</i> and erroneously as <i>cold type</i> .
PI CHARACTERS	Special characters usually included in a type font, such as special ligatures, accented letters, mathematical signs, and reference signs. Called <i>sorts</i> by Monotype.
PICA	Typographic unit of measurement: 12 points = 1 pica (1/16" or 0.166"), and 6 picas = 1 inch (0.996"). Also used to designate typewriter type of 10 characters per inch (as opposed to elite typewriter type, which has 12 characters per inch).
POINT	Smallest typographical unit of measurement: 12 points = 1 pica, and 1 point = approximately 1/72 of an inch (0.01383"). Type is measured in terms of points, the standard sizes being 6, 7, 8, 9, 10, 11, 12, 14, 18, 21, 24, 30, 36, 42, 48, 60, and 72.
RECTO	Right-hand page of an open book, magazine, etc. Page 1 is always on a recto, and rectos always bear odd-numbered folios. Opposite of <i>VERSO</i> .
RULE	Black line, used for a variety of typographic effects, including borders and boxes.
SANS SERIF	Typeface design without serifs.
SERIF	Short cross-strokes in the letterforms of some typefaces.
SET (TYPE) (v.)	In phototypesetting, to output type on a phototypesetter that produces the type images on light-sensitive paper or film.
SOFTWARE	Computer programs, procedures, etc., as contrasted with the computer itself, which is referred to as "hardware."
SPEC (v.) (pron. <i>speck</i>)	Specify type or other materials in graphic arts.
TEXT	Body copy in a book or on a page, as opposed to the headings.

Glossary

TEXT ITEM	The composition system converts a data file consisting of Headings, Paragraphs, Tables, etc. (Text Items) into typeset artwork. Following are the six distinct Text Items recognized by the composition system: Heading, Paragraph, Table, Page Heading, Page Foot, and Figure. All files consist of various combinations of the above six Text Items.
TYPE FAMILY	Range of typeface designs that are all variations of one basic style of alphabet. The usual components of a type family are roman, <i>italic</i> and bold .
TYPE STYLE	Variations within a typeface: roman, <i>italic</i> , bold , condensed, expanded, etc.
TYPOGRAPHER	Person who sets type.
TYPOGRAPHY	The art and process of working with and printing from type. Today's technology, by mechanizing much of the art, is rapidly making typography a science.
UNJUSTIFIED TYPE	Lines of type set at different lengths which align on one side (left or right) and are ragged on the other.
UPPERCASE	Capital letters of a type font: A, B, C, etc.
VERSO	Left-hand page of a book. Page 2 is always on a verso, and versos always bear even-numbered folios. Opposite of RECTO.
WEIGHT	In composition, the variation of a letterform: light, regular, bold , <i>italic</i> , etc.
WIDOW	End of a paragraph or of a column of reading matter that is undesirably short.
WORDSPACE	Space between words.
WORDSPACING	In composition, adding space between words to fill out line of type to given measure.
WRAP-AROUND	In phototypesetting, automatic line-wrapping of the text of a sentence.

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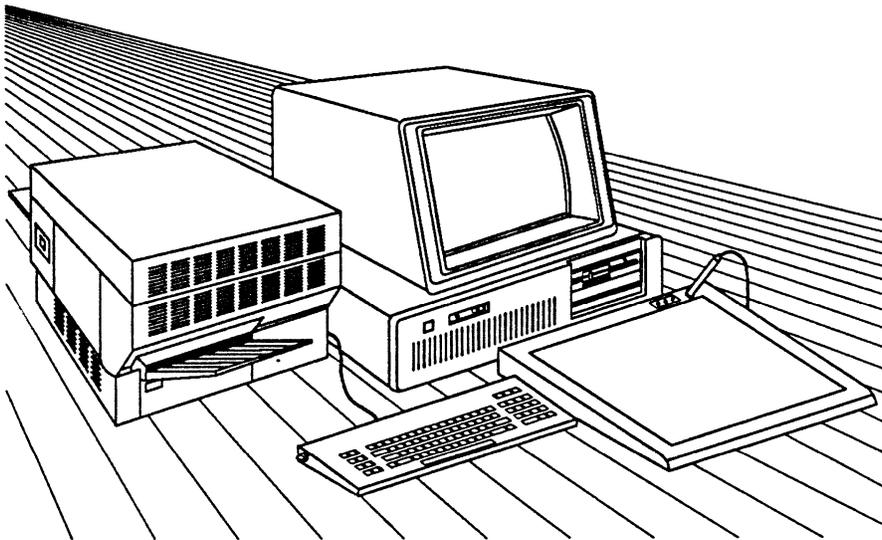
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MECCA III

Electronic Desktop Publishing System

USER'S GUIDE



VOLUME 2

BATCH COMPOSITION

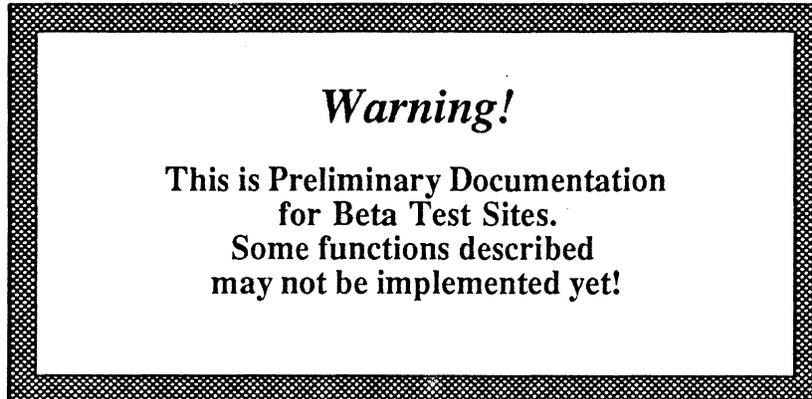
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Written by Debra Poll.



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BATCH COMPOSITION COMMANDS

Listed in Alphabetical Order

Command	Name	Arguments	Parameters	Page
<code>\B^</code>	Bold	None		3/2
<code>\BC^</code>	Backup Center	None		3/3
<code>\BF^</code>	Backup Flush	None		3/4
<code>\BI^</code>	Bold Italic	None		3/5
<code>\BLKBn</code>	Block Begin	n	1 to 99	4/2
<code>\BLKE</code>	Block End	None		4/2
<code>\BLKXn string \END</code>	Block Setup	n	1 to 99 string WIDTH, DEPTH, VCM, XPOS, YPOS, PAGE, TM, BM, LM, RM	1/18
<code>\CBI y/n</code>	Column Balance Indicator	y/n		4/3
<code>\CBT dpts</code>	Column Balance Tolerance	dpts		4/4
<code>\CD n \END</code>	Column Description	n	1 to 99	4/5
<code>\CVJ y/n</code>	Column Vertical Justification	y/n		4/6
<code>\CF aa^</code>	Change Font	aa	GE, TI	3/6
<code>\CM aa^</code>	Change Mode	aa	FL, FR, CE, JU	3/7
<code>\COLXn string \END</code>	Column Setup	n	1 to 99 string MINX, MAXX, MINY, MAXY, LB	1/22
<code>\D^</code>	Down for Subscript	None		3/8
<code>\DNdpts^</code>	Move Baseline Down	dpts		3/9
<code>\EFORM</code>	End Merged Form	None		2/3
<code>\ETP</code>	End Tab Position	None		2/17
<code>\F</code>	First Point Size Reset	None		3/10
<code>\FE</code>	Footnote End	None		4/8
<code>\FIGURE string \END</code>	Merge Figure	string	NAME, POS, WIDTH, DEPTH, SIZE, LB, LA, ORN	2/4
<code>\FILL</code>	Leader Fill	None		3/11
<code>\FJ^</code>	Force Justify Line	None		3/12
<code>\FN^</code>	Footnote Reference	None		4/7
<code>\FS</code>	Footnote Start	None		4/8

BATCH COMPOSITION COMMANDS

Listed in Alphabetical Order (*Continued*)

Command	Name	Arguments	Parameters	Page
\HD <i>n</i>	Heading	<i>n</i>	1 to 31	2/6
\HDX <i>n string</i> \END	Heading Style Setup	<i>n</i> string	1 to 31 TEXT, LM, RM, CM, LB, LA, UL, NP, NO, IL1, IL2, NLI, EA, ETX, ECM, ELB, ERB	1/25
\HMAX <i>n</i>	Maximum Word Spacing	<i>n</i>	0 to 99	1/30
\HMIN <i>n</i>	Minimum Word Spacing	<i>n</i>	0 to 99	1/31
\HNOM <i>n</i>	Normal Word Spacing	<i>n</i>	0 to 99	1/32
\HR <i>dpts,dpts^</i>	Horizontal Rule	<i>dpts,dpts^</i>		3/13
\HSA <i>dpts^</i>	Horizontal Space Relative	<i>dpts^</i>		3/14
\HSPA <i>dpts^</i>	Horizontal Space Absolute	<i>dpts^</i>		3/15
\HSZ <i>dpts^</i>	Horizontal Size	<i>dpts^</i>		3/16
\HYMA <i>n</i>	Characters After Hyphen	<i>n</i>	0 to 15	1/33
\HYMB <i>n</i>	Characters Before Hyphen	<i>n</i>	0 to 15	1/34
\HYMC <i>n</i>	Consecutive Hyphens Allowed	<i>n</i>	0 to 5	1/35
\HYML <i>n</i>	Hyphenation Word Length	<i>n</i>	0 to 30	1/36
\I^	Italic	None		3/17
\KERN <i>y/n</i>	Kerning Switch	<i>y/n</i>		1/37
\KSIZ <i>dpts</i>	Kerning Size	<i>dpts</i>		1/38
\L^	Light	None		3/18
\LI^	Light Italic	None		3/19
\LNOM <i>n</i>	Letter Spacing Value	<i>n</i>	0 to 99	1/40
\LS <i>y/n</i>	Letter Spacing Switch	<i>y/n</i>		1/41
\MFORM	Merge Form	string	DWGFIL, POSFIL, KEY, NBYT, DBYT, XPOS, YPOS, ORN, EFMT	2/8
\N^	Normal	None		3/20
\NC^	Next Column	None		4/9
\NEP^	New Even Page	None		4/10
\NL^	New Line	None		3/21
\NOP^	New Odd Page	None		4/11
\NP^	New Page	None		4/12

BATCH COMPOSITION COMMANDS

Listed in Alphabetical Order (*Continued*)

Command	Name	Arguments	Parameters	Page
#P	Sequential Page Numbering	None		4/13
\Pn	Paragraph Start	n	1 to 31	2/11
\PDEF <i>string</i> \END	Page Definition Setup	string	WIDTH, DEPTH, LM, RM, DUPLEX, ORN, CUTS	1/42
\PFMT <i>filename</i> \END ...	Page Format	<i>filename</i>		4/14
\PFUTn	Page Foot	n	1 to 6	2/13
\PFUTXn <i>string</i> \END	Page Foot Setup	n	1 to 6	1/45
		string	TEXT, LM, RM, CM, YPOS, UL, IL1, IL2, NLI, EA, ETX, ELB, ERB, ECM	
\PHEDn	Page Heading	n	1 to 6	2/15
\PHEDXn <i>string</i> \END ...	Page Heading Style Setup	n	1 to 6	1/49
		string	TEXT, LM, RM, CM, YPOS, UL, IL1, IL2, NLI, EA, ETX, ELB, ERB, ECM	
\PN n	Page Number	n	1 to 9999	4/16
\PSZ <i>dpts</i> ^	Point Size	<i>dpts</i>		3/22
\PXn <i>string</i> \END	Paragraph Style Setup	n	1 to 31	1/53
		string	TEXT, LM, RM, LB, CM, LA, UL, IL1, IL2, NLI, EA, ETX, ELB, ERB, ECM	
\R	Reset To Previous Level	None		3/23
\STP	Set Tab Position Ruler	tabn	1 to 99	2/17
\STPSV	Save Tab Position Ruler	#n tabn	1 to 99	1/12
\TBXn <i>string</i> \END	Tab Setup	n	1 to 99	1/63
		string	TEXT, LM, RM, CM, VCM, GUTL, GUTR, GUTT, GUTB	
\TE	Table End	None		2/17
\TSn	Table Start	n	1 to 20	2/17

BATCH COMPOSITION COMMANDS

Listed in Alphabetical Order (*Continued*)

Command	Name	Arguments	Parameters	Page
\TSX <i>n string</i> \END	Table Style Setup	<i>n</i>	1 to 20 string COMP, ROWDEPTH, ROWLEAD, LB, LA, RULES, TBLL, TBRL, TBXL	1/66
\TXT <i>n string</i> \END	Text Style Setup	<i>n</i>	1 to 32 string FONT, STYLE, HSIZE, VSIZE, LEAD	1/69
\U [^]	Up For Superscript	None		3/24
\UE [^]	Underline End	None		3/25
\ULPOS <i>n</i>	Underline Position	<i>n</i>	0 to 100	1/71
\ULSIZ <i>dpts</i>	Underline Weight	<i>dpts</i>	0000 to 0100	1/73
\UP <i>dpts</i> [^]	Move Baseline Up	<i>dpts</i>		3/26
\US [^]	Underline Start	None		3/27
\VS <i>dpts</i> [^]	Vertical Space	<i>dpts</i>		3/28
\VSZ <i>dpts</i> [^]	Vertical Size	<i>dpts</i>		3/29
\XB [^]	Extra Bold	None		3/30
\XBI [^]	Extra Bold Italic	None		3/31
*	Comment	None		4/17
\-	Discretionary Hyphen	None		3/32
\nnn [^]	Special Characters	None		3/33

Introduction

What Batch Composition Means

Batch composition files are text files processed through a pagination program on MECCA III which creates final artwork.

The composition system produces pages suitable for printing. It is flexible enough to produce almost any kind of publication by creating and/or modifying page format files (setup files) which hold the specific page style commands for the document.

Once the user completes the input and editing procedures, the batch program processes all elements and prints a paginated proof of the document. Page breaking and page numbers are handled automatically. Corrections and changes can be quickly made by editing the batch file and reprocessing.

This document will teach you how to use the "embedded codes" needed to prepare text files that MECCA III can read to provide multiple page documents ready for printing and how to use the Batch Commands to alter the results. It contains a complete listing of each command and an example of how to use it.

When Should You Use Batch Composition

Batch composition was developed to assist in the production of large volumes of printed materials. Input and editing of text is computer-assisted using the word processing capabilities of the system during data capture, inserting batch composition commands and subsequent revisions.

The main advantages of batch files are: 1) automatic pagination for initial and revision passes of the document; 2) text input and editing with computer-assisted word processing capabilities; 3) merged text and graphics; 4) spelling check program; 5) hyphenation, and 6) the ability to use off-line file preparation by keyboarding and marking up files on other systems and moving them to the MECCA III to be processed.

Deciding whether to use the Batch Composition side of MECCA III or the Graphics portion involves several factors. Ask yourself these questions: 1) Is the document lengthy with text that has to be broken into pages? 2) Is the document going to need revision passes? 3) Would the Batch Composition system automatic page numbering, running heads and feet, spelling check, etc. be an advantage? 4) Will using a stored format for the main setups be easier to manage? 5) For a lengthy file, would several files holding multiple pages, be better than one file for each page.

Answering "yes" to any of the questions above would probably mean that Batch Composition is the way to go.

When Should You NOT Use Batch Composition

Naturally, you can't draw a graphic with batch composition, so if the graphics portion of the page outweighs the text portion, then you are better off using the graphics package. (Now this is unless your document needs constant page number revisions then you might want to consider Merging Graphics into a Batch File with page numbers.) Also, if the page is a one time piece and the setup would be such that the job could be completed in the same time frame using the Text Functions of the graphics package. It would also be easier to use the graphics portion if special designing needs require you to see where each word and line is falling.

The Four Types of Commands

MECCA III has an extended command set for special composition effects. Through the use of explicit "mark-up" commands, format control can be achieved through a stored Page Format or can be momentarily superseded to enhance a word, phrase or paragraph.

There are four types of commands. They are Setup commands, Text Item commands, Immediate commands, and Pagination commands. Each has a chapter dedicated to it in this book.

Chapter 1: Setup Commands are necessary to define the page properties and type characteristics. These commands are used in creating format files to define specific page and document styles.

Once defined, the information is stored in a format file for later retrieval through the \PFMT Pagination command.

Chapter 2: Text Item Commands identify the strings of text and compose them as directed by corresponding Setup commands.

Chapter 3: Immediate Commands are used for special effects such as emphasis on words, phrases or paragraphs. They are called Immediate commands because they take effect immediately. When using a special effect command, insert the desired command at the position in the text where the effect should begin. Use another command to reset the effect back at the point where the effect should cease.

All Immediate commands are automatically canceled each time a new Text Item command begins (i.e., heading, paragraph, table).

Chapter 4: Pagination Commands are specific instructions to the composition system. They instruct the system to read a format file or break to a new page where the command is encountered. They give the user control over page breaks, column breaks, page numbering, etc.

Some commands require arguments. When arguments are in tenths of points, the unit of measure is a value in decipoints (1/723"):

$$1 \text{ Pica} = 12 \text{ points} = 120 \text{ decipoints}$$

and

$$723 \text{ decipoints} = 1 \text{ inch.}$$

In this reference the following conventions are used:

aa = alphabetic argument, a word, phrase, or filename

n = numeric argument, 1 through 9999

dpts = decipoints (tenths of points)

y/n = Y (yes) or N (no)

string = multiple parameter arguments

For step-by-step instructions on creating and composing batch files read "Chapter 6: Using Batch Files" found in Volume 1.

WHAT SETUP COMMANDS ARE

Setup commands are necessary to define the page properties and type characteristics. These commands are used to create format files to define specific page and document styles.

Once defined, the information is stored in a format file for later retrieval through the \PFMT PAGE FORMAT Pagination command.

Formats are used to standardize specific page appearance. A format contains setup definitions for typefaces, paragraph styles, heading styles, and other page characteristics such as page size, number of columns, column size, margins, page heading/foot placement and dozens of other variables. Once the page format is defined, it is stored in the system and can be referenced by the \PFMT PAGE FORMAT Pagination command.

Setup Commands:

- Block \BLKX
- Column \COLX
- Heading \HDX
- Maximum Word Spacing \HMAX
- Minimum Word Spacing \HMIN
- Normal Word Spacing \HNOM
- Characters After Hyphen \HYMA
- Characters Before Hyphen \HYMB
- Consecutive Hyphens Allowed \HYMC
- Hyphenation Word Length \HYML
- Kerning Switch \KERN
- Kerning Size \KSIZ
- Letter Spacing Value \LNOM
- Letter Spacing Switch \LS
- Page Definition \PDEF
- Page Foot \PFUTX
- Page Heading \PHEDX
- Paragraph Style \PX
- Tab \TBX
- Table Style \TSX
- Text Style \TXT
- Underline Position \ULPOS
- Underline Weight \ULSIZ

THE IMPORTANCE OF PAGE FORMATS

Page formats are files created to store specific page style setup commands.

The format file contains the main setups for the document, such as page size, column sizes, font and point sizes, leading, paragraph margins, and vertical leading throughout the document. Also, hyphenation controls, underlining controls, letter spacing and kerning (if needed), are stored in format files.

These commands once defined are stored in a file. Using the \PFMT Page Format Pagination command, that setup file is read and processed when the document file is composed. This allows setups to be maintained in one file, in one location.

For example, you may have several files in your document, one for each chapter. When a change in the setup is needed, like changing the point size, it can be done easily and controlled by having one Page Format file with all document files for that project referencing that same format file.

Format files do not necessarily have to be directed at Page setups only. If there are table setups that can be placed in a format file and referenced through that table format file using the \PFMT command, it makes the document file easier to edit without unnecessary mark-up getting in the way.

Page format files can also be copied and modified to build a library of stored setups. This naturally increases productivity.

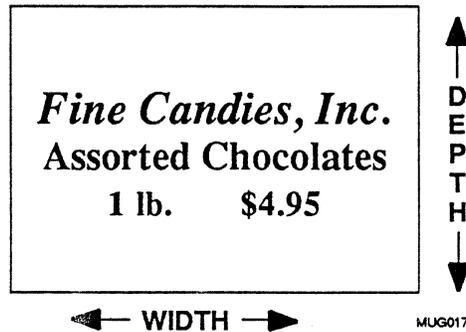
BLOCK

Information

A BLOCK is a fixed area (width, depth and position) defined by the user to place Text Items within, to keep them together. For example, the labels on page 6 were created using blocks.

Each label has an area of its own called a BLOCK. Each label consists of four text items that must be kept together: the company name, the candy type, the pounds per box and the price. Since there are eight labels on the page, there are eight blocks or areas to define.

Let's take a closer look at the top left label (we have drawn imaginary borders around the label to help with measuring):



Using this label, let's begin developing our BLOCK Setup command:

```
\BLKXn WIDTH=dpts DEPTH=dpts VCM=a a \END
```

Since it is the first block on the page, name it BLOCK 1 (\BLKX1):

WIDTH = measure total width of label in tenths of points

DEPTH = measure total depth of label in tenths of points

VCM = all four Text Items should be *centered vertically*

```
\BLKX1 WIDTH=1500 DEPTH=1080 VCM=CE \END
```

(Continued on next page.)

BLOCK

Information (*Continued*)

Examples of Vertical Composition Modes

This is a sample.
This is a sample.
This is a sample.
This is a sample.

CENTERED
"CE"

This is a sample.
This is a sample.
This is a sample.
This is a sample.

FLUSH TOP
"FT"

This is a sample.
This is a sample.
This is a sample.
This is a sample.

FLUSH BOTTOM
"FB"

This is a sample.

This is a sample.

This is a sample.

This is a sample.

SPACE OUT
"SP"

MUG010

VCM = is the vertical composition control for group placement of the Text Items within the Block.

For most cases, centering text vertically (CE) in the Block is ideal. For some special cases, you may wish to have the copy pushed to the top (FT) or bottom (FB) of the Block. To exactly fill the Block, so that the copy touches both the top and the bottom of the Block, indicate (SP) for Space Out.

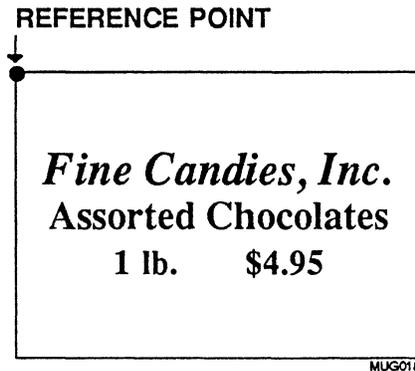
(Continued on next page.)

BLOCK

Information (*Continued*)

Now let's discuss the positioning of each label on the page. This is the BLOCK X and Y positions.

Each Block has a positioning reference point. That point is the upper left corner of the Block.



To decide where the fixed position of the Block is to be on the page, the BLOCK X and Y coordinates must be defined. These determine where the upper left corner of the Block is going to be positioned:

XPOS = measure from left edge of page to left side of Block

YPOS = measure from bottom of page to top of Block

Measure the XPOS and YPOS of the top left label (BLOCK 1) in the sample to complete the BLOCK Setup command:

```
\BLKX1 XPOS=1500 YPOS=6000 \END
```

For a look at the complete format and marked-up data file which created the Sample of Block Usage on the next page, see "Volume 4 — Example of a Batch File Using Blocks."

(Continued on next page.)

BLOCK

Information (*Continued*)

Sample of BLOCK Usage

<p><i>Fine Candies, Inc.</i> Assorted Chocolates 1 lb. \$4.95</p>	<p><i>Fine Candies, Inc.</i> Assorted Chocolates 2 lbs. \$9.95</p>
<p><i>Fine Candies, Inc.</i> Assorted Creams 1 lb. \$4.95</p>	<p><i>Fine Candies, Inc.</i> Assorted Creams 2 lb. \$9.95</p>
<p><i>Fine Candies, Inc.</i> Dark Chocolates 1 lb. \$4.95</p>	<p><i>Fine Candies, Inc.</i> Dark Chocolates 2 lbs. \$9.95</p>
<p><i>Fine Candies, Inc.</i> Chocolate Covered Nuts 1 lb. \$4.95</p>	<p><i>Fine Candies, Inc.</i> Chocolate Covered Nuts 2 lbs. \$9.95</p>

MUG019

PAGE HEADERS/FEET Information

Pages are not complete without page headings (such as the document name, page number, date of publication, etc.) and/or page feet (such as a notice, disclaimer or page number). Normally, a page heading is set on each page of the document.

There are six each of the PAGE HEADING STYLE and of the PAGE FOOT STYLE Setup commands. These represent the six common positions for placement of the heads and feet.

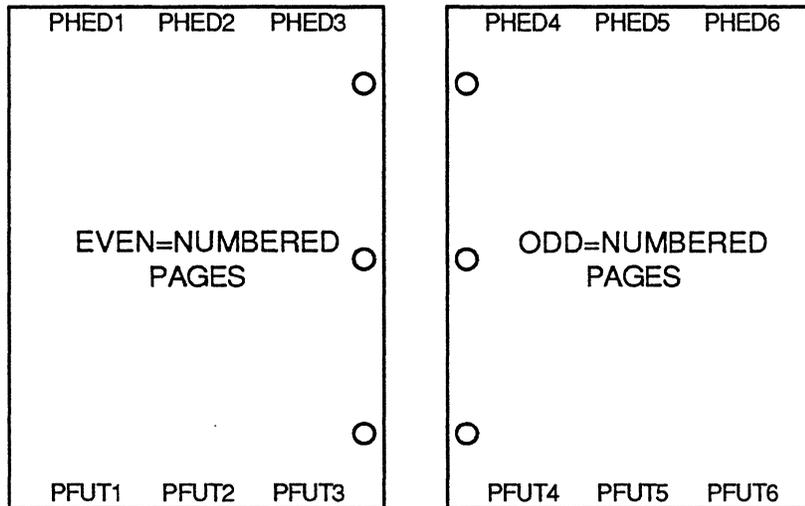
It is customary to “flip-flop” the headings/feet for two-sided printing. For this reason, Page Head/Foot positions 1, 2 and 3 will only set on EVEN pages and Page Head/Foot positions 4, 5 and 6 will only set on ODD pages.

The first page in every file is an ODD page (Page Number=1) unless specified differently by using the PAGE NUMBER Pagination command (\PN). When using the PAGE NUMBER command, the pages are EVEN and ODD according to their page numbers.

The illustration on the next page shows the position for each of the \PHED and \PFUT Text Items.

PAGE HEADERS/FEET Information (*Continued*)

Page Heading/Foot Placement



MUG001

Note: Commands 1, 2 and 3 will typeset *only* on EVEN pages.
Commands 4, 5 and 6 will typeset *only* on ODD pages.

See Also: `\PHEDX n`
PAGE HEADING STYLE Setup

`\PFUTX n`
PAGE FOOT STYLE Setup

`\PHED n`
PAGE HEADING Text Item

`\PFUT n`
PAGE FOOT Text Item

TABLE

Information

A table is defined as multiple columns of Text Items which are associated in rows. If a row has three or more columns, it is considered a table. Each column is assigned a number which references that column to its individual TAB Setup command (\TBX*n*).

Example of Columns and Rows

	COLUMN 1	COLUMN 2	COLUMN 3
ROW 1	X	X	X
ROW 2	X	X	X
ROW 3	X	X	X
ROW 4	X	X	X

MJG002

When typing tabular text, you must define a tab ruler at the top of your table. The tab ruler shows the starting character position of each tab field.

It is important that every item in each row, in each column, fit in the tab space allowed. *Do not type over a tab position.* If an item does not fit, either break it into multiple lines or move the START TAB POSITION RULER numbers to increase the characters allowed in that tab.

(Continued on next page.)

TABLE Information (*Continued*)

Each and every table must utilize the following table commands:

<code>\TSXn</code>	TABLE Setup command
<code>\TSn</code>	TABLE START Text Item command
<code>\STP</code> <code><i>tabn</i></code>	START TAB POSITION RULER
<code>\ETP</code>	END TAB POSITIONS
<code>\TE</code>	TABLE END

Note: The `\STP`, `\ETP`, and `\TE` commands are part of the TABLE START command (`\TS n`).

The SAVE TAB POSITION RULER command (`\STPSV`) and the RULED Table commands discussed later in "Table Information" are optional.

Immediate Commands such as BOLD (`\B^`), SPECIAL CHARACTER (`\nnn^`), HORIZONTAL SIZE (`\HSZ`), etc., can be used within a table.

A table must be completed with a TABLE END (`\TE`) before entering into another Text Item command such as PARAGRAPH (`\P n`).

(Continued on next page.)

TABLE

Information (*Continued*)

Example: *Table Input:*

```

\TSX1 COMP=LINE ROWDEPTH=FIXED ROWLEAD=0120 LB=0240 LA=0000\END

\TBX1 TEXT=3 LM=0000 RM=1000 CM=FL\END
\TBX2 TEXT=3 LM=1000 RM=2000 CM=CE\END
\TBX3 TEXT=3 LM=2000 RM=3000 CM=FR\END

\TS1
\STP
      1          2          3
      TAB POSITION 1      TAB POSITION 2      TAB POSITION 3
      FLUSH LEFT        CENTERED          FLUSH RIGHT
      WITHIN ONE-      WITHIN ONE-      WITHIN ONE-
      THIRD OF         THIRD OF         THIRD OF
      THE MEASURE     THE MEASURE     THE MEASURE

\ETP
\TE

```

Example: *Table Output:*

```

TAB POSITION 1          TAB POSITION 2          TAB POSITION 3
FLUSH LEFT           CENTERED              FLUSH RIGHT
WITHIN ONE-         WITHIN ONE-         WITHIN ONE-
THIRD OF            THIRD OF            THIRD OF
THE MEASURE        THE MEASURE        THE MEASURE

```

(Continued on next page.)

SAVE TAB POSITION RULER

Table Information (*Continued*)

\STPSV

Purpose: This command is used to store \STP rulers (if needed) to change the column tab positions within a table. The tab ruler positions immediately follow the \STPSV command.

Format: \STPSV
#*n* *tabn* *tabn* *tabn*

Arguments: *n* is a number from 1 to 99. This number is the SAVE TAB POSITION RULER number assigned to each individual ruler and is referenced in the table when switching from one set of tab rulers to another. During table entry, the saved position ruler is recalled by entering the number (1, 2, etc., without the # sign) in the first character position at the left margin of the table.

Note: The first \STP of any table is referenced as ruler 0 (zero).

tabn is the tab positions in the table. This number is the TAB Setup command number assigned to that particular tab (TBX1, TBX2 or TBX3). The numbers do not necessarily have to be consecutive. The \STPSV tab number string is the ruler line which directs the positioning of the text following.

(Continued on next page.)

SAVE TAB POSITION RULER

Table Information (*Continued*)

\STPSV

Example: *Table Output:*

TAB POSITION 1 - CENTERED HEADING ACROSS TABLE

TAB POSITION 2
CENTERED WITHIN
HALF OF THE
MEASURE

TAB POSITION 3
CENTERED WITHIN
HALF OF THE
MEASURE

SWITCHING BACK TO TAB POSITION 1

TAB POSITION 4
FLUSH LEFT
WITHIN ONE-
THIRD OF
THE MEASURE

TAB POSITION 5
CENTERED
WITHIN ONE-
THIRD OF
THE MEASURE

TAB POSITION 6
FLUSH RIGHT
WITHIN ONE-
THIRD OF
THE MEASURE

SWITCHING BACK TO TAB POSITION 1

Remarks: Compare the *Table Input* example with the *Table Output* example. As you can see, the input file resembles the output. It is important that every item in each column fit the space allowed in the SAVE TAB POSITION RULER for that column. *Do not type over a tab position.* If an item does not fit, either break it into multiple lines or move the TAB RULER numbers to increase the characters allowed in that tab field.

Related

Command: \TS*n*
TABLE START *Text Item*

(Continued on next page.)

RULED TABLES

Table Information (*Continued*)

Ruled tables are created just like unruled tables except for the following ruling commands. These commands are used two ways: 1) in the first character position of the row, or 2) aligned under the first digit of the \STP number in the row. This allows two effects: 1) to draw a rule across the complete table, or 2) to draw a rule for that tab width only.

Arguments:

- | vertical rule
- _ horizontal rule
- + connecting vertical and horizontal rules

The example on the following page shows horizontal and vertical rules connected using the + and using the _ with the | .

To box a table in, use the parameter RULES=TBLR (top, bottom, left and right) in the TABLE Setup command (\TSX*n*). This will draw a rule around the perimeter of the table. See "TABLE STYLE Setup command (\TSX*n*)" for more information.

(Continued on next page.)

RULED TABLES

Table Information (*Continued*)

Example: *Table Output:*

TAB POSITION 1 - CENTERED HEADING ACROSS TABLE		
TAB POSITION 2 CENTERED WITHIN HALF OF THE MEASURE	TAB POSITION 3 CENTERED WITHIN HALF OF THE MEASURE	
SWITCHING BACK TO TAB POSITION 1		
TAB POSITION 4 FLUSH LEFT WITHIN ONE- THIRD OF THE MEASURE	TAB POSITION 5 CENTERED WITHIN ONE- THIRD OF THE MEASURE	TAB POSITION 6 FLUSH RIGHT WITHIN ONE- THIRD OF THE MEASURE
SWITCHING BACK TO TAB POSITION 1		

Note: When setting ruled tables, the leading parameters TBLL, TBRL and TBXL in the TABLE Setup command (\TSX*n*) are in effect. See “Chapter 6 — How To Measure Leading” for examples of usage.

BLOCK**Setup Command****\BLKXn**

Purpose: This command allows the user to place Text Items in a fixed area by surrounding them with a BLOCK. Using the string parameters below, the Block is defined (width, depth and position) for later recall through the BLOCK BEGIN command. A Block is given exact coordinates for a fixed position on the page.

Warning: The Block area defined by the user in the BLOCK Setup command must be large enough to accommodate the Text Items surrounded by the BLOCK BEGIN and BLOCK END commands.

Format: \BLKXn *string* \END

Arguments: *n* is a number from 1 to 99
and
string is the BLOCK Number assigned to each individual BLOCK Setup command and referenced through its corresponding BLOCK BEGIN command.

string

WIDTH= <i>dpts</i>	Width of Block
DEPTH= <i>dpts</i>	Depth of Block
VCM= <i>aa</i>	Vertical Composition Mode
XPOS= <i>dpts</i>	X Position of Block on Page
YPOS= <i>dpts</i>	Y Position of Block on Page
PAGE= <i>aa</i>	Pagination Type
TM= <i>dpts</i>	Top Margin Block Gutter
BM= <i>dpts</i>	Bottom Margin Block Gutter
LM= <i>dpts</i>	Left Margin Block Gutter
RM= <i>dpts</i>	Right Margin Block Gutter

(Continued on next page.)

BLOCK**Setup Command (*Continued*)**

\BLKXn

Usage: Blocks are used to position items on a page. This setup command allows 99 blocks to be defined *within each separate format file* to be predefined and stored for later recall using the BLOCK BEGIN command. (See "Using Blocks" for an example of usage.)

Remarks:

WIDTH= is the total width of the area in tenths of points.

DEPTH= is the total depth of the area in tenths of points.

VCM= is the vertical composition control for group placement of the Text Items within the Block.

CE Center

FT Flush Top

FB Flush Bottom

SP Space Out from Top of Block to Bottom of Block

For most cases, centering text vertically (CE) in the Block is ideal. For some special cases, you may wish to have the copy pushed to the top (FT) or bottom (FB) of the Block. To fill the Block so that the copy spreads between the top and bottom of the Block, indicate (SP) for Space Out.

XPOS= is the coordinate, in tenths of points, from left edge of page to left side of the Block.

YPOS= is the coordinate, in tenths of points, from bottom edge of page to top side of the Block.

When measuring for the X and Y coordinates of a block, the reference point of the block is the upper left corner.

(Continued on next page.)

BLOCK**Setup Command (*Continued*)****\BLKX*n***

-
- PAGE*= Pagination type. (There is only one type at this time.)
- FIXED* place the Block on the X and Y coordinates specified by the XPOS and YPOS arguments.
- TM* = is the amount of blank space at the top of the Block to be reserved as a gutter. Input in tenths of points and use only if needed.
- BM* = is the amount of blank space at the bottom of the Block to be reserved as a gutter. Input in tenths of points and use only if needed.
- LM* = is the amount of blank space at the left of the block to be reserved as a gutter. Input in tenths of points and use only if needed.
- RM* = is the amount of blank space at the right of the block to be reserved as a gutter. Input in tenths of points and use only if needed.

See Also: “Using Blocks” at the front of this chapter and
 “Volume 4 - Example of a Batch File Using Blocks”

**Pagination
Commands:**

\BLKB*n*
 BLOCK BEGIN

\BLKE
 BLOCK END

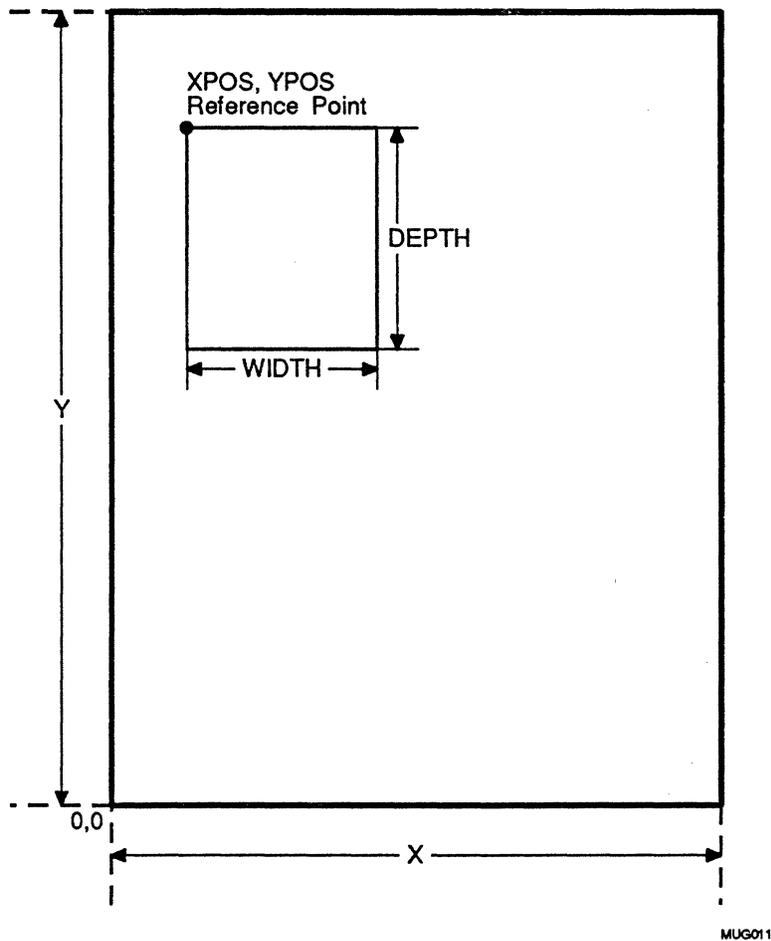
(Continued on next page.)

BLOCK

Setup Command (*Continued*)

\BLKXn

Example of How To Position a Block



COLUMN

Setup Command

\COLX n

Purpose: To specify column boundaries on a page. Column boundaries are needed to assist in the pagination of Text Items such as paragraphs, headings and tables. Using the string parameters below, the column descriptions are defined for later recall through the COLUMN DESCRIPTION command (\CD).

Format: \COLX n *string* \END

Arguments: n is the COLUMN Number assigned to each individual COLUMN Setup command and is referenced by its corresponding COLUMN DESCRIPTION (\CD) Pagination command and is a number from 1 to 99.

string

MINX=*dpts* Minimum X Position of Column
 MAXX=*dpts* Maximum X Position of Column
 MINY=*dpts* Minimum Y Position of Column
 MAXY=*dpts* Maximum Y Position of Column
 LB=*dpts* Lead Before Column

Example: \COLX01 MINX=0540 MAXX=2940 MINY=0723
 MAXY=5422 LB=0723 \END

Remarks: *MINX=* is the coordinate, in tenths of points, from left edge of page to left side of the column.
MAXX= is the coordinate, in tenths of points, from left edge of page to right side of the column.
MINY= is the coordinate, in tenths of points, from bottom edge of page to bottom of the column.
MAXY= is the coordinate, in tenths of points, from bottom edge of page to top of the column.

(Continued on next page.)

COLUMN

Setup Command (*Continued*)

\COLX n

LB = is the amount of leading, in tenths of points, to be placed before a column is set. Appears only when switching from one column description to another on the same page.

Note: When a paragraph, heading or table starts at the top of a column, the lead before value of that Text Item is ignored. The top of the type is flush with the MAXY value in the COLX. The vertical space value is taken from the LEAD of the \TXT command in effect. Also, the lead after of the Text Item is dropped when a paragraph, etc., falls at the bottom of the column. This allows the tops and bottoms of the columns to balance.

Pagination

Command: \CD *n*, *n* \END
COLUMN DESCRIPTION

See Also: \PDEF
PAGE DEFINITION Setup

Note: The argument *LM* (*Left Margin*) in the PAGE DEFINITION Setup command (\PDEF) affects the X coordinates of this command. If in the PAGE DEFINITION Setup command the argument LM has a value other than 0, the COLUMN X position is offset by that amount.

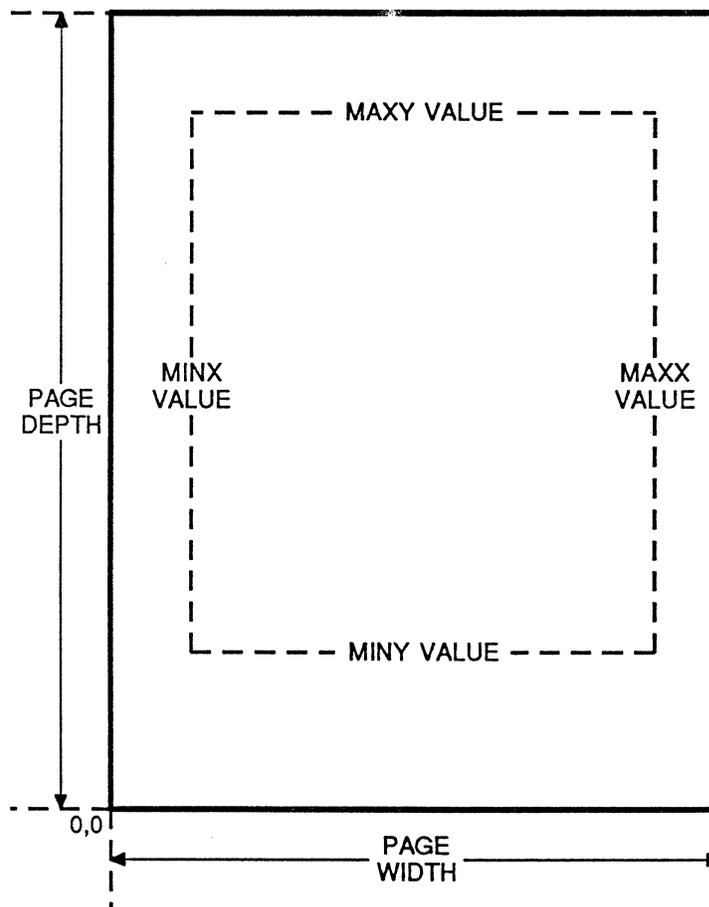
(Continued on next page.)

COLUMN

Setup Command (*Continued*)

\COLX n

Illustration of Column Boundaries



MUG008

Note: The argument *LM* (*Left Margin*) in the PAGE DEFINITION Setup command (\PDEF) affects the X coordinates of this command. If in the PAGE DEFINITION Setup command the argument LM has a value other than 0, the COLUMN X position is offset by that amount.

HEADING STYLE**Setup Command****\HDX n**

Purpose: Enables user to define up to 31 heading styles. The values specified are stored and recalled later through the respective HEADING Text Item command.

Headings are used during pagination to help determine column and page breaks. For example, the composition program does not allow headings to fall at the bottom of a column.

Format: \HDX n *string* \END

Arguments: n is a number from 1 to 31. This allows 31 different HEADING STYLE Setup commands to be assigned and saved for later recall.

string

Required Parameters:

TEXT= n	Text Style Command Referenced
LM= $dpts$	Left Margin
RM= $dpts$	Right Margin
CM= aa	Composition Mode
LB= $dpts$	Leading Before Heading
LA= $dpts$	Leading After Heading

Optional Parameters:

UL= y/n	Underline Heading Switch
IL1= $dpts$	First Indent Value
IL2= $dpts$	Second Indent Value
NLI= n	Number of Times to Use First Value
EA= y/n	Enumeration Allowed Switch
ETX= n	Enumeration Text Style Command Referenced
ELB= $dpts$	Enumeration Left Boundary
ERB= $dpts$	Enumeration Right Boundary
ECM= aa	Enumeration Composition Mode

(Continued on next page.)

HEADING STYLE**Setup Command (*Continued*)**

\HDXn

Remarks:	<i>TEXT</i> =	is the TEXT STYLE Setup command number assigned to this heading.
	<i>LM</i> =	is the left margin of the heading, in tenths of points, measuring from the left edge of the column. If the user wants the heading to fall flush with the left edge of the column the argument would be 0.
	<i>RM</i> =	is the right margin, in tenths of points, measuring from the left edge of the column. This usually has the same value as that for the column width.
	<i>CM</i> =	is the composition mode of the heading. This controls where the heading will set between the left and right margins. The options are: <i>CE</i> Center <i>FL</i> Flush to the Left Margin <i>FR</i> Flush to the Right Margin <i>JU</i> Justify at Both Margins
	<i>LB</i> =	is the white space before the heading is set. Measure from baseline of the previous item to baseline of the heading. See "Chapter 6 — How To Measure Leading" for more information on this subject.
	<i>LA</i> =	This parameter allows the user to place extra leading after a chapter heading if needed. See "Chapter 6 — How To Measure Leading" for more information on this subject.
	<i>UL</i> =	this parameter is optional. It will underline all words in that particular heading. See ULPOS and ULSIZ Setup commands for controls of underline baseline positioning and rule weight of the underline.

(Continued on next page.)

HEADING STYLE

Setup Command (*Continued*)

\HDX n

NP = this parameter is optional. It will force a new page to begin at each occurrence of the heading.

NO = this parameter is optional. It will force a new ODD page to begin at each occurrence of the heading. This parameter may cause blank pages to be set.

Example: \HDX1 TEXT=1 LM=0000 RM=5040 CM=FL LB=0360
LA=0000 UL=Y\END

This will output a heading in the font and style defined in the TEXT STYLE Setup command number 1 (TEXT=1). It will be flush to the left edge of the column (LM=0000). If the heading is longer than 504 points (RM=5040), it will wrap back down to the left edge of the column (CM=FL). It will drop down 36 points when following another Text Item (LB=0360) and will not force any extra leading to follow it (LA=0000). This heading will also be underlined (UL=Y).

Optional Parameters:

UL = This parameter is optional. It will underscore all words in that heading. See ULPOS and ULSIZ Setup commands for controls of underline baseline positioning and rule weight of the underline.

IL1 = This parameter is optional. The First Indent Value is the amount, in tenths of points, you wish to indent a line(s) of the heading from its left margin.

IL2 = This parameter is optional. It gives the capability to have a second indentation value to create a hanging heading effect, etc. It is used in conjunction with the IL1 and NLI parameters.

(Continued on next page.)

HEADING STYLE**Setup Command (*Continued*)**

\HDXn

NLI= This parameter is optional. Inputs how many lines of the heading are to be indented at value number one (IL1). The rest of the heading will use indent value number two (IL2).

See Also: PARAGRAPH STYLE Setup Command for the IL1, IL2 and NLI parameters and examples.

Enumerated Headings:

What is referred to in standard typing as a simple outline style is called, in MECCA III as, "enumerated." An enumerated heading is one with a number, word or other item in the left margin of the indented heading.

I. THIS IS AN ENUMERATED HEADING.**Enumeration Parameters:**

EA= is the switch that allows use of the following enumeration parameters: *Y* for Yes and *N* for No. *If you do not turn on the enumeration switch (EA=Y), all enumeration parameters will be ignored.* EA switch must precede all other enumeration parameters.

ETX= is the number of the TEXT STYLE Setup command you want the enumeration Text Item to use. It can be different from the body copy of the heading.

ELB= is the left boundary of the enumeration field, in tenths of points, measuring from the left edge of the column. If the user wants the enumeration to fall flush with the left edge of the column the argument would be 0.

(Continued on next page.)

HEADING STYLE

Setup Command (*Continued*)

\HDX*n*

ERB= is the right boundary of the enumeration field, in tenths of points, measuring from the left edge of the column.

ECM= is the composition mode of the text inside the enumeration field. This controls where it will be between the left and right boundaries. The options are:

CE Center

FL Flush to the Left Boundary

FR Flush to the Right Boundary

JU Justify at Both Boundaries

See Also: Examples of Enumeration in the
\PX*n*
PARAGRAPH STYLE Setup

Text Item
Command: \HD*n*

MAXIMUM WORD SPACING**Setup Command****\HMAX**

Purpose: This command sets the *Maximum Amount of Word Spacing* to be used in Text Items.

Format: \HMAX *n*

Argument: *n* is the maximum amount of word spacing in relative units. (1 Relative Unit = 1/10 point for 10-point type.) As the point size increases, the actual word space value increases.

Remarks: Use this formula to figure maximum word spacing:
 Maximum Word Space = Relative Units × Point Size + 100.

This command, along with its other related commands, gives the user control over word spacing.

**Related
 Commands:**

\HMIN *n*
MINIMUM WORD SPACING

\HNOM *n*
NORMAL WORD SPACING

Defaults: \HMAX 56
 \HMIN 20
 \HNOM 34

MINIMUM WORD SPACING

Setup Command

\HMIN

Purpose: This command sets the *Minimum Amount of Word Spacing* to be used in Text Items.

Format: \HMIN *n*

Argument: *n* is the minimum amount of word spacing in relative units. (1 Relative Unit = 1/10 point for 10-point type.) As the point size increases, the actual word space value increases.

Remarks: Use this formula to figure minimum word spacing:
 Minimum Word Space = Relative Units × Point Size + 100.

This command, along with its other related commands, gives the user control over word spacing.

**Related
 Commands:**

\HMAX *n*
MAXIMUM WORD SPACING

\HNOM *n*
NORMAL WORD SPACING

Defaults: \HMAX 56
 \HMIN 20
 \HNOM 34

NORMAL WORD SPACING**Setup Command****\HNOM**

Purpose: This command sets the *Normal Amount of Word Spacing* to be used in Text Items.

Format: \HNOM *n*

Argument: *n* is the normal amount of word spacing in relative units. (1 Relative Unit = 1/10 point for 10-point type.) As the point size increases the actual word space value increases.

Remarks: Use this formula to figure normal word spacing:
Normal Word Space = Relative Units × Point Size + 100.

This command, along with its other related commands, gives the user control over word spacing.

**Related
Commands:**

\HMAX *n*
MAXIMUM WORD SPACING

\HMIN *n*
MINIMUM WORD SPACING

Defaults: \HMAX 56
\HMIN 20
\HNOM 34

CHARACTERS AFTER HYPHEN**Setup Command****\HYMA**

- Purpose:** This command sets the *Minimum Number of Characters Allowed After A Hyphen*.
- Format:** \HYMA *n*
- Argument:** *n* is the minimum number of characters left in the broken word following a hyphen.
- Remarks:** This command, along with its other related commands, gives the user control over hyphenation.
- Example:** \HYMA 4
 \HYMB 4
 \HYMC 1
 \HYML 8

The above example states, there must be proper word breaks of at least 4 characters before (\HYMB 4) and after (\HYMA 4) the hyphen to allow the word to break. There cannot be 2 hyphenated lines one directly after the other (\HYMC 1). This command will not hyphenate words with fewer than 8 characters (\HYML 8).

**Related
Commands:**

\HYMB *n*
CHARACTERS BEFORE HYPHEN

\HYMC *n*
CONSECUTIVE HYPHENS ALLOWED

\HYML *n*
HYPHENATION WORD LENGTH

CHARACTERS BEFORE HYPHEN

Setup Command

\HYMB

Purpose: This command sets the *Minimum Number of Characters Allowed Before A Hyphen*.

Format: \HYMB *n*

Argument: *n* is the minimum number of characters left in the broken word before a hyphen.

Remarks: This command, along with its other related commands, gives the user control over hyphenation.

Example: \HYMA 4
 \HYMB 4
 \HYMC 1
 \HYML 8

The above example states, there must be proper word breaks of at least 4 characters before (\HYMB 4) and after (\HYMA 4) the hyphen to allow the word to break. There cannot be 2 hyphenated lines one directly after the other (\HYMC 1). This command will not hyphenate words with fewer than 8 characters (\HYML 8).

**Related
 Commands:**

\HYMA *n*
CHARACTERS AFTER HYPHEN

\HYMC *n*
CONSECUTIVE HYPHENS ALLOWED

\HYML *n*
HYPHENATION WORD LENGTH

CONSECUTIVE HYPHENS ALLOWED**Setup Command****\HYMC**

Purpose: This command sets the *Number of Consecutive Lines* in a Text Item in which hyphenation will occur.

Format: \HYMC *n*

Argument: *n* is the number of lines that will be consecutively hyphenated.

Remarks: This command, along with its other related commands, gives the user control over hyphenation.

Example: \HYMA 4
 \HYMB 4
 \HYMC 1
 \HYML 8

The above example states, there must be proper word breaks of at least 4 characters before (\HYMB 4) and after (\HYMA 4) the hyphen to allow the word to break. There cannot be 2 hyphenated lines one directly after the other (\HYMC 1). This command will not hyphenate words with fewer than 8 characters (\HYML 8).

Related**Commands:**

\HYMA *n*
CHARACTERS AFTER HYPHEN

\HYMB *n*
CHARACTERS BEFORE HYPHEN

\HYML *n*
HYPHENATION WORD LENGTH

HYPHENATION WORD LENGTH**SetupCommand****\HYML**

Purpose: This command sets the *Minimum Number of Characters* that a word must have before it will be hyphenated.

Format: \HYML *n*

Argument: *n* is the minimum number of characters in a word before it will be hyphenated.

Remarks: This command, along with its other related commands, gives the user control over hyphenation.

Example: \HYMA 4
 \HYMB 4
 \HYMC 1
 \HYML 8

The example above states, there must be proper word breaks of at least 4 characters before (\HYMB 4) and after (\HYMA 4) the hyphen to allow the word to break. There cannot be 2 hyphenated lines one directly after the other (\HYMC 1). This command will not hyphenate words with fewer than 8 characters (\HYML 8).

**Related
 Commands:**

\HYMA *n*
CHARACTERS AFTER HYPHEN

\HYMB *n*
CHARACTERS BEFORE HYPHEN

\HYMC *n*
CONSECUTIVE HYPHENS ALLOWED

KERNING SIZE**Setup Command****\KSIZ**

Purpose: This command sets the starting point size in which Kerning Table values will be invoked. Kerning is turned ON/OFF through the **KERNING SWITCH Setup** command (**\KERN y/n**).

Format: **\KSIZ** *dpts*

Argument: *dpts* The point size at which kerning starts, e.g., normally at sixteen point (0160). All type at or above the point size indicated will be kerned.

**Related
Kerning
Command:**

\KERN y/n
KERNING SWITCH Setup

LETTER SPACING VALUE

Setup Command

\LNOM

Purpose: This command sets the *Normal Amount of Letter Spacing* to be used in running text and justified paragraphs.

Format: \LNOM *n*

Argument: *n* is the normal amount of letter spacing in relative units. (1 Relative Unit = 1/10 point for 10-point type.) As the point size increases, the actual letter space value increases. Use a negative number to tighten letter space, and a positive number to open up letter space.

Examples: This example is of a paragraph with *no change to* the normal letter spacing:

```
\LNOM 0
\LS N
```

To meet the challenge of change, magazine designers have been forced to constantly adjust their creative approach and explore new directions in visual presentation.

This example is of a paragraph with *increased* letter spacing:

```
\LNOM 2
\LS Y
```

To meet the challenge of change, magazine designers have been forced to constantly adjust their creative approach and explore new directions in visual presentation.

(Continued on next page.)

LETTER SPACING VALUE

Setup Command (*Continued*)

\LNOM

This example is of a paragraph with *decreased* letter spacing:

```
\LNOM -1
\LS Y
```

To meet the challenge of change, magazine designers have been forced to constantly adjust their creative approach and explore new directions in visual presentation.

Note: You must turn on the LETTER SPACING SWITCH after setting the values in \LNOM.

**Related
Letter Spacing
Commands:**

```
\LS y/n
LETTER SPACING SWITCH Setup
```

Defaults: \LNOM 0
\LS N

PAGE DEFINITION

Setup Command

\PDEF

Purpose: Setup command for specifying page boundaries and the type of page wanted. This command controls cutmarks and the automatic flip-flopping of margins needed for binding of double-sided (duplex) printing.

Format: \PDEF *string* \END

Argument: *string*

WIDTH= <i>dpts</i>	Full Width of Page
DEPTH= <i>dpts</i>	Full Depth of Page
LM= <i>dpts</i>	Left Margin
RM= <i>dpts</i>	Right Margin
DUPLEX= <i>y/n</i>	Two-sided Printing Switch
ORN= <i>n</i>	Rotate Page Heading/Foot
CUTS= <i>y/n</i>	Four-corner Cutmarks

Example: \PDEF WIDTH=6146 DEPTH=7953 LM=0723
RM=0360 DUPLEX=Y ORN=0 \END

Remarks:

WIDTH= is the total width of the page, in tenths of points, from cutmark to cutmark.

DEPTH= is the total depth of the page, in tenths of points, from cutmark to cutmark.

LM= is the margin, in tenths of points, reserved on the bound side of a page. Always figure margin for an ODD page. This argument is *only necessary when turning on the Two-sided Printing Switch (DUPLEX=Y)*.

RM= is the margin, in tenths of points, reserved on the right side of a page. Always figure margin for an ODD page. This argument is *only necessary when turning on the Two-sided Printing Switch (DUPLEX=Y)*.

(Continued on next page.)

PAGE DEFINITION**Setup Command (*Continued*)****\PDEF**

DUPLEX= is the switch that turns on the automatic flip-flopping of the LM (Left Margin) for two-sided printing, when the inside margin of the page is different than the outside.

Y Yes, turn on automatic flip-flopping of margins for double-sided printing.

N No, this document is for single-sided (or simplex) printing.

ORN= 0 Do Not Rotate Page Heading/Foot.

1 Rotate Page Heading/Foot 90 Degrees.

CUTS= is the switch that turns on and off cutmarks.

Y Yes, put page boundary cutmarks on all four corners of the page.

N No, do not show page boundary.

Note: The argument for LM (Left Margin) in the PAGE DEFINITION Setup command affects the X coordinates of the COLX command. If in the PAGE DEFINITION the argument for LM is a value other than 0, you will notice the columns horizontally offset by that value.

See Also: \COLX
COLUMN Setup

“Volume 4 — Page Formats”

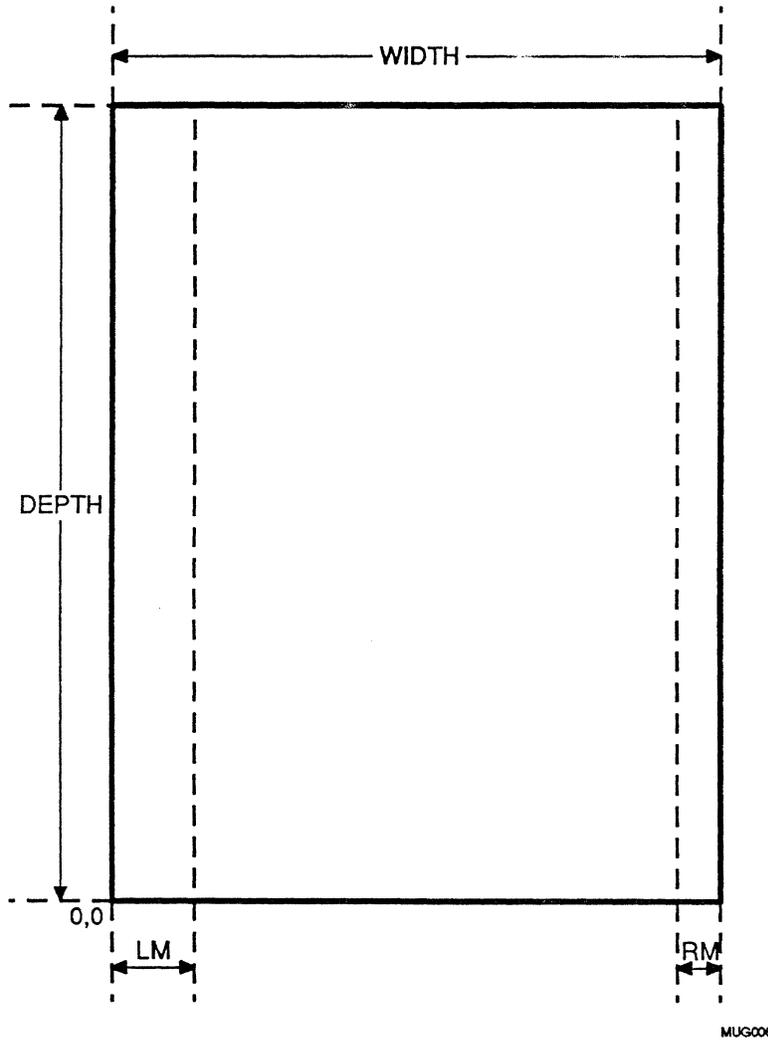
(Continued on next page.)

PAGE DEFINITION

Setup Command (*Continued*)

\PDEF

Page Definition Measurement



Note: Always figure margins using an ODD page.

PAGE FOOT STYLE

Setup Command

\PFUTX*n*

Purpose: Enables the user to define page foot styles. The values specified are stored and recalled later through the corresponding PAGE FOOT Text Item command. For more information about PAGE FOOT use, see "Using Page Heads/Feet."

Format: \PFUTX*n string* \END

Arguments: *n* is a number from 1 to 6. This allows 6 different PAGE FOOT STYLE Setup commands to be assigned and saved for later recall.

string

Required Parameters:

TEXT= <i>n</i>	Text Style Command Referenced
LM= <i>dpts</i>	Left Margin
RM= <i>dpts</i>	Right Margin
CM= <i>aa</i>	Composition Mode
YPOS= <i>dpts</i>	Y Position on the Page

Optional Parameters:

UL= <i>y/n</i>	Underline Page Foot Switch
IL1= <i>dpts</i>	First Indent Value
IL2= <i>dpts</i>	Second Indent Value
NLI= <i>n</i>	Number of Times to Use First Value
EA= <i>y/n</i>	Enumeration Allowed Switch
ETX= <i>n</i>	Enumeration Text Style Command Referenced
ELB= <i>dpts</i>	Enumeration Left Boundary
ERB= <i>dpts</i>	Enumeration Right Boundary
ECM= <i>aa</i>	Enumeration Composition Mode

(Continued on next page.)

PAGE FOOT STYLE

Setup Command (*Continued*)

\PFUTXn

Remarks: *TEXT*= is the number of the TEXT STYLE Setup command you wish to use.

LM= is the left margin of the page foot, in tenths of points, measuring from the left edge of the page.

RM= is the right margin, in tenths of points, measuring from the left edge of the page.

CM= is the composition mode of the page foot. This controls where it will set between the left and right margins. The options are:

CE Center

FL Flush to the Left Margin

FR Flush to the Right Margin

JU Justify at Both Margins

YPOS= is the Y position on the page measuring, in tenths of points, from the bottom of the page. (Bottom left corner of the page is X=0, Y=0.) This position is the baseline of the first line of the page foot.

Example: \PFUTX01 TEXT=01 LM=0360 RM=5400 CM=FL
 YPOS=0723 \END

This will output a page foot, on page two, in the font and style defined in the TEXT STYLE Setup command number 1 (TEXT=01). It will be flush left one-half inch from the edge of the page (LM=0360), and the baseline will set one inch from the bottom of the page (YPOS=0723).

UL= This parameter is optional. It will underscore all words in that page foot. See ULPOS and ULSIZ Setup commands for controls of underscore baseline positioning and rule weight of the underscore.

(Continued on next page.)

PAGE FOOT STYLE

Setup Command (*Continued*)

\PFUTXn

- IL1* = This parameter is optional. The First Indent Value is the amount, in tenths of points, you wish to indent a line(s) of the page foot from its left margin. It is used in conjunction with the *IL2* and *NLI* parameters.
- IL2* = This parameter is optional. It gives the capability to have a second indentation value to create a special effect.
- NLI* = This parameter is optional. Indicates how many lines of the page foot to be indented at value number one (*IL1*). The rest of the page foot will use indent value number two (*IL2*).

See Also: PARAGRAPH STYLE Setup command for examples of usage for the *IL1*, *IL2* and *NLI* parameters.

Enumerated Page Foot:

What is referred to in standard typing as a simple outline style is called, in MECCA III as, "enumerated." An enumerated page foot is one with a number, word or other item in the left margin of indented page foot body copy.

The following is an example of an enumerated page foot:

Notice – See proprietary restrictions on title page.

Enumeration Parameters:

- EA* = is the switch that allows use of the following enumeration parameters. *Y* for Yes and *N* for No. *If you do not turn on the enumeration switch (EA=Y), all enumeration parameters will be ignored.*
- ETX* = is the number of the TEXT STYLE Setup command you want the enumeration Text Item to use. It can be different from the body copy of the page foot.

(Continued on next page.)

PAGE FOOT STYLE**Setup Command (*Continued*)****\PFUTX n**

ELB= is the left boundary of the enumeration field, in tenths of points, measuring from the left edge of the page.

ERB= is the right boundary of the enumeration field, in tenths of points, measuring from the left edge of the page.

ECM= is the composition mode of the text inside the enumeration field. This controls where it will set between the left and right boundaries. The options are:

CE Center

FL Flush to the Left Boundary

FR Flush to the Right Boundary

JU Justify at Both Boundaries

See Also: "Volume 4 — Page Formats"

Text Item

Command: \PFUT n
PAGE FOOT Text Item

Related

Commands: \PHEDX n
PAGE HEADING STYLE Setup

\PHED n
PAGE HEADING Text Item

PAGE HEADING STYLE

Setup Command

\PHEDX n

Purpose: Enables the user to define running page heading styles. The values specified are stored and recalled later through the corresponding PAGE HEADING Text Item command. For more information about Page Headings, see "Using Page Headers and Feet."

Format: \PHEDX n *string* \END

Arguments: n is a number from 1 to 6. This allows 6 different PAGE HEADING STYLE Setup commands to be assigned and saved for later recall.

string

Required Parameters:

TEXT= n	Text Style Command Referenced
LM= $dpts$	Left Margin
RM= $dpts$	Right Margin
CM= aa	Composition Mode
YPOS= $dpts$	Y Position on the Page

Optional Parameters:

UL= y/n	Underline Page Heading Switch
IL1= $dpts$	First Indent Value
IL2= $dpts$	Second Indent Value
NLI= n	Number of Times to Use First Value
EA= y/n	Enumeration Allowed Switch
ETX= n	Enumeration Text Style Command Referenced
ELB= $dpts$	Enumeration Left Boundary
ERB= $dpts$	Enumeration Right Boundary
ECM= aa	Enumeration Composition Mode

(Continued on next page.)

PAGE HEADING STYLE

Setup Command (*Continued*)\PHEDX*n*

Remarks: *TEXT=* is the number of the TEXT STYLE Setup command you wish to use.

LM= is the left margin of the page heading, in tenths of points, measuring from the left edge of the page.

RM= is the right margin, in tenths of points, measuring from the left edge of the page.

CM= is the composition mode of the heading. This controls where it will set between the left and right margins. The options are:

CE Center

FL Flush to the Left Margin

FR Flush to the Right Margin

JU Justify at Both Margins

YPOS= is the Y position on the page measuring, in tenths of points, from the bottom of the page. (Bottom left corner of the page is X=0, Y=0.) This position is the baseline of the first line of the page heading.

Example: \PHEDX01 TEXT=01 LM=0360 RM=5400 CM=FL
 YPOS=0723 \END

This will output a page heading, on page two, in the font and style defined in the TEXT STYLE Setup command number 1 (TEXT=01). It will be flush left one-half inch from the edge of the page (LB=0360), and the baseline will set one inch from the top of the page (YPOS=0723).

UL= This parameter is optional. It will underscore all words in that page heading. See ULPOS and ULSIZ Setup commands for controls of underscore baseline positioning and rule weight of the underscore.

(Continued on next page.)

PAGE HEADING STYLE

Setup Command (*Continued*)

\PHEDXn

- IL1* = This parameter is optional. The First Indent Value is the amount, in tenths of points, you wish to indent a line(s) of the page heading from its left margin. It is used in conjunction with the *IL2* and *NLI* parameters.
- IL2* = This parameter is optional. It gives the capability to have a second indentation value to create a special effect.
- NLI* = This parameter is optional. Indicates how many lines of the page heading are to be indented at value number one (*IL1*). The rest of the page heading will use indent value number two (*IL2*).

See Also: PARAGRAPH STYLE Setup command for examples of usage for the *IL1*, *IL2* and *NLI* parameters.

Enumerated Page Headings:

What is referred to in standard typing as a simple outline style is called, in MECCA III as, "enumerated." An enumerated page heading is one with a number, word or other item in the left margin of the indented page heading body copy.

The following is an example of an enumerated page heading.

**Chapter 1 — The Handyman's Guide
to Carpet Laying**

Enumeration Parameters:

- EA* = is the switch that allows use of the following enumeration parameters: *Y* for Yes and *N* for No. *If you do not turn on the enumeration switch (EA=Y), all enumeration parameters will be ignored.*
- ETX* = is the number of the TEXT STYLE Setup command you want the enumeration Text Item to use. It can be different from the body copy of the page heading.

(Continued on next page.)

PAGE HEADING STYLE

Setup Command (*Continued*)\PHEDX*n*

ELB= is the left boundary of the enumeration field, in tenths of points, measuring from the left edge of the page.

ERB= is the right boundary of the enumeration field, in tenths of points, measuring from the left edge of the page.

ECM= is the composition mode of the text inside the enumeration field. This controls where it will set between the left and right boundaries. The options are:

CE Center

FL Flush to the Left Boundary

FR Flush to the Right Boundary

JU Justify at Both Boundaries

See Also: Examples of Enumerations

\PX*n*
PARAGRAPH STYLE Setup

Text Item
Command:

\PHED*n*
PAGE HEADING Text Item

Related
Commands:

\PFUTX*n*
PAGE FOOT STYLE Setup

\PFUT*n*
PAGE FOOT Text Item

PARAGRAPH STYLE

Setup Command

\PXn

Purpose: Enables the user to define up to 31 paragraph styles. The values specified are stored and recalled later through the corresponding PARAGRAPH Text Item command.

Format: \PXn *string* \END

Arguments: *n* is a number from 1 to 31. This allows 31 different PARAGRAPH STYLE Setup commands to be assigned and saved for later recall.

string

Required Parameters:

TEXT= <i>n</i>	Text Style Command Referenced
LM= <i>dpts</i>	Left Margin
RM= <i>dpts</i>	Right Margin
CM= <i>aa</i>	Composition Mode
LB= <i>dpts</i>	Leading Before Heading
LA= <i>dpts</i>	Leading After Heading

Optional Parameters:

UL= <i>y/n</i>	Underline Paragraph Switch
IL1= <i>dpts</i>	First Indent Value
IL2= <i>dpts</i>	Second Indent Value
NLI= <i>n</i>	Number of Times to Use First Value
EA= <i>y/n</i>	Enumeration Allowed Switch
ETX= <i>n</i>	Enumeration Text Style Command Referenced
ELB= <i>dpts</i>	Enumeration Left Boundary
ERB= <i>dpts</i>	Enumeration Right Boundary
ECM= <i>aa</i>	Enumeration Composition Mode

(Continued on next page.)

PARAGRAPH STYLE

Setup Command (*Continued*)

\PXn

Remarks:	<i>TEXT</i> =	is the number of the TEXT STYLE Setup command you wish to use.
	<i>LM</i> =	is the left margin of the paragraph, in tenths of points, measuring from the left edge of the column. If you want the paragraph to fall flush left at the edge of the column, the argument is 0.
	<i>RM</i> =	is the right margin, in tenths of points, measuring from the left edge of the column. Normally, the right margin of a paragraph is the same as the column width.
	<i>CM</i> =	is the composition mode of the paragraph. This controls where it will set between the left and right margins. The options are: <i>CE</i> Center <i>FL</i> Flush to the Left Margin <i>FR</i> Flush to the Right Margin <i>JU</i> Justify at Both Margins
	<i>LB</i> =	is the white space before the paragraph is set. Measure from baseline of previous item to baseline of paragraph. See "Chapter 6 — How To Measure Leading" for more information on this subject.
	<i>LA</i> =	This parameter allows the user to place extra leading after a paragraph if needed. See "Chapter 6 — How To Measure Leading" for more information on this subject.

(Continued on next page.)

PARAGRAPH STYLE

Setup Command (*Continued*)

\PXn

Example: \PX01 TEXT=01 LM=0000 RM=2400 CM=JU LB=0240
LA=0000 \END

This will output a paragraph in the font and style defined in the TEXT STYLE Setup command number 1 (TEXT=01). Each line in the paragraph will have a length of 240 points (RM=2400). It will be justified on both edges (CM=JU). As lines of the paragraph reach the right margin, they will drop down the amount of lead specified in the TEXT STYLE Setup command and will wrap back to the Left Margin (LM=0000). Each paragraph will drop down 24 points when following another Text Item (LB=0240) and will not force any extra leading to follow it (LA=0000).

**Optional
Parameters:**

- UL*= This parameter is optional. It will underscore all words in that paragraph. See ULPOS and ULSIZ Setup commands for controls of underline baseline positioning and rule weight of the underline.
- IL1*= This parameter is optional. The First Indent Value is the amount, in tenths of points, you wish to indent a line(s) of the paragraph from its left margin.
- IL2*= This parameter is optional. It gives the capability to have a second indention value to create a hanging paragraph effect, etc. It is used in conjunction with the IL1 and NLI parameters.
- NLI*= This parameter is optional. Inputs how many lines of the paragraph are to be indented at value number one (IL1). The rest of the paragraph will use indent value number two (IL2).

(Continued on next page.)

PARAGRAPH STYLE

Setup Command (*Continued*)

\PXn

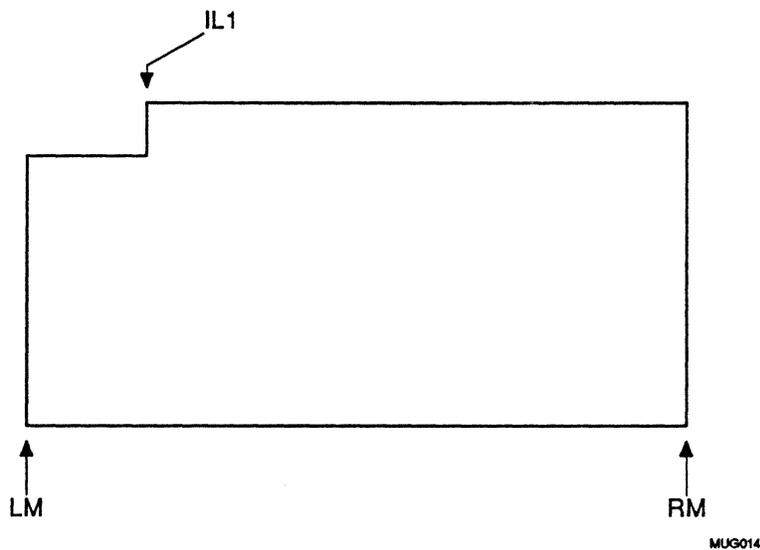
Example: To create a paragraph with a first-line indent only, you would include the following:

IL1=0120 twelve points or one-pica indent

NLI=001 indent one line of the paragraph the amount shown in *IL1*

IL2=0000 do not indent lines two, three, four, etc.; instead, go back to the Left Margin (*LM*) value.

Profile of an Indented Paragraph



(Continued on next page.)

PARAGRAPH STYLE

Setup Command (*Continued*)

\PXn

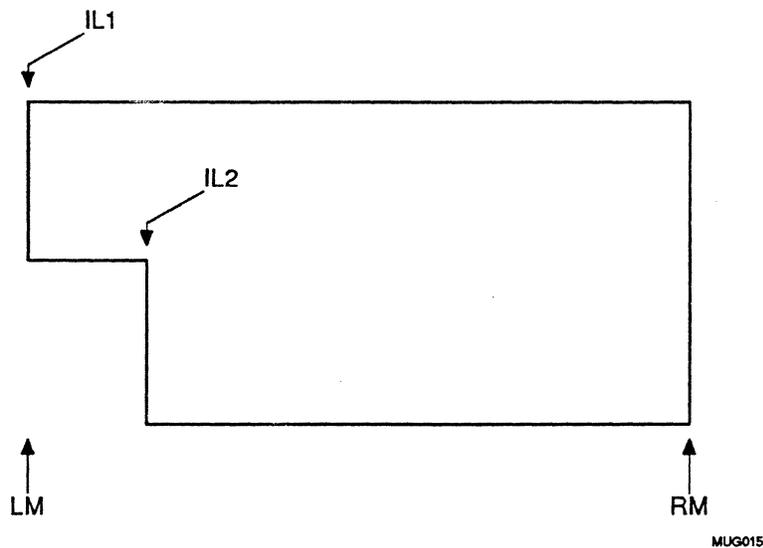
Example: In this example, you want the first three lines of the paragraph to set flush left to the edge of the column, but want line four through the rest of the paragraph to be indented one inch:

IL1=0000 first indent value

NLI=003 Indent the first three lines of the paragraph the amount shown in *IL1*, which is 0 (zero).

IL2=0723 Start indenting at line four through the rest of the paragraph 723 tenths of points or 1 inch.

Profile of a Hanging Paragraph



(Continued on next page.)

PARAGRAPH STYLE

Setup Command (*Continued*)

\PXn

Enumerated Paragraphs:

What is referred to in standard typing as a simple outline style is called, in MECCA III, "enumerated paragraphs." An enumerated paragraph is one with a number, word or other item in the left margin of the indented paragraph.

- I. This is an enumerated paragraph.
 - a. This is an enumerated paragraph.
 - 1. This is an enumerated paragraph.

Note: This is an enumerated paragraph.

In addition, another good example are the actual pages in this user's guide. The copy is set up almost entirely using enumerated paragraphs.

Enumeration Parameters:

EA = is the switch that allows use of the following enumeration parameters: *Y* for Yes and *N* for No. *If you do not turn on the enumeration switch (EA=Y), all enumeration parameters will be ignored.* EA switch must precede all other enumeration parameters.

ETX = is the number of the TEXT STYLE Setup command you want the enumeration Text Item to use. It can be different from the body copy of the paragraph.

ELB = is the left boundary of the enumeration field, in tenths of points, measuring from the left edge of the column. If the user wants the enumeration to fall flush with the left edge of the column the argument would be 0.

(Continued on next page.)

PARAGRAPH STYLE

Setup Command (*Continued*)

\PXn

ERB= is the right boundary of the enumeration field, in tenths of points, measuring from the left edge of the column.

ECM= is the composition mode of the text inside the enumeration field. This controls where it will be between the left and right boundaries. The options are:

CE Center

FL Flush to the Left Boundary

FR Flush to the Right Boundary

JU Justify at Both Boundaries

(Continued on next page.)

PARAGRAPH STYLE

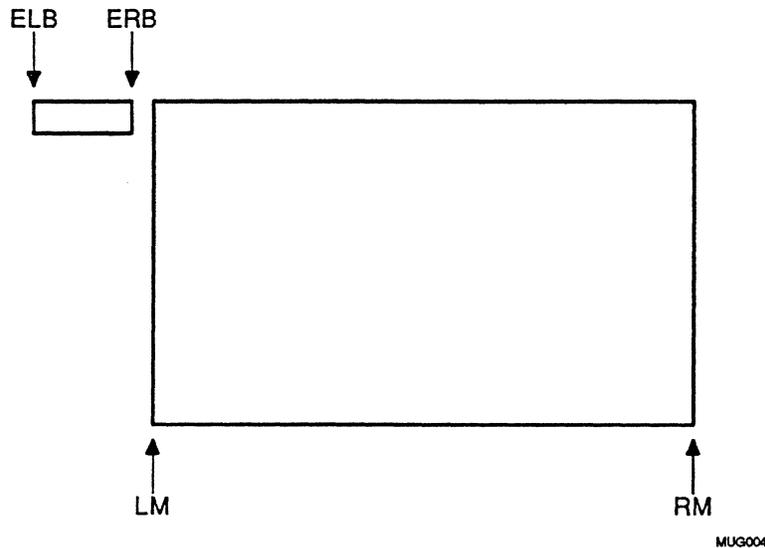
Setup Command (*Continued*)

\PXn

Example: To create an enumerated paragraph with the enumeration hanging out from the paragraph, the \PX setup command would be:

```
\PX11 EA=Y ETX=01 ELB=0000 ERB=0240 ECM=FL
\END
\PX11 TEXT=01 LM=0300 RM=2400 CM=JU LB=0240
LA=0000 \END
```

Profile of a Paragraph with a Hanging Enumeration



(Continued on next page.)

PARAGRAPH STYLE

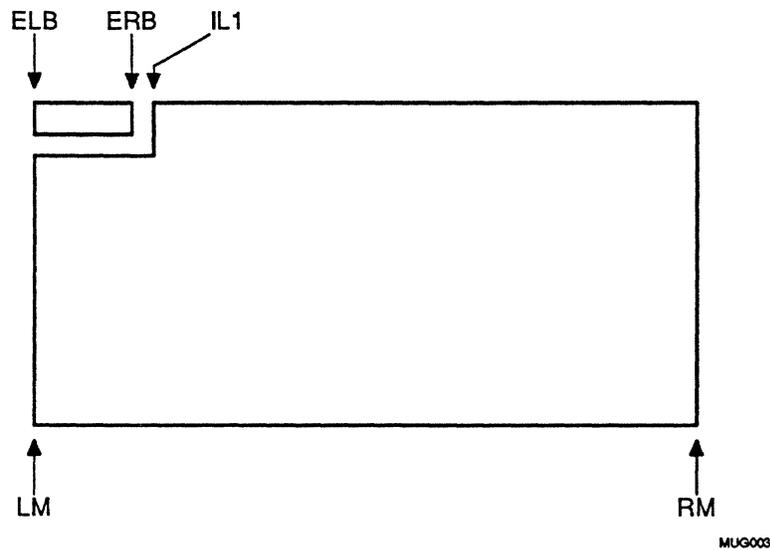
Setup Command (*Continued*)

\PX n

Example: To create an enumerated paragraph with the paragraph wrapping under the enumeration, the \PX setup command would include the IL1, IL2 and NLI parameters:

```
\PX11 EA=Y ETX=01 ELB=0000 ERB=0240 ECM=FL
\END
\PX11 TEXT=11 LM=0000 RM=2400 CM=JU LB=0240
LA=0000 \END
\PX11 IL1=0300 IL2=0000 NLI=001 \END
```

Profile of a Paragraph with an Embedded Enumeration



PARAGRAPH STYLE

Setup Command (*Continued*)

\PXn

Example: To create a paragraph with a large initial cap, the \PX Setup command would include the IL1, IL2 and NLI parameters along with the enumeration parameters.

The enumeration field would point to a larger point size as shown in \TXT01 and the paragraph to the normal point size in \TXT02:

```
\PX11 EA=Y ETX=01 ELB=0000 ERB=0220 ECM=FL
\END
\PX11 TEXT=02 LM=0000 RM=1200 CM=JU LB=0240
LA=0000 \END
\PX11 IL1=0220 IL2=0000 NLI=002 \END
```

Previously Defined:*Text Style Setup* —

```
\TXT01 FONT=TI STYLE=B HSIZE=0260 VSIZE=0260
LEAD=0260 \END
\PXT02 FONT=TI STYLE=N HSIZE=0110 VSIZE=0110
LEAD=0110 \END
```

Input: \P11 \DN 100^O \END nce upon a time,
there were three bears who lived in the
forest.

Output: **O**nce upon a time,
there were three
bears who lived in the
forest.

**Text Item
Command:**

\Pn
PARAGRAPH Text Item

TAB

Setup Command

\TBXn

Purpose: To define tab positions and tab style characteristics within a table. Tables are made up of columns, which are tabs. Each tab position in a table must have its own setup command. This command defines margins for the tab, composition mode, and which TEXT STYLE Setup command it refers to.

Format: \TBXn *string* \END

Arguments: *n* is a number from 1 to 99. This number is the tab number referenced through the START TAB POSITION sub-command (\STP) within the TABLE START command (\TSn).

string

Required Parameters:

TEXT= <i>n</i>	Text Style Command Referenced
LM= <i>dpts</i>	Left Margin of Tab
RM= <i>dpts</i>	Right Margin of Tab
CM= <i>aa</i>	Composition Mode

Optional Parameters:

VCM= <i>aa</i>	Vertical Composition Mode of Rows
GUTL= <i>dpts</i>	Left Gutter
GUTR= <i>dpts</i>	Right Gutter
GUTT= <i>dpts</i>	Top Gutter
GUTB= <i>dpts</i>	Bottom Gutter

(Continued on next page.)

TAB

Setup Command (*Continued*)

\TBXn

Remarks:	<i>TEXT</i> =	is the number of the TEXT STYLE Setup command you wish to use.
	<i>LM</i> =	is the left margin of the tab, in tenths of points, measuring from the left edge of the current column.
	<i>RM</i> =	is the right margin, in tenths of points, measuring from the left edge of the current column.
	<i>CM</i> =	is the composition mode of the tab. The options are: <i>CE</i> Center <i>FL</i> Flush to the Left Margin <i>FR</i> Flush to the Right Margin <i>JU</i> Justify at Both Margins
	<i>VCM</i> =	is the vertical composition mode of each row. This controls where text will set between the rules, if a ruled table. <i>CE</i> Center <i>FT</i> Flush to Top of Row <i>FB</i> Flush to Bottom of Row
	<i>GUTL</i> =	is reserved space (or gutter) at the left of the tab, in tenths of points. Space is needed when the tab has a vertical rule on its left and the text should be offset a few points.
	<i>GUTR</i> =	is reserved space (or gutter) at the right of the tab, in tenths of points. Space is needed when the tab has a vertical rule on its right and the text must be offset a few points.

(Continued on next page.)

TAB

Setup Command (*Continued*)

\TBX n

Example: \TBX01 TEXT=01 LM=0000 RM=1000 CM=FL \END
 \TBX02 TEXT=01 LM=1000 RM=2000 CM=CE \END
 \TBX03 TEXT=01 LM=2000 RM=3000 CM=FR \END

The commands above will position three tabs in a table. Each tab references the same TEXT STYLE number 1 (TEXT=01) and is one hundred points (1000) wide. The composition mode for each one is different: the first will set flush to its left margin (CM=FL), the second will center within both margins (CM=CE), and the last will be flush to its right margin (CM=FR).

Tab One
 Tab 1
 Tab One

Tab Two
 Tab 2
 Tab Two

Tab Three
 Tab 3
 Tab Three

Related Table

Commands: \TSX n
 TABLE STYLE Setup

\TS n
 TABLE START Text Item

TABLE STYLE

Setup Command

\TSXn

Purpose: Main control command for defining table characteristics. A table is defined as multiple columns of text items which are associated in rows.

Format: \TSXn *string* \END

Arguments: *n* is a number from 1 to 20. This number is assigned to the corresponding TABLE START Text Item command (\TSn).

string

COMP= <i>aa</i>	Type of Composition
ROWDEPTH= <i>aa</i>	Row Leading Control Switch
ROWLEAD= <i>dpts</i>	Fixed Row Leading Value
LB= <i>dpts</i>	Lead Before Table
LA= <i>dpts</i>	Lead After Table
RULES= <i>aa</i>	Draw Rules Around Table
TBLL= <i>n</i>	Before Rule Lead
TBRL= <i>n</i>	After Rule Lead
TBXL= <i>n</i>	Text Item Lead

Example: \TSX01 COMP=JUST ROWDEPTH=VAR LB=0240
RULES=TBLR \END

Remarks: *COMP=* is how the lines will compose:

JUST indicates that the text in a column can be word-wrapped to fit the tab measure; it can be used to create justified copy in a tab measure.

Note: When using COMP=JUST, each row within the table must be surrounded by blank lines.

(Continued on next page.)

TABLE STYLE

Setup Command (*Continued*)

\TSXn

-
- LINE* indicates that each row will be typeset line for line the way it is input. Line breaks are maintained. Lines with more copy than will fit in the measure will cause the extra words to wrap down onto a line of their own.
- ROWDEPTH=* is the type of row leading to be specified:
- VAR* is variable. The leading varies according to the LEAD argument in the TEXT STYLE Setup command being utilized for that tab position.
- FIX* is fixed lead for the whole table. When stating ROWDEPTH=FIX, the whole table will read the lead value found in the next parameter, ROWLEAD.
- ROWLEAD=* this argument is in tenths of points. This is the amount of baseline-to-baseline leading to be used for the whole table. This parameter is only read if ROWDEPTH=FIX.
- LB=* is the amount of space, in tenths of points, to drop vertically before setting the top rule of the table or the top text item of the table.
- LA=* is the amount of space, in tenths of points, to drop vertically after setting the bottom rule of the table or the last Text Item of the table.

(Continued on next page.)

TABLE STYLE

Setup Command (*Continued*)

\TSX n

RULES= This allows the table to be boxed in by rules. They can be used in any combination. RULES=TBLR will draw a box around the table. RULES=TB will draw a rule at the top and bottom only:

TBLL= controls the leading after a rule is drawn. Default is 125 percent of LEAD value in TEXT STYLE Setup command (\TXT n) where n is the percent of \TXT Setup LEAD executed from rule above to baseline of text in row. This parameter is ignored if ROWDEPTH=FIX.

TBRL= controls the leading before a rule is drawn. Default is 50 percent of LEAD value in TEXT STYLE Setup command (\TXT n) where n is the percent of \TXT Setup LEAD executed from last line of row baseline to the rule below. This parameter is ignored if ROWDEPTH=FIX.

TBXL= controls the leading between rows with NO rule. Default is 100 percent of LEAD value in TEXT STYLE Setup command (\TXT n) where n is the percent of \TXT Setup LEAD executed from baseline to baseline of text in row. This parameter is ignored if ROWDEPTH=FIX.

T Top

L Left

R Right

B Bottom

See Also: "Chapter 6 — How to Measure Leading"

Related Table

Commands: \TBX n
TAB Setup

\TS n
TABLE START Text Item

TEXT STYLE

Setup Command

\TXT*n*

Purpose: Enables the user to specify which typeface, style and point size to use for all Text Items. The values specified are stored and recalled later by other setup commands such as PARAGRAPH, HEADING, TAB, etc., in the TEXT=*n* parameters.

Format: \TXT*n string* \END

Arguments: *n* is a number from 1 to 32. This allows 32 different TEXT STYLE Setup commands to be assigned and saved for later recall.

string

FONT=*aa* Typeface

STYLE=*aa* Type Style

HSIZE=*dpts* Horizontal Point Size

VSIZE=*dpts* Vertical Point Size

LEAD=*dpts* Baseline-to-Baseline Leading

Example: \TXT01 FONT=GE STYLE=B HSIZE=0240 VSIZE=0240
LEAD=0260 \END

Remarks:

FONT= is the typeface assigned:

GE Geneva

TI Times Roman

(Continued on next page.)

TEXT STYLE**Setup Command (*Continued*)****\TXTn**

STYLE= is the type style assigned:

\N^ Normal	\B^ Bold
\L^ Light	\BI^ <i>Bold Italic</i>
\I^ <i>Italic</i>	\XB^ Extra Bold
\LI^ <i>Light Italic</i>	\XBI^ <i>Extra Bold Italic</i>

Note: Type styles are dependent on availability of that style on your system. If you select a style that is not available (such as Light and Extra Bold on the LaserWriter), the system will output the next best thing. For example, if Extra Bold is not available, Bold will be output.

HSZ= is the horizontal point size, in tenths of points, assigned to this text style.

VSZ= is the vertical point size, in tenths of points, assigned to this text style.

Note: To create a condensed text style, make the *HSZ* value less than that for the *VSZ*. To create an expanded text style, make the value of the *HSZ* greater than the *VSZ* value.

LEAD= is the amount of vertical leading, in tenths of points, from baseline to baseline in the body of paragraphs, headings, tables, etc.

See Also: If you want to load your own fonts, see "How To Add New Type Faces to Your System" in "Volume 5 — System Maintenance."

UNDERLINE POSITION**Setup Command****\ULPOS**

Purpose: Enables the user to position the baseline of an underline recalled by either the UNDERLINE START Immediate command (\US^) or by a UL=y/n parameter in the PARAGRAPH and HEADING STYLE Setup commands.

Format: \ULPOS *n*

Arguments: *n* is the percentage of the point size to raise or lower the underline.

A negative value is for underlining and a positive value is for strike-through or overscoring effect.

Example: *Input:* \ULPOS -20^

Underlining is used \US^ to place emphasis on words or sentences\UE^.
Connect the command to the word or phrase you are stressing.

Output: Underlining is used to place emphasis on words or sentences. Connect the command to the word or phrase you are stressing.

In the following example, we want to strike through the word *Blue*:

Input: \ULPOS 40^

Draw a line through the wrong answer:
Red \US^Blue\UE^ Green

Output: Draw a line through the wrong answer:
Red ~~Blue~~ Green

(Continued on next page.)

UNDERLINE POSITION

Setup Command (*Continued*)

\ULPOS

Related

Commands: \ULSIZ *dpts*
 UNDERLINE WEIGHT Setup

 \US^
 UNDERLINE START Immediate

 \UE^
 UNDERLINE END Immediate

UNDERLINE WEIGHT**Setup Command****\ULSIZ**

Purpose: Enables the user to define the weight of the underline recalled by either the UNDERLINE START Immediate command (\US^) or by a UL=y/n parameter in the PARAGRAPH and HEADING STYLE Setup commands.

Format: \ULSIZ *dpts*

Arguments: *dpts* is the point size of the underline in tenths of points.

Example: *Input:* \ULSIZ 5^

Underlining is used \US^to place emphasis on words or sentences\UE^.
 \US^This is a half-point rule.\UE^

Output: Underlining is used to place emphasis on words or sentences. This is a half-point rule.

Input: \ULSIZ 10^

Underlining is used \US^to place emphasis on words or sentences\UE^.
 \US^This is a one-point rule.\UE^

Output: Underlining is used to place emphasis on words or sentences. This is a one-point rule.

**Related
Commands:**

\ULPOS *n*
 UNDERLINE POSITION Setup

\US^
 UNDERLINE START Immediate

\UE^
 UNDERLINE END Immediate

WHAT TEXT ITEM COMMANDS ARE

Text Item commands identify and control composition of strings of text, as directed by corresponding Setup commands.

Text Item Commands:

End Merge Form \EFORM

Merge Figure \FIGURE

Heading \HD

Merge Form \MFORM

Paragraph \P

Page Foot \PFUT

Page Heading \PHED

Table Start \TS

(Continued on next page.)

WHAT TEXT ITEM COMMANDS ARE (Continued)

MECCA III composition converts a file (or series of appended files) consisting of Text Items (headings, paragraphs, tables, etc.) into paginated pages. To ensure that the system properly recognizes headings, paragraphs, tables, and other Text Items, input them with *blank lines* before and after, as diagrammed below:

Heading	Text Item No. 1
<i>Blank Line</i>	
Paragraph	Text Item No. 2
<i>Blank Line</i>	
Paragraph	Text Item No. 3
<i>Blank Line</i>	
Heading	Text Item No. 4
<i>Blank Line</i>	
Table	Text Item No. 5
<i>Blank Line</i>	
<i>and so on.</i>	

When in doubt about whether a Text Item will be properly recognized by the system, insert a blank line before and after it.

Do not worry about blank lines taking up room on the page. They are stripped out during composition. White space between paragraphs, headings, etc., is controlled by the format in effect, and is in no way influenced by the number of blank lines in the file.

The same is true about spaces between words. Extra spaces between words are discarded by the composition system. In fact, a perfect paragraph could be composed from a file that had only one word per line. The most important thing is to have blank lines before and after the start of a paragraph (and all other Text Items) and *not* to have blank lines in the middle of a paragraph (or any other Text Item).

END MERGE FORM

Text Item Command

\EFORM

Purpose: The merged form data must be completed with a \EFORM command before entering into another Text Item command such as PARAGRAPH.

Format: \EFORM

Arguments: None

Example: \PFMT invoice.pfmt \END
\$INVOICE 001 NEW COMPANY, INC.
\$INVOICE 002 Suite 900
\$INVOICE 003 1000 Anywhere Lane
\$INVOICE 004 Anywhere, USA 99199 \EFORM

Remarks: Merging forms utilizes all parts of the system. Graphics, Format Files, Data Files, Data Positions, etc. Familiarize yourself with each part of the system before attempting Merged Forms.

See Also: "Volume 4 — How to Create a Merged Form"

Related Commands: \MFORM
MERGE FORM Text Item

MERGE FIGURE

Text Item Command

\FIGURE

Purpose: This command allows the user to merge onto the page a figure or diagram previously drawn and stored.

Format: \FIGURE *string* \END

Arguments: *string*

NAME= <i>aa</i>	Name of Drawing to be Merged
POS= <i>aa</i>	Position of Figure on Page
WIDTH= <i>dpts</i>	Width of Figure
DEPTH= <i>dpts</i>	Depth of Figure
SIZE= <i>n</i>	Standard Graphic Sizes
LB= <i>dpts</i>	Lead Before (If POS=IM)
LA= <i>dpts</i>	Lead After (If POS=IM)
ORN= <i>n</i>	Orientation of Figure (Rotation)

Remarks: *NAME=* is the file name given to the drawing. The standard "file extension" for graphics is ".g". The name cannot exceed 14 alphanumeric characters. Using lowercase characters is suggested, file names are case dependent.

POS= is the type of positioning requested:

<i>IM</i>	Immediately typeset the drawing.
<i>FL</i>	Float as closely to current position as possible.

WIDTH= is the total width of the figure in tenths of points.

DEPTH= is the total depth of the figure in tenths of points.

(Continued on next page.)

MERGE FIGURE**Text Item (*Continued*)****\FIGURE**

SIZE = There are defined seven (7) standard graphic sizes:

- | | |
|---|--|
| 1 | Full Page – 6 1/2" × 9" |
| 2 | Full Page Turned – 9" × 6" |
| 3 | One-half Page – 6 1/2" × 4 1/2" |
| 4 | One Column – 3" × 9" |
| 5 | One-half Column – 3 × 4 1/2" |
| 6 | One-quarter of a Page – 6 1/2" × 2 1/4" |
| 7 | Three-quarters of a Page – 6 1/2" × 6 1/4" |

If the *SIZE* parameter is used, the *WIDTH* and *DEPTH* parameters should not be used.

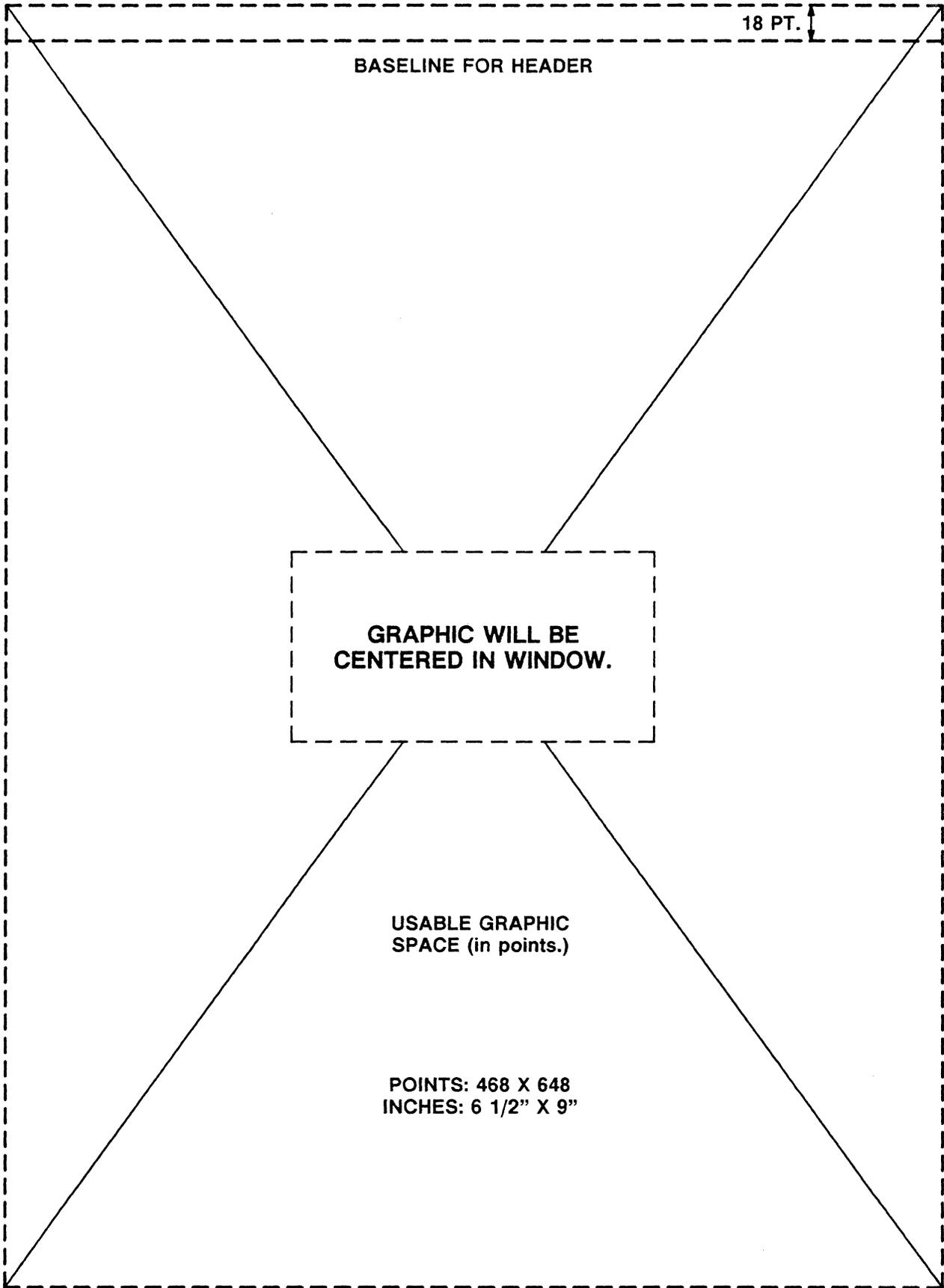
LB = is the amount of white space to place before the figure when using the *POS=IM* (Position=Immediate) parameter.

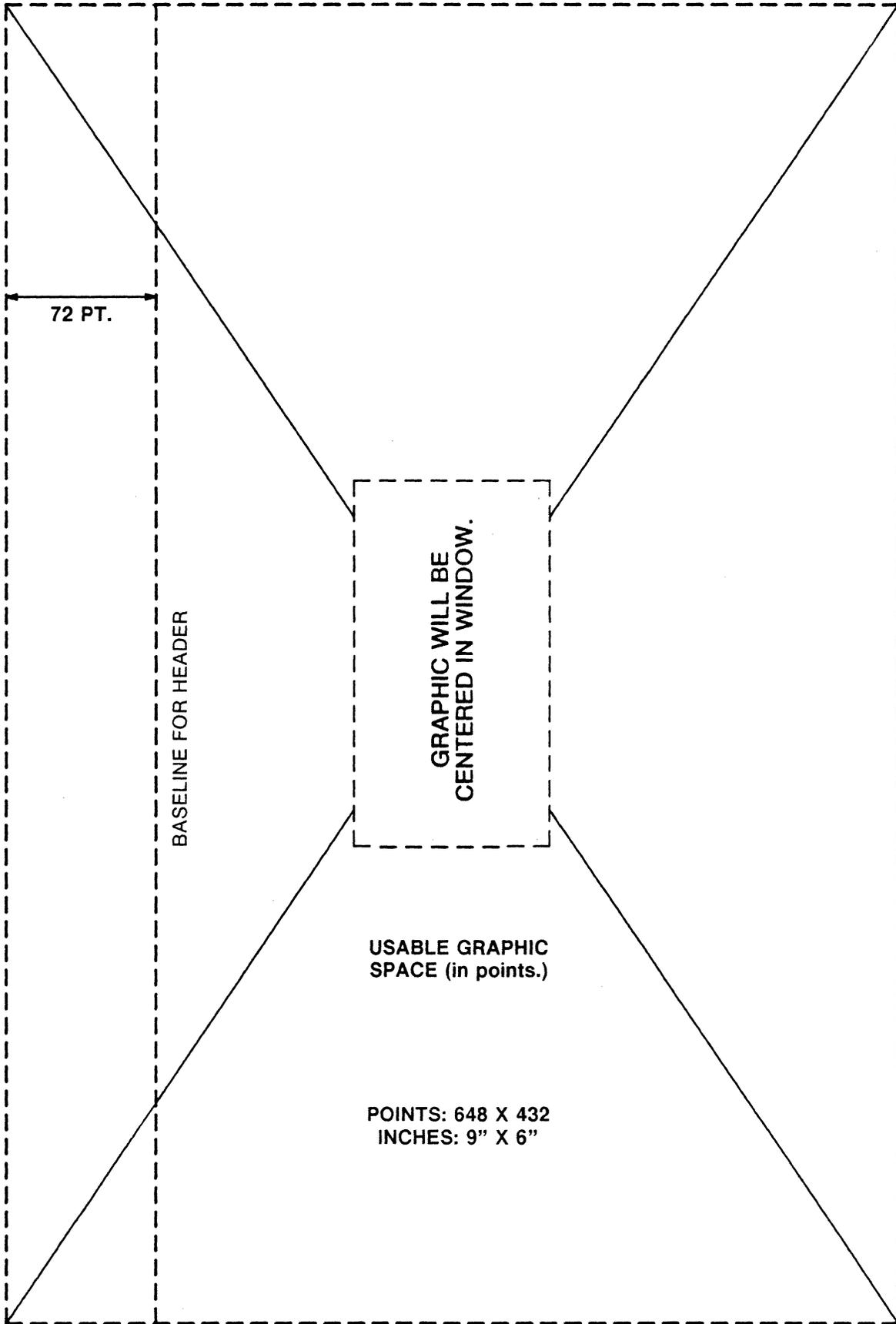
LA = is the amount of white space to place after the figure when using the *POS=IM* (Position=Immediate) parameter.

ORN = This parameter allows the user to rotate the figure:

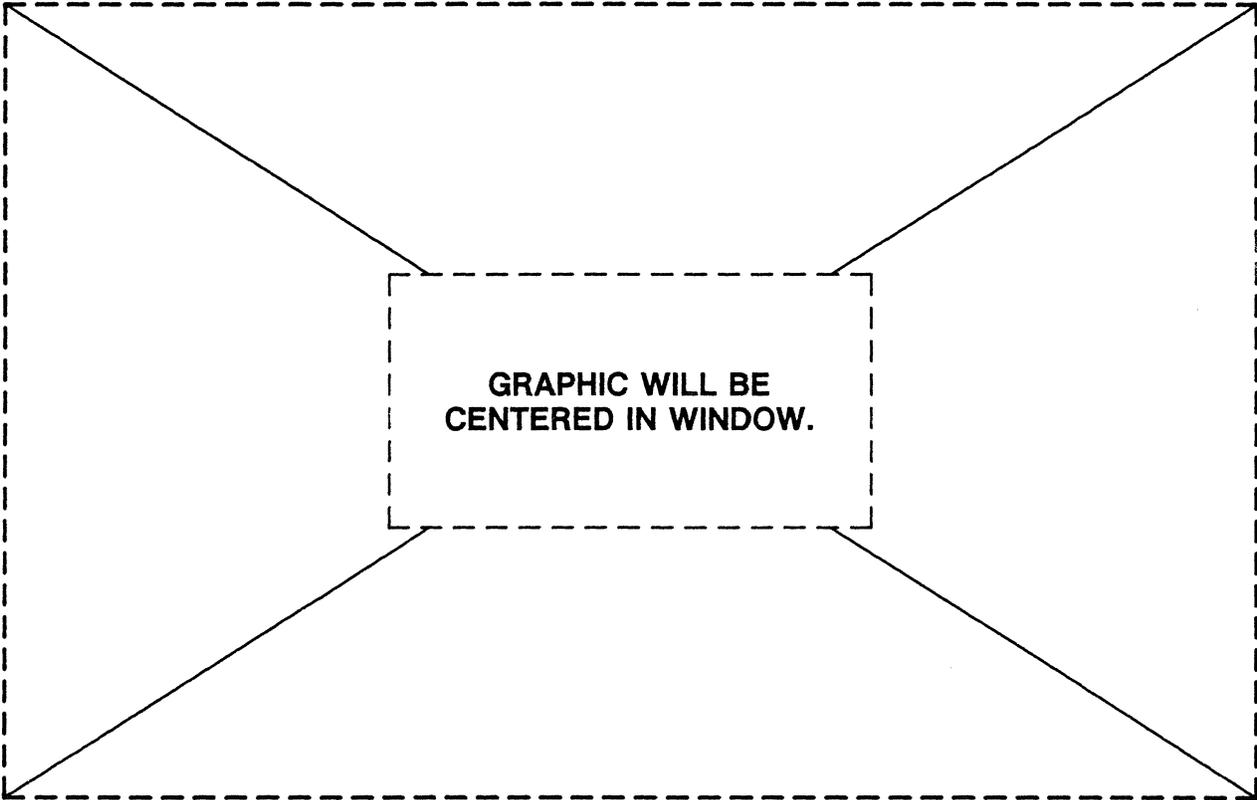
- | | |
|---|-------------------------------|
| 0 | Upright Figure |
| 1 | Rotate Figure Left 90 degrees |

Example: \FIGURE NAME=boc832.g POS=IM SIZE=3 LB=0360
LA=0360 ORN=0 \END





2. FULL PAGE TURNED



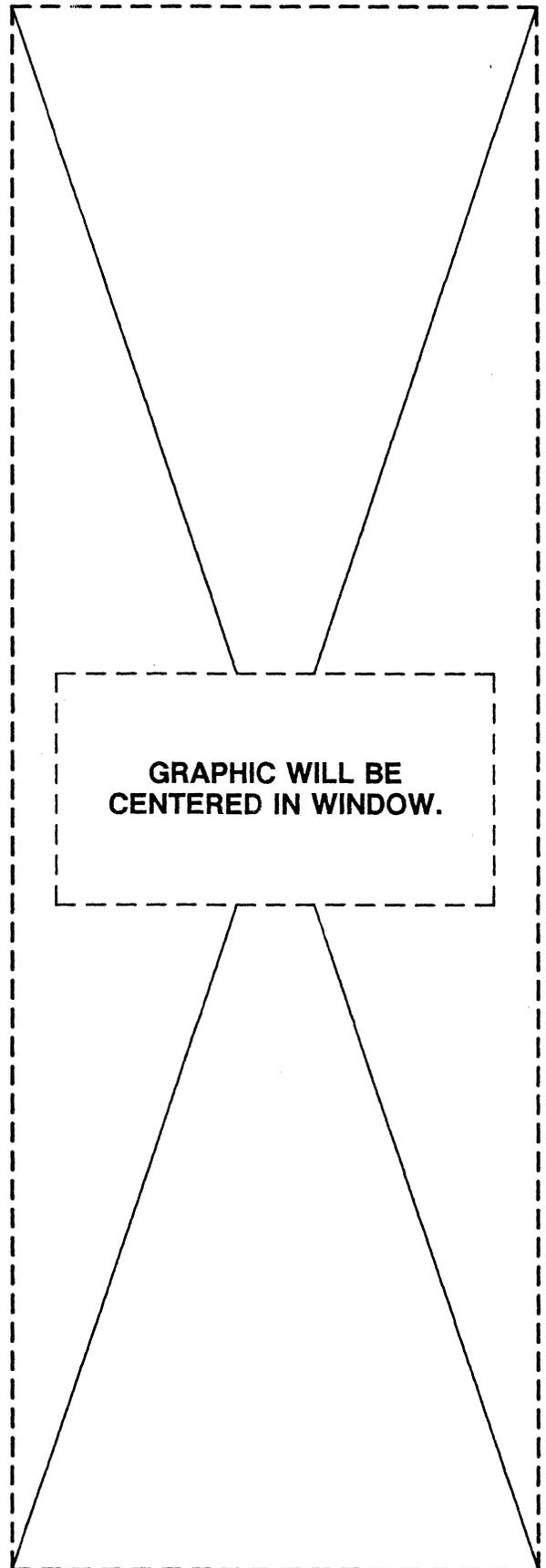
**USABLE GRAPHIC
SPACE (in points.)**

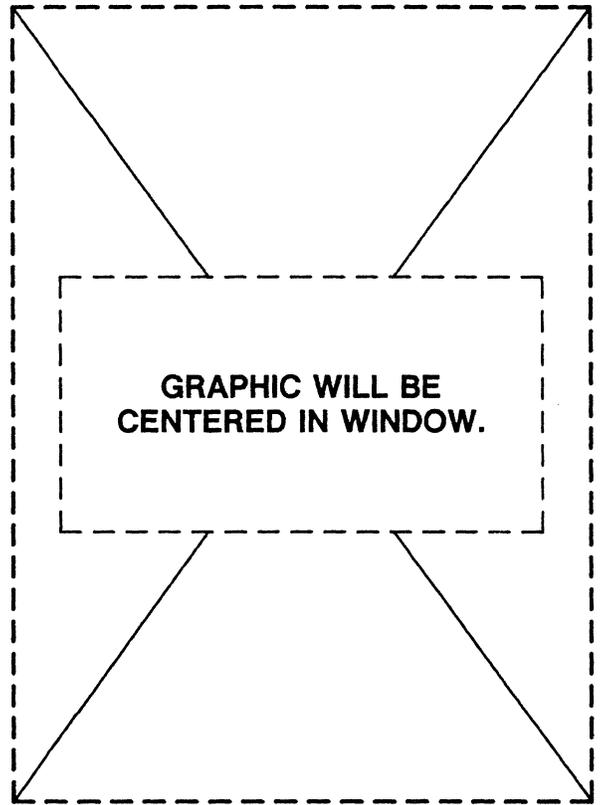
**POINTS: 468 X 300
INCHES: 6 1/2" X 4 1/2"**

3. HALF PAGE

**USABLE GRAPHIC
SPACE (in points.)**

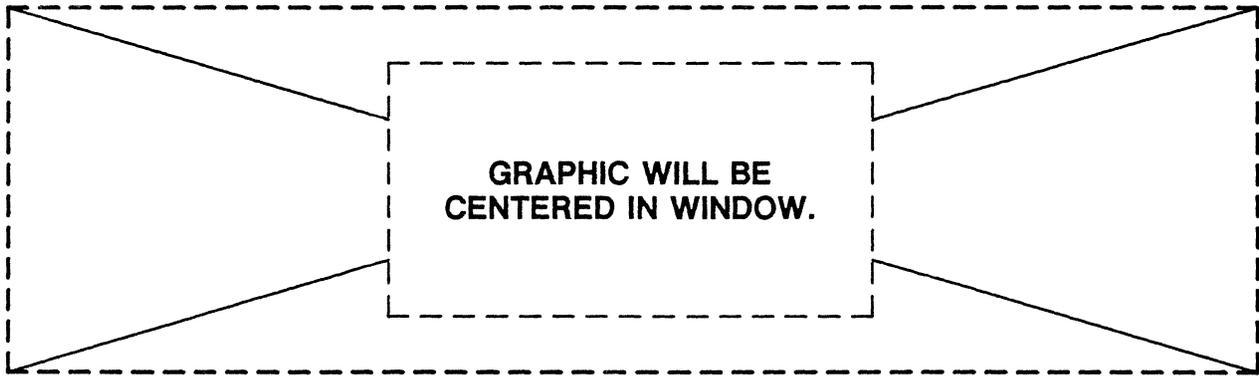
**POINTS: 216 X 648
INCHES: 3" X 9"**





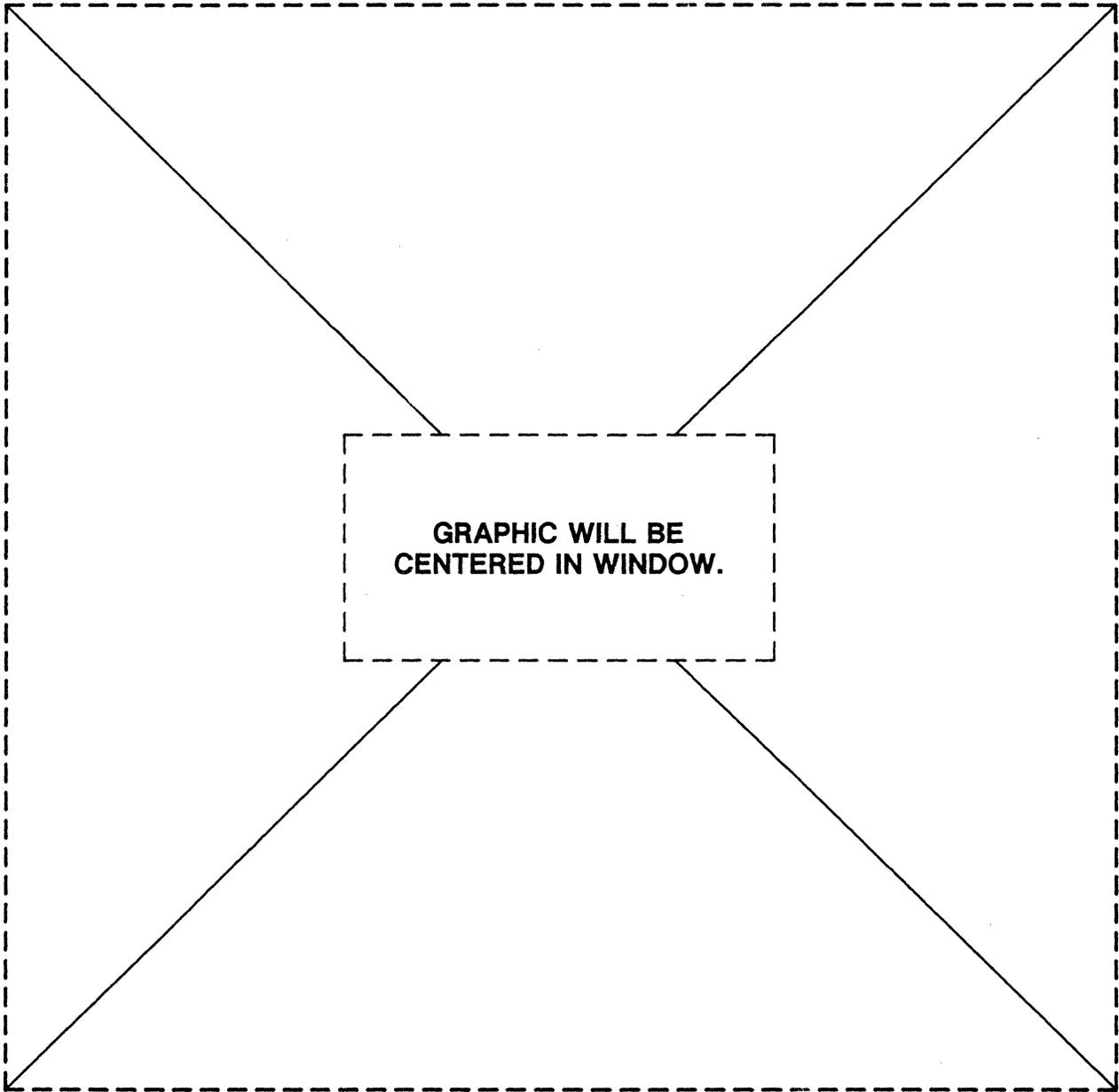
**USABLE GRAPHIC
SPACE (in points.)**

**POINTS: 216 X 300
INCHES: 3" X 4 1/2"**



**USABLE GRAPHIC
SPACE (in points.)**

**POINTS: 468 X 138
INCHES: 6 1/2" X 2 1/4"**



**USABLE GRAPHIC
SPACE (in points.)**

**POINTS: 468 X 462
INCHES: 6 1/2" X 6 3/4"**

7. THREE QUARTER PAGE

HEADING**Text Item Command****\HDn**

Purpose: Causes all following Text Items to be set as a heading. Recalls the values specified and stored through the corresponding HEADING STYLE Setup command such as font and size, etc. Each HEADING Text Item command **must** have a corresponding HEADING STYLE Setup command.

Headings are used during pagination to help determine column and page breaks. For example, the composition program does not allow headings to fall at the bottom of a column.

Format: \HDn

Argument: *n* is a number from 1 to 31. This number corresponds to a HEADING STYLE Setup command.

Example: *Input:* \HD1 CHAPTER ONE

Output: **CHAPTER ONE**

Previously Defined:*Text Style Setup—*

```
\TXT01 FONT=GE STYLE=B HSIZE=0160 VSIZE=0160
LEAD=0180 \END
```

Heading Style Setup—

```
\HDX1 TEXT=01 LM=0000 RM=2500 CM=FL LB=0240
LA=0000 \END
```

Setup Command: \HDXn *string* \END

(Continued on next page.)

HEADING**Text Item Command (*Continued*)****\HDn****Enumerated Headings:**

What is referred to in standard typing as a simple outline style is called, in MECCA III as, "enumerated." An enumerated heading is one with a number, word or other item in the left margin of an indented heading. The following is an enumerated heading:

**2.0 FEATURES, ENHANCEMENTS AND MODIFICATIONS
FOR RELEASE NO. 6.**

Example:

Input: \HD1 A.\END FEATURES FOR RELEASE
 NUMBER SIX\80^ DATED JUNE, 1985
 \nl^(This is an Enumerated Heading.)

 \HD1 FEATURE NUMBER ONE
 \nl^(This heading has no enumeration.)

Note:

The \END is used only when an item is to be set within the Enumeration Boundary. It ends the enumeration copy and starts the heading body copy. If there is no item to be set in the enumeration field, the \END is not necessary.

Output:

**A. FEATURES FOR RELEASE NUMBER SIX —
DATED JUNE, 1985
(This is an Enumerated Heading.)

FEATURE NUMBER ONE
(This heading has no enumeration.)**

MERGE FORM**Text Item Command****\MFORM**

Purpose: This command allows the user to merge information into a standard form previously drawn and stored. It is useful where the form does not change, but the data inside of the form needs constant revisions. This command picks up a drawing, positions it on a page, and merges in data from a data file and inputs the data into the form in the correct positions.

Format: \MFORM *string* \END

Arguments: *string*

DWGFIL=*aa* Name of Drawing to be Merged
 POSFIL=*aa* Name of the Position File
 XPOS=*dpts* X Position of Form on Page
 YPOS=*dpts* Y Position of Form on Page
 KEY=*aa* Key Name
 NBYT=*n* Number Byte Location
 DBYT=*n* Data Byte Location
 ORN=*n* Orientation of Page (Rotation)
 EFMT=*n* Ending Format File Name

Remarks: *NAME=* is the file name given to the form drawing. The standard "file extension" for graphics is ".g". The name cannot exceed 14 alphanumeric characters. Use lowercase characters, file names are case dependent.

POSFIL= is the file name of the position file created when you run the program "formpos". (See Volume 4 — How to Create a Merged Form) The name cannot exceed 14 alphanumeric characters. Use lowercase characters, file names are case dependent.

XPOS= is the position of the upper left corner of the drawing in relation to the left edge of the trimmed page. This value is in tenths of points.

YPOS= is the position of the upper left corner of the drawing in relation to the bottom edge of the trimmed page. This value is in tenths of points.

(Continued on next page.)

MERGE FORM**Text Item Command (*Continued*)****\MFORM**

KEY= Key Name for this particular form. Use any unique name. Key Names are used as identifiers for the form data files. At a glance you can tell what merged form the data file was input for. (\$INVOICE is the Key Name chosen for the Invoice Form Sample in Volume 4)
KEY=\$INVOICE

NBYT= Number Byte Location is the starting column number that the DATA POSITION NUMBER will start in. For example:

\$INVOICE 001
\$INVOICE 002
\$INVOICE 003
\$INVOICE 004

Counting over past the KEY NAME and to the DATA POSITION NUMBER 001, this number starts at column 10, so NBYT=10.

DBYT= Data Byte Location is the starting column number that the DATA TO BE INSERTED will start in. For example:

\$INVOICE 001 NEW COMPANY, INC.
\$INVOICE 002 Suite 900
\$INVOICE 003 1000 Anywhere Lane
\$INVOICE 004 Anywhere, USA 99199

Counting over past the KEY NAME and DATA POSITION NUMBER 001, to the DATA TO BE INSERTED which starts at column 14, so DBYT=14. This is the actual information that is to be inserted into your merged form.

ORN= This parameter allows the user to rotate the form:

- 0 Upright Figure
- 1 Rotate Figure Left 90 degrees

(Continued on next page.)

MERGE FORM**Text Item Command (*Continued*)****\MFORM****Optional Parameter**

EFMT= This is the name of a FORMAT file that is needed to close a form when the form is used in relationship with other technical manual formats. It is used to turn off form rotation for example, or special page heads/feet, etc.

Example: \MFORM DWGFIL=invoice.g POSFIL=invoice.fp
 XPOS=0 YPOS=7953 KEY=\$INVOICE NBYT=10
 DBYT=14 ORN=0 \END

Related Command: \EFORM
 END OF FORM

See Also: “Volume 4 — How to Create a Merged Form”

Merging forms utilizes all parts of the system. Graphics, Format Files, Data Files, Data Positions, etc. Familiarize yourself with each part of the system before attempting Merged Forms.

PARAGRAPH**Text Item Command****\Pn**

Purpose: Causes all following Text Items to be set as a paragraph. Recalls the values specified and stored through the corresponding PARAGRAPH STYLE Setup command such as style and mode, etc. Each PARAGRAPH Text Item command must have a corresponding PARAGRAPH STYLE Setup command.

Format: \Pn

Argument: *n* Is a number from 1 to 31. This number must correspond to a PARAGRAPH STYLE Setup command.

Example: *Input:* \P1 The little girl did not know that her mother was not at home. She called and called for her mother all over the house.

Output: The little girl did not know that her mother was not at home. She called and called for her mother all over the house.

Previously Defined:*Text Style Setup—*

```
\TXT01 FONT=GE STYLE=N HSIZE=0090 VSIZE=0090
LEAD=0120 \END
```

Paragraph Style Setup—

```
\PX01 TEXT=01 LM=0000 RM=2340 CM=JU LB=0240
LA=0000 \END
```

Setup Command: \PX*n string* \END

(Continued on next page.)

PAGE FOOT**Text Item Command****\PFUT n**

Purpose: Causes all following Text Items to be set as a page foot. Recalls the values specified through a corresponding PAGE FOOT STYLE Setup command such as style and mode, etc. Each PAGE FOOT Text Item command **must** have a corresponding PAGE FOOT STYLE Setup command. For more information about Page Foot, see “Using Page Headers and Feet.”

Format: \PFUT n

Argument: n is a number from 1 to 6. This number must correspond to the PAGE FOOT STYLE Setup command needing recalled.

Example: *Input:* \PFUT1 #P/Women's World Magazine
Output: 2/Women's World Magazine

Previously Defined:

Text Style Setup —
\TXT01 FONT=GE STYLE=B HSIZE=0100 VSIZE=0100
LEAD=0120 \END

Page Foot Text Item —
\PFUTX01 TEXT=01 LM=0360 RM=5400 CM=FL
YPOS=0723 \END

Setup Command: \PFUTX n *string* \END

(Continued on next page.)

PAGE HEADING

Text Item Command

\PHED*n*

Purpose: Causes all following Text Items to be set as a page heading. Recalls the values specified through a corresponding PAGE HEADING STYLE Setup command such as style and mode, etc. Each PAGE HEADING Text Item command must have a corresponding PAGE HEADING STYLE Setup command. For more information about Page Headings, see "Using Page Headers and Feet."

Format: \PHED*n*

Argument: *n* is a number from 1 to 6. This number must correspond to the PAGE HEADING Style Setup command needing recalled.

Example: *Input:* \PHED1 The Handyman's Guide\nL^to Carpet Laying

Output: The Handyman's Guide
to Carpet Laying

Previously Defined:

Text Style Setup —
\TXT01 FONT=GE STYLE=B HSIZE=0100 VSIZE=0100
LEAD=0120 \END

Page Heading Text Item —
\PHEDX01 TEXT=01 LM=0360 RM=5400 CM=FL
YPOS=6507 \END

Setup Command: \PHEDX*n string* \END

(Continued on next page.)

TABLE START

Text Item Command

**\TSn, \STP,
\ETP, \TE**

Purpose: Enables the user to create tabular material. It recalls and uses all the parameters defined by the TABLE STYLE Setup command (\TSX*n*). This command also includes the START TAB POSITION sub-command (\STP), which references the TAB Setup commands (\TBX*n*), and the TABLE END commands (\ETP, \TE).

Format: \TS*n*
\STP
tabn tabn tabn

\ETP
\TE

Arguments: *n* is a number from 1 to 20. This number is the TABLE STYLE number assigned to its corresponding TABLE STYLE Setup command.

tabn is the tab positions in the table. This number is the TAB Setup command number assigned to that particular tab (TBX1, TBX2 or TBX3). The numbers do not necessarily have to be consecutive. The \STP tab number string is the ruler line which directs the positioning of the text following.

**Setup
Commands:** \TSX*n string* \END
TABLE STYLE

\TBX*n string* \END
TAB POSITION

See Also: “Chapter 1 — Using Tables” and “Volume 4 — Table Formats”

WHAT IMMEDIATE COMMANDS ARE

Immediate commands are used for special effects such as emphasis on words, phrases or paragraphs. They are called Immediate commands because they take effect immediately. When using a special effect command, insert the desired command at the position in the text where the effect should begin. Use another command to reset the effect back at the point where the effect should cease.

All Immediate commands are automatically canceled each time a new Text Item command begins (i.e., heading, paragraph, table).

Immediate Commands:

Bold \B	Light \L
Backup Center \BC	Light Italic \LI
Backup Flush \BF	Normal \N
Bold Italic \BI	New Line \NL
Change Font \CF	Point Size \PSZ
Change Mode \CM	Reset to Previous Level \R
Down for Subscript \D	Up for Superscript \U
Move Baseline Down \DN	Underline End \UE
First Point Size Reset \F	Move Baseline Up \UP
Leader Fill \FILL	Underline Start \US
Force Justify Line \FJ	Vertical Space \VS
Horizontal Rule \HR	Vertical Size \VSZ
Horizontal Space Relative \HSA	Extra Bold \XB
Horizontal Space Absolute \HSPA	Extra Bold Italic \XBI
Horizontal Size \HSZ	Discretionary Hyphen \-
Italic \I	Special Characters \nnn

BOLD

Immediate Command

\B

Purpose: Enables the user to change to a **BOLD** type style. Bold is a heavy version of the normal type style. This command will stay in effect until another style command or a Text Item command is encountered.

Format: \B^

Argument: None

Example: *Input:* Use the \B^Bold Command \N^to place emphasis on words or sentences. \B^Connect the command to the word you are stressing.

Output: Use the **Bold Command** to place emphasis on words or sentences. **Connect the command to the word you are stressing.**

Other Type

Styles: \BI^ ***Bold Italic*** \N^ Normal
 \I^ *Italic* \XB^ **Extra Bold**
 \L^ Light \XBI^ ***Extra Bold Italic***
 \LI^ *Light Italic*

Note: Type styles are dependent on availability of that style on your system. If you select a style that is not available (such as Light and Extra Bold on the LaserWriter), the system will output the next best thing. For example, if Extra Bold is not available, Bold will be output.

BACKUP CENTER

Immediate Command

\BC

Purpose: This command allows any character or number to back up and center itself on top of the previous character. The two different character widths are centered by the wider character. The command looks for the next two characters following it and centers them on each other.

Format: \BC^

Argument: None

Example: *Input:* My brother's ham radio handle is
 W\BC^O/LFMAN.

Output: My brother's ham radio handle is
 WOLFMAN.

**Related
Command:** \BF^
 BACKUP FLUSH

BACKUP FLUSH

Immediate Command

\BF

Purpose: This command allows any character or number to back up the full distance of the previous character giving a flush-left effect.

Format: \BF^

Argument: None

Example: *Input:* \316^\BF^\DN60^\317^

Output: [

Note: The SPECIAL CHARACTER numbers are \316^ = [and \317^ = [. Check your Special Characters Tables for the correct numbers for your system.

Related

Command: \BC^
 BACKUP CENTER

BOLD ITALIC

Immediate Command

\BI

Purpose: Enables the user to change to a **BOLD ITALIC** type style. Bold Italic is a *heavy, slanted version* of the normal type style. This command will stay in effect until another style command or a Text Item command is encountered.

Format: \BI^

Argument: None

Example:

Input: Use the \BI^Bold Italic Command \N^to place emphasis on words or sentences. \BI^Connect the command to the word you are stressing.

Output: Use the **Bold Italic Command** to place emphasis on words or sentences. **Connect the command to the word you are stressing.**

Other Type Styles:

\B^ Bold	\N^ Normal
\I^ <i>Italic</i>	\XB^ Extra Bold
\L^ Light	\XBI^ Extra Bold Italic
\LI^ <i>Light Italic</i>	

Note: Type styles are dependent on availability of that style on your system. If you select a style that is not available (such as Light and Extra Bold on the LaserWriter), the system will output the next best thing. For example, if Extra Bold is not available, Bold will be output.

CHANGE FONT

Immediate Command

\CF

Purpose: Enables user to Change Font.

Format: \CF *aa*^

Arguments: *aa* are the letters **TI** or **GE**.

These commands will override the generic font called by the current command in effect, but only until the next text item starts.

Example: *Input:* \CF GE^Text will be in Geneva.
 \CF TI^Text will be in Times Roman.

Output: Text will be in Geneva.
 Text will be in Times Roman.

Note: The typefaces available are dependent on the output mode installed with your Mecca III system (i.e., LaserWriter, etc.). Entries like those in the following examples, made from Xenix, will provide a listing of the typefaces currently installed on your system.

LaserWriter: Command Line Entry = *ls /xlate/laser*

APS: Command Line Entry = *ls /xlate/aps*

CHANGE MODE**Immediate Command****\CM**

Purpose: Enables the user to change the composition mode of a paragraph or other Text Item. The composition mode controls how the Text Item will set between the left and the right margins. This command affects the whole Text Item.

Format: \CM *aa*[^]

Arguments: *n* is the new composition mode. The options are:

<i>CE</i>	Center
<i>FL</i>	Flush to the Left Margin
<i>FR</i>	Flush to the Right Margin
<i>JU</i>	Justify at Both Margins

Example: In this example the paragraph was originally set up to be Flush Left. But using the \CM command in the front of the paragraph changes the mode to Center.

Input: \P1 \CM CE^Use the Change Mode command to immediately change the composition mode of a Text Item.

Output: Use the Change Mode command to immediately change the composition mode of a Text Item.

MOVE BASELINE DOWN**Immediate Command****\DN**

Purpose: This command allows the user to immediately lower the baseline of the words following it. It is only in effect until the line wraps; at that point the original leading is restored.

Format: \DN*dpts*^

Argument: *dpts* is the amount in tenths of points the baseline is to be lowered.

Example: *Input:* \P1 To move a word down just use the immediate \DN35^DOWN\UP35^ command.

Output: To move a word down just use the immediate DOWN command.

Related Command: \UP*dpts*^
MOVE BASELINE UP

FIRST POINT SIZE RESET**Immediate Command****\F**

Purpose: This command resets the point size and baseline, after super/subscript, back to the original type size and baseline. When utilizing more than one level of sizes (such as a superscript between subscripts), this command will automatically reset the type back to the original level before it encountered the super/subscript.

Format: \F^

Argument: None

Example:

<i>Input:</i>	Levels of super/subscripts are easy: 1.11 \D^22\U^33\R^ 22 \F^ 1.11.
<i>Output:</i>	Levels of super/subscripts are easy: 1.11 _{22³³22} 1.11.

**Related
Commands:**

\D^
DOWN FOR SUBSCRIPT

\R^
RESET TO PREVIOUS LEVEL

\U^
UP FOR SUPERSCRIPT

LEADER FILL

Immediate Command

\FILL

Purpose: Allows leader dots to be drawn between text in a paragraph.

Format: \FILL^

Argument: None

Remarks: For the \FILL^ command to be used, a PARAGRAPH STYLE Setup command must be defined. This command only works inside a paragraph. The text to the left of the \FILL^ command will set flush left; the text to the right of the \FILL^ command will set flush right.

Example: **Previously Defined:**

```
Paragraph Style Setup —
\PX01 TEXT=01 LM=1000 RM=4000 CM=FL LB=0260
LA=0000 \END
```

Input:

```
\P1 How To Get Started \FILL^3
```

```
\P1 Equipment Maintenance \FILL^10
```

Output:

```
How To Get Started ..... 3
```

```
Equipment Maintenance ..... 10
```

FORCE JUSTIFY LINE**Immediate Command****\FJ**

Purpose: Enables the user to immediately force the current line to end and be justified with all remaining text to start composing on the next baseline.

Format: \FJ^

Argument: None

Examples: This is how the paragraph looks *without* using the FORCE JUSTIFY LINE command and letting the lines justify normally.

Input: \HD1 BEHAVIOR OF GOOD BOYS

\P1 Every good boy does fine most of the time. It is hard to do good behavior all of the time.

Output: **BEHAVIOR OF GOOD BOYS**

Every good boy does fine most of the time. It is hard to do good behavior all of the time.

This is how the paragraph looks using the FORCE JUSTIFY LINE command

Input: \HD1 BEHAVIOR OF GOOD BOYS\FJ^

\P1 Every good boy does fine most of the time. It is hard to do\FJ^good behavior all of the time.

Output: **BEHAVIOR OF GOOD BOYS**

Every good boy does fine most of the time. It is hard to do good behavior all of the time.

Related Command: \NL^
NEW LINE

HORIZONTAL RULE

Immediate Command

\HR

-
- Purpose:** Allows the user to draw a horizontal rule within a paragraph or table. It is used for “fill-in-the-blank” type material.
- Format:** \HR *dpts,dpts*[^]
- Arguments:** *dpts*, is the length of the rule in tenths of points
and
dpts[^] is the height (or weight) of the rule in tenths of points.
- Remarks:** This command draws a horizontal rule the specified length from the current position. Paragraph or table margins can be used to control the starting position. The command must be within a Text Item, it cannot sit alone.
- Example:** In this example, the \HR command will produce a line one inch long (723 tenths of points) with a thickness of one point.
- Input:* \P1 I hereby certify the above to be true to the best of my knowledge on the \HR 723,10[^] day of June, 1985.
- Output:* I hereby certify the above to be true to the best of my knowledge on the _____ day of June, 1985.

HORIZONTAL SPACE RELATIVE**Immediate Command****\HSA**

Purpose: Enables the user to move *Horizontal Space Relative* to current position.

Format: \HSA *dpts*^

Argument: *dpts* is the amount to move from current position in tenths of points

Remarks: This command moves text a specified amount by using an X coordinate (positive or negative), relative to the text's current position. In the example below, a HORIZONTAL SPACE RELATIVE command is used to open up space in a line.

Example: *Input:* There are \HSA 240^ U.S. dry pints per British Imperial fluid ounce.

Output: There are U.S. dry pints per British Imperial fluid ounce.

Another Spacing Command:

\HSPA *dpts*^
HORIZONTAL SPACE ABSOLUTE

HORIZONTAL SPACE ABSOLUTE**Immediate Command****\HSPA**

Purpose: Enables the user to place text at an absolute horizontal position. It is only in effect until the line wraps; at that point the original margin is restored.

Format: \HSPA *dpts*[^]

Argument: *dpts* horizontal position in tenths of points from the current left margin.

Remarks: This command moves to the specified X position. (The current left margin is X = 0.)

Notice how the rules are starting in the same position by using the \HSPA command.

Example:

Input: Name \HSPA 500[^] \HR 360,10[^] \NL[^]
 Address \HSPA 500[^] \HR 360,10[^] \NL[^]
 Phone \HSPA 500[^] \HR 360,10[^]

Output: Name _____
 Address _____
 Phone _____

Related Spacing

Command: \HSA *dpts*[^]
HORIZONTAL SPACE RELATIVE

HORIZONTAL SIZE**Immediate Command****\HSZ**

Purpose: Enables the user to alter Horizontal Size of type.

Format: \HSZ *dpts*[^]

Argument: *dpts* is point size in tenths of points

Remarks: This command alters horizontal set width; can condense or expand: \HSZ 80[^] = horizontal size of 8 points, and \HSZ 140[^] = horizontal size of 14 points.

Example: *Input:* \HSZ 80[^]You are reading an example of 8-point condensed type.

 \HSZ 140[^]You are reading an example of 14-point expanded type.

Output: You are reading an example of 8-point *condensed* type.

 You are reading an example of 14-point *expanded* type.

**Related
Sizing**

Commands: \PSZ *dpts*[^]
 POINT SIZE

 \VSZ *dpts*[^]
 VERTICAL SIZE

ITALIC

Immediate Command

\I

Purpose: Enables the user to change to an *ITALIC* type style. Italic is a *slanted version* of the normal type style. This command will stay in effect until another style command or a Text Item command is encountered.

Format: \I^

Argument: None

Example: *Input:* Use the \I^Italic Command \N^to place emphasis on words or sentences. \I^Connect the command to the word you are stressing.

Output: Use the *Italic Command* to place emphasis on words or sentences. *Connect the command to the word you are stressing.*

**Other
Type
Styles:**

\B^ Bold	\N^ Normal
\BI^ <i>Bold Italic</i>	\XB^ Extra Bold
\L^ Light	\XBI^ <i>Extra Bold Italic</i>
\LI^ <i>Light Italic</i>	

Note: Type styles are dependent on availability of that style on your system. If you select a style that is not available (such as Light and Extra Bold on the LaserWriter), the system will output the next best thing. For example, if Extra Bold is not available, Bold will be output.

LIGHT**Immediate Command****\L**

Purpose: Enables the user to change to a LIGHT type style. Light is a thin version of the normal type style. This command will stay in effect until another style command or a Text Item command is encountered.

Format: \L^

Argument: None

Example: *Input:* Use the \L^ Light Command \N^ to place emphasis on words or sentences.
 \L^ Connect the command to the word or phrase you are stressing.

Output: Use the Light Command to place emphasis on words or sentences. Connect the command to the word or phrase you are stressing.

Other**Type****Styles:**\B^**Bold**

\N^Normal

\BI^**Bold Italic**\XB^**Extra Bold**\I^*Italic*\XBI^**Extra Bold Italic**\LI^*Light Italic*

Note: Type styles are dependent on availability of that style on your system. If you select a style that is not available (such as Light and Extra Bold on the LaserWriter), the system will output the next best thing. For example, if Extra Bold is not available, Bold will be output.

LIGHT ITALIC**Immediate Command****\LI**

Purpose: Enables the user to change to a *LIGHT ITALIC* type style. Light Italic is a *thin, slanted version* of the normal type style. This command will stay in effect until another style command or a Text Item command is encountered.

Format: \LI^

Argument: None

Example: *Input:* Use the \LI^Light Italic Command \N^ to place emphasis on words or sentences. \LI^Connect the command to the word or phrase you are stressing.

Output: Use the *Light Italic Command* to place emphasis on words or sentences. *Connect the command to the word or phrase you are stressing.*

**Other
Type
Styles:**

\B^ Bold	\N^Normal
\BI^ <i>Bold Italic</i>	\XB^ Extra Bold
\I^ <i>Italic</i>	\XBI^ <i>Extra Bold Italic</i>
\L^Light	

Note: Type styles are dependent on availability of that style on your system. If you select a style that is not available (such as Light and Extra Bold on the LaserWriter), the system will output the next best thing. For example, if Extra Bold is not available, Bold will be output.

NORMAL

Immediate Command

\N

Purpose: Enables the user to change to a NORMAL type style. Normal is the type style used in regular composition of type. Most of the copy on this page is in normal type. This command will stay in effect until another style command or a Text Item command is encountered.

Format: \N^

Arguments: None

Example: *Input:* \I^Use the \N^Normal Command \I^to get back to the \N^regular type style, \I^after placing emphasis on words or sentences with another type style. \N^Connect the style command to the word following it.

Output: *Use the Normal Command to get back to the regular type style, after placing emphasis on words or sentences with another type style. Connect the style command to the word following it.*

**Other
Type
Styles:**

\B^ Bold	\LI^ <i>Light Italic</i>
\BI^ Bold Italic	\XB^ Extra Bold
\I^ <i>Italic</i>	\XBI^ Extra Bold Italic
\L^ Light	

Note: Type styles are dependent on availability of that style on your system. If you select a style that is not available (such as Light and Extra Bold on the LaserWriter), the system will output the next best thing. For example, if Extra Bold is not available, Bold will be output.

NEW LINE**Immediate Command**\NL

Purpose: Enables the user to immediately force the current line to end and all remaining text to start composing on the next baseline.

Format: \NL^

Argument: None

Example: *Input:* Mr. George Jones\nNL^
 1115 Grand Ave.\nNL^
 Kansas City, MO 64109

Output: Mr. George Jones
 1115 Grand Ave.
 Kansas City, MO 64109

Note: The NEW LINE command overrides line justification. When the composition program encounters a NEW LINE command, the system immediately stops that line of text (without justifying the line) and drops down to the next baseline.

Related Command: \FJ^
 FORCE JUSTIFY LINE

POINT SIZE

Immediate Command

\PSZ

Purpose: Enables the user to change Point Size.

Format: \PSZ *dpts*^

Argument: *dpts* is point size in tenths of points

Example: *Input:* Every good \PSZ 140^ boy does fine.

Output: Every good boy does fine.

**Related
Sizing**

Commands: \HSZ *dpts*^
HORIZONTAL SIZE

\VSZ *dpts*^
VERTICAL SIZE

RESET TO PREVIOUS LEVEL**Immediate Command****\R**

Purpose: This command allows the user to reset a super/subscript back to the previous level of super/subscript. This is occasionally necessary when working with equations, for example, placing a superscript inside a subscript.

Format: \R^

Argument: None

Example: *Input:* Levels of super/subscripts are easy:\NL^
1.11 \D^22\U^33\R^22 \F^1.11.

Output: Levels of super/subscripts are easy:
1.11 _{22³³22} 1.11.

**Related
Commands:**

\D^
DOWN FOR SUBSCRIPT

\F^
FIRST POINT SIZE RESET

\U^
UP FOR SUPERSCRIPT

UP FOR SUPERSCRIP**Immediate Command**

\U

Purpose: This command allows the user to immediately create superscripts. It raises the baseline and reduces the current point size by 50% for the characters following the command.

Format: \U^

Arguments: None

Example:

Input: One atom of hydrogen-1 has a mass of 1.67×10^{24} g.

Output: One atom of hydrogen-1 has a mass of 1.67×10^{24} g.

**Related
Commands:**

\D^
DOWN FOR SUBSCRIPT

\F^
FIRST POINT SIZE RESET

\R^
RESET TO PREVIOUS LEVEL

UNDERLINE END**Immediate Command****\UE**

Purpose: Enables the user to stop underlining. This command works in conjunction with the UNDERLINE START command (\US^).

Format: \UE^

Arguments: None

Example:

<i>Input:</i>	Underlining is used \US^to place emphasis on words or sentences\UE^. Connect the command to the word or phrase you are stressing.
<i>Output:</i>	Underlining is used <u>to place emphasis on</u> <u>words or sentences.</u> Connect the command to the word or phrase you are stressing.

Setup
Commands: \ULPOS *n*
UNDERLINE POSITION

\ULSIZ *dpts*
UNDERLINE WEIGHT

MOVE BASELINE UP**Immediate Command****\UP**

- Purpose:** This command allows the user to immediately raise the baseline of the word(s) following it. It is only in effect until the line wraps; at that point the original leading is restored.
- Format:** \UP*dpts*^
- Argument:** *dpts* is the amount in tenths of points the baseline is to be raised.
- Example:**
- Input:* \P1 To \UP50^move a word up\DN50^just requires an immediate UP command.
- Output:* To move a word up just requires an immediate UP command.
- Related Command:** \DN*dpts*^
MOVE BASELINE DOWN

UNDERLINE START**Immediate Command****\US**

Purpose: Enables the user to underline a word or words. This command will stay in effect until an UNDERLINE END command (\UE^) is encountered.

Format: \US^

Argument: None

Example:

<i>Input:</i>	Underscoring is used \US^to place emphasis on words or sentences\UE^. Connect the command to the word you are stressing.
<i>Output:</i>	Underscoring is used <u>to place emphasis on words or sentences</u> . Connect the command to the word you are stressing.

Setup

Commands: \ULPOS *n*
UNDERLINE POSITION

\ULSIZ *dpts*
UNDERLINE WEIGHT

VERTICAL SPACE

Immediate Command

\VS

Purpose:	Enables the user to immediately move up or down the page. This command is to be used within Text Items (paragraphs, headings, etc.). It is common to place this command immediately following the last word of the paragraph when using it for additional leading.	
Format:	\VS <i>dpts</i> [^]	
Argument:	<i>dpts</i>	is the amount, in tenths of points, to move text vertically. It can be either a negative or positive value: \VS 90 = move down 9 points. \VS -90 = move up 9 points.
Example:	<i>Input:</i>	<p>\P1 In order to make it easy and clear to know when events happen, we date them.</p> <p>\P1 Fairy tales sometimes begin, "Once upon a time." Such a beginning may work for a fairy tale, but what about the following?</p> <p>\VS120[^]</p> <p>\P1 Once upon a time Columbus discovered America, and later a holiday was established called "Columbus Day."</p> <p>\VS120[^]</p> <p>\P1 The statement about Columbus is true, but as to ...</p>
	<i>Output:</i>	<p>In order to make it easy and clear to know when events happen, we date them.</p> <p>Fairy tales sometimes begin, "Once upon a time." Such a beginning may work for a fairy tale, but what about the following?</p> <p>Once upon a time Columbus discovered America, and later a holiday was established called "Columbus Day."</p> <p>The statement about Columbus is true, but as to ...</p>

VERTICAL SIZE

Immediate Command

\VSZ

Purpose: Enables the user to alter Vertical Size.

Format: `\VSZ dpts^`

Argument: *dpts* is point size in tenths of points

Remarks: This command will alter vertical set width; can reduce or heighten: `\VSZ 140^` = vertical size of 14 points.

Example:

Input: Every good \VSZ 140[^] boy does fine.

Output: Every good boy does fine.

**Related
Sizing**

Commands: `\PSZ dpts^`
POINT SIZE

`\HSZ dpts^`
HORIZONTAL SIZE

EXTRA BOLD**Immediate Command****\XB**

Purpose: Enables the user to change to an **EXTRA BOLD** type style. Extra Bold is a **heavier version** of the bold type style. This command will stay in effect until another style command or a Text Item command is encountered.

Format: \XB^

Arguments: None

Example: *Input:* Use the \XB^Extra Bold Command \N^to place emphasis on words or sentences. \XB^Connect the command to the word or phrase you are stressing.

Output: Use the **Extra Bold Command** to place emphasis on words or sentences. **Connect the command to the word or phrase you are stressing.**

**Other
Type
Styles:**

\B^ Bold	\LI^ <i>Light Italic</i>
\BI^ Bold Italic	\N^Normal
\I^ <i>Italic</i>	\XBI^ Extra Bold Italic
\L^Light	

Note: Type styles are dependent on availability of that style on your system. If you select a style that is not available (such as Light and Extra Bold on the LaserWriter), the system will output the next best thing. For example, if Extra Bold is not available, Bold will be output.

EXTRA BOLD ITALIC**Immediate Command****\XBI**

Purpose: Enables the user to change to an *EXTRA BOLD ITALIC* type style. Extra Bold Italic is a *heavier, slanted version* of the bold type style. This command will stay in effect until another style command or a Text Item command is encountered.

Format: \XBI^

Arguments: None

Example: *Input:* Use the \XBI^Extra Bold Italic Command \N^to place emphasis on words or sentences. \XBI^Connect the command to the word or phrase you are stressing.

Output: Use the *Extra Bold Italic Command* to place emphasis on words or sentences. *Connect the command to the word or phrase you are stressing.*

**Other
Type
Styles:**

\B^Bold	\LI^Light Italic
\BI^Bold Italic	\N^Normal
\I^Italic	\XB^Extra Bold
\L^Light	

Note: Type styles are dependent on availability of that style on your system. If you select a style that is not available (such as Light and Extra Bold on the LaserWriter), the system will output the next best thing. For example, if Extra Bold is not available, Bold will be output.

DISCRETIONARY HYPHEN**Immediate Command**

\-

Purpose: Allows preferred hyphenation at that point in the word. This command overrides the system hyphenation dictionary for that word. If the word does not need to be hyphenated, the command will be ignored.

Format: \-

Argument: None

Example: Place the command directly in the word where you prefer it to break:

sensi\-tivity

Before: The grid system when used with **sen-**sitivity and imagination can produce handsome, well ordered magazine units.

After: The grid system when used with **sensi-**tivity and imagination can produce handsome, well ordered magazine units.

SPECIAL CHARACTERS

Immediate Command

\nnn

- Purpose:** Special characters, such as stars, bullets, daggers, etc., are selected by entering the special character numbers.
- Format:** \nnn^
- Argument:** None
- Example:** Place the command directly where you want it to be within the paragraph, heading or table.
- Input:* Made by Fluffy\111^ Toys, Inc.
- Output:* Made by Fluffy© Toys, Inc.
- See Also:** “Chapter 6 — Special Characters on the LaserWriter for Geneva & Times Roman.”
- Remarks:** To create special characters for your system, refer to “Volume 5 — System Maintenance.”

WHAT PAGINATION COMMANDS ARE

Pagination commands are specific instructions to the composition system. They instruct the system to read a format file or break to a new page where the command is encountered. They give the user control over page breaks, column breaks, page numbering, etc.

Pagination Commands:

Block Begin \BLKB
 Block End \BLKE
 Column Balance Indicator \CBI
 Column Balancing Tolerance \CBT
 Column Description \CD
 Column Vertical Justification \CVJ
 Footnote End \FE
 Footnote Reference \FN
 Footnote Start \FS
 Kerning Switch \KERN
 Letter Spacing Switch \LS
 New Column \NC
 New Even Page \NEP
 New Odd Page \NOP
 New Page \NP
 Sequential Page Numbering #P
 Page Format \PFMT
 Page Number \PN
 Comment *

BLOCK BEGIN/END

Pagination Command

\BLKB n
 \BLKE

- Purpose:** Signifies the start/end of a BLOCK. A Block is a fixed area (width, depth and position) defined by the user to place Text Items within, to keep them together, such as pricing labels.
- Format:** \BLKB n
 Text Items
 \BLKE
- Argument:** n is a number from 1 to 99
 and
 is the number assigned to its corresponding
 BLOCK Setup command.
- Remarks:** Each BLOCK BEGIN must have a corresponding BLOCK Setup command. This allows 99 BLOCK Setup commands *within each separate page format file* (\PFMT) to be predefined and stored for later recall using the BLOCK BEGIN command.
- Warning:** The Block area defined by the user in the BLOCK Setup command must be large enough to accommodate the Text Items surrounded by the BLOCK BEGIN and BLOCK END commands.
- Example:** Enter commands surrounded by blank lines:
 \BLKB1

 \P1 Fine Candies, Inc.

 \P2 Assorted Chocolates

 \P3 \$9.95

 \BLKE
- See Also:** “Using Blocks” found in Chapter 1.
- Setup Command:** \BLKX n *string* \END

COLUMN BALANCING TOLERANCE

Pagination Command

\CBT

Purpose: Enables the user to define the minimum depth of text in first column before column balancing is invoked.

Format: \CBT *dpts*

Argument: *dpts* is the minimum depth of text in first column

Usage: Use in batch composition files where column balancing is required. If the column does not exceed this tolerance, it will not be balanced. This option can be used for pages with minimal text, eliminating the chance of one (or two, etc.) sentences in each column.

See Also: “Volume 4 — Example of a Batch File for a Multiple Page Document”

Related

Commands: \CBI
COLUMN BALANCE INDICATOR

\CVJ
COLUMN VERTICAL JUSTIFICATION

COLUMN DESCRIPTION**Pagination Command****\CD**

Purpose: Directs system as to which column description(s) is currently in use.

This command designates the sequence for column filling and switching as running text is composed. A \CD 1, 2 \END command will cause column 1 to fill, switch to column 2, fill column 2, then close the page, open the next page, and repeat the sequence.

\CD commands can be entered as needed to change column layouts on pages, from 1 column to multiple columns and so forth.

Format: \CD *n*, *n* \END

Arguments: *n* is a value of 1 through 99 and is the COLUMN Number assigned to the corresponding COLUMN Setup command. For a multiple-column page, enter in the number for each COLUMN Setup command.

Example: \COLX01 MINX=2245 MAXX=5245 MINY=0723
MAXY=6507 \END

\CD 1 \END

Enter command on a line by itself surrounded by blank lines.

See Also: "Volume 4 — Example of a Batch File for a Multiple Page Document"

Setup Command: \COLX*n string* \END

FOOTNOTE REFERENCE

Pagination Command

\FN

Purpose: Enables the user to reference footnotes. Footnotes are paragraphs at the bottom of a page that comment on or cite a reference for a designated part of the text. The related command FOOTNOTE START \FS is counted in sequence for each FOOTNOTE REFERENCE \FN that is found.

Format: \FN^

Argument: None

Remarks: Always place your footnote paragraphs directly after the referenced paragraph within your file. Surround your footnote paragraphs with the FOOTNOTE START (\FS) and FOOTNOTE END (\FE) commands. The composition program counts the footnote reference and footnote start commands and places the proper sequenced footnote at the bottom of the column or page that its referenced paragraph is on.

Example: **Previously Defined:**
Text Style Setup —
 \TXT05 FONT=GE STYLE=N HSIZE=0080 VSIZE=0080
 LEAD=0090 \END
Paragraph Style Setup —
 \PX02 TEXT=05 LM=0000 RM=2620 CM=FL LB=0120
 LA=0000 \END

Input: \ P1 "The most extraordinary device is the image
 dissector tube," wrote Ed Shubert.**\FN^

\FS^
 \P2 \HR 720,5
 \P2 ** \I^Optical Systems, \N^May, 1973, p. 30.
 \FE^

Output: "The most extraordinary device is the image
 dissector tube," wrote Ed Shubert.**

** *Optical Systems*, May, 1973, p. 30.

See Also: "Volume 4 — Example of a Batch File for a Multiple Page Document"

FOOTNOTE START/END

Pagination Command

\FS
\FE

Purpose: Enables the user to create footnotes. Footnotes are paragraphs at the bottom of a page that comment on or cite a reference for a designated part of the text. A FOOTNOTE START \FS is counted in sequence for each FOOTNOTE REFERENCE \FN that is found. It is necessary to have a footnote start/end for every footnote reference command that is used.

Format: \FS^
Text Item Paragraph or Table
\FE^

Argument: None

Remarks: This command places the Text Item within the FOOTNOTE START and END at the bottom of the column or page that the reference (\FN) is on. Place your footnote paragraphs directly after the referenced paragraph within your file. Surround your footnote paragraphs with the FOOTNOTE START (\FS) and FOOTNOTE END (\FE) commands. The composition program counts the footnote reference and footnote start commands and places the proper \FS at the bottom of the column or page that its referenced paragraph is on.

Example: **Previously Defined:**
Text Style Setup —
\TXT05 FONT=GE STYLE=N HSIZE=0080 VSIZE=0080
LEAD=0090 \END
Paragraph Style Setup —
\PX02 TEXT=05 LM=0000 RM=2620 CM=FL LB=0120
LA=0000 \END

Input: \ P1 "The most extraordinary device is the image
dissector tube," wrote Ed Shubert.**\FN^

\FS^
\P2 \HR 720,5
\P2 ** \|^Optical Systems, \N^May, 1973, p. 30.
\FE^

Output: "The most extraordinary device is the image
dissector tube," wrote Ed Shubert.**

** *Optical Systems*, May, 1973, p. 30.

See Also: "Volume 4 — Example of a Batch File for a Multiple Page Document"

NEW COLUMN

Pagination Command

\NC

- Purpose:** Enables the user to immediately force a new column.
- Format:** \NC^
- Argument:** None
- Usage:** Use only in batch composition files. Enter command on a line by itself surrounded by blank lines.
- Note:** This command overrides column balancing. When the composition program encounters a NEW COLUMN command, the system immediately ends the last column (without adjusting it) and forces a new column.
- See Also:** "Volume 4 — Example of a Batch File for a Multiple Page Document"

NEW EVEN PAGE

Pagination Command

\NEP

-
- Purpose:** Enables the user to force the next page to be an even page.
- Format:** \NEP^
- Argument:** None
- Usage:** Use only in batch composition files. Enter command on a line by itself surrounded by blank lines.
- Note:** This command may cause a blank ODD page to be typeset.
- See Also:** “Volume 4 — Example of a Batch File for a Multiple Page Document”

**Related
Force Page
Commands:**

\NP^
NEW PAGE

\NOP^
NEW ODD PAGE

NEW ODD PAGE

Pagination Command

\NOP

-
- Purpose:** Enables the user to force the next page to be an odd page.
- Format:** \NOP^
- Argument:** None
- Usage:** Use only in batch composition files. Enter command on a line by itself surrounded by blank lines.
- Note:** This command may cause a blank EVEN page to be typeset.
- See Also:** “Volume 4 — Example of a Batch File for a Multiple Page Document”

**Related
Force Page
Commands:**

\NP^
NEW PAGE

\NEP^
NEW EVEN PAGE

NEW PAGE

Pagination Command

\NP

-
- Purpose:** Enables the user to force a new page.
- Format:** \NP^
- Argument:** None
- Usage:** Use only in batch composition files. Enter command on a line by itself surrounded by blank lines.
- Note:** If no copy is on the forced page, a blank page will NOT be set.
- See Also:** “Volume 4 — Example of Batch File for a Multiple Page Document”

**Related
Force Page
Commands:**

\NEP^
NEW EVEN PAGE

\NOP^
NEW ODD PAGE

PAGE FORMAT

Pagination Command

\PFMT

Purpose: This feature allows composition FORMATS to be created and used whenever needed. FORMAT files are referenced before a document is composed.

Each FORMAT is stored in its own file, using the standard file-naming conventions. FORMAT files are not inserted into your document file but through this command are read and processed when the document file is composed.

Format: \PFMT */path/filename* \END

Argument: */path/* if not in the current directory, specify path levels.

filename is the name of the file you wish to have referenced before composing the document. This name cannot exceed 14 alphanumeric characters. For ease of locating FORMAT files use the file extension “.pfmt.”

Remarks: There is no limit to the number of times a FORMAT file can be used, nor is there a limit to the number of FORMAT files which can be used in a document. Also, a FORMAT file can contain a reference to another FORMAT file.

Once a FORMAT file is created, the Setup commands and Text Items stored in the file can be effectively inserted into the main document file by entering a \PFMT command. This feature permits standard composition formats to be defined and saved for repeated usage. In practice, it is recommended that the job setup parameters for a document be keyed into a FORMAT file. It is also useful to key all lengthy command sequences as individual FORMAT files. Doing this makes the document file more readable and simplifies error correction. If needed, a FORMAT file can contain a reference to another FORMAT file.

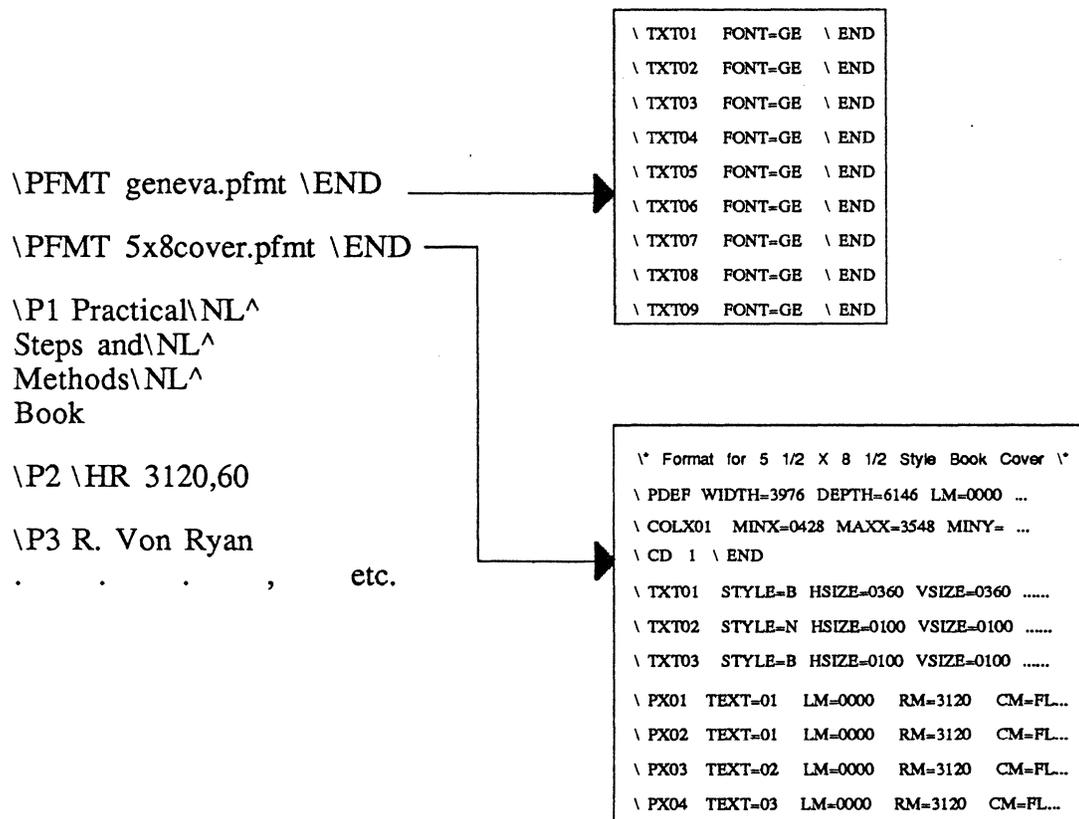
PAGE FORMAT

Pagination Command

\PFMT

Example: \PFMT /formats/letter1.pfmt \END
or
\PFMT letter1.pfmt \END

Embedded \PFMT Commands



MUG021

See Also: "Volume 4 — Page Formats"

PAGE NUMBER

Pagination Command

\PN

Purpose: Enables the user to set a specified page number.

Format: \PN *n*

Argument: *n* page number

Remarks: Resets page number to designated value. This command only provides page numbers when used in conjunction with the #P SEQUENTIAL PAGE NUMBERING Pagination command inside of the PAGE HEADING/FOOT commands.

Example: Enter command on a line by itself:

```
\PFUT1 #P  
\PFUT6 #P  
\PN 1
```

See Also: #P
SEQUENTIAL PAGE NUMBERING

COMMENT

Pagination Command

*

Purpose: This command allows information to be in your file without being typeset. For example, information concerning what is being typeset or why a new page is being forced could be in your file.

Format: * *text* *

Argument: None

Example: *Input:* * If article too long, take out the following paragraph. *

 *P1 Part of their marketing scheme seemed a bit exotic. Brochures were hot pink with splashes of fluorescent greens.

Output: Part of their marketing scheme seemed a bit exotic. Brochures were hot pink with splashes of fluorescent greens.

A SIMPLE FORMAT AND BATCH FILE

Introduction

Our example is of the *bulletin.pfmt* standard format. This format has three heading styles and two paragraph styles in it.

Lets take a look at the format found on page 3:

Comment Pagation *

Using comments in your file is nice for keeping track of what and why you have created something.

Page Definition Setup \PDEF

This command sets up your page cutmarks.

Column Setup \COLX

The image area within your cutmarks is defined with this one.

Column Description Pagation \CD

Since the system allows multiple column setups, this command selects the column setup you want.

Text Style Setup \TXT

Naturally you need type styles, sizes, etc.

Heading Style Setup \HDX

Heading styles are defined here. The only difference between the three is that they are pointing to different type sizes.

Paragraph Style Setup \PX

Paragraph styles are defined here. We need two, one for the regular body copy and one for the bullets.

Underline Position Setup \ULPOS

This command says to place the line 25% below the baseline.

Underline Weight Setup \ULSIZ

This command says to draw all underlines 10 decipoints (1 point).

A SIMPLE FORMAT AND BATCH FILE

Introduction (*Continued*)

Our format is used to create a document that has pieces that look like the example below. These values came from the *bulletin.pfmt* file that I have referenced using the \PFMT PAGE FORMAT command.

Whenever I use the \HD1 command in my text file the type will look like this. TYPE IN UPPERCASE IF NEEDED.

Whenever I use the \HD2 command in my text file the type will look like this. TYPE IN UPPERCASE IF NEEDED.

Whenever I use the \HD3 command in my text file the type will look like this. TYPE IN UPPERCASE IF NEEDED.

The paragraphs look like the following:

Whenever I use the \P1 command in my text file the type will look like this. This paragraph is the regular body copy of the bulletin.

- Whenever I use the \P11 command in my text file the type will look like this. The bullet was created by using the special character command \121.

On the following pages are the format and input files for the “canned” format BULLETIN. If you would like to try a few of the mark-up commands, copy over the *bulletin.pfmt* and *bulletin.data* files and edit them, make a few changes and try them out. Be sure you have read “Chapter 6: Using Batch Files” in Volume 1, first. Instructions for composing batch files are found in that chapter.

BULLETIN STYLE

Format File

* Format for Bulletin Style *

* Page Definition *

\PDEF WIDTH=3976 DEPTH=6146 LM=0000 ORN=0 DUPLEX=N \END

* Column Definition *

\COLX01 MINX=0300 MAXX=3676 MINY=0000 MAXY=5146 LB=0000 \END * Full Page *

* Start Out In Full Page Mode *

\CD 1 \END

* Type Faces For Headers *

\TXT01 STYLE=BI HSIZE=0110 VSIZE=0110 LEAD=0110 \END * HD1 *

\TXT02 STYLE=B HSIZE=0140 VSIZE=0140 LEAD=0140 \END * HD2 *

\TXT03 STYLE=B HSIZE=0120 VSIZE=0120 LEAD=0120 \END * HD3 *

* Type Face For Paragraphs *

\TXT04 STYLE=N HSIZE=0100 VSIZE=0100 LEAD=0110 \END * P1-P11 *

* Header Definitions *

\HDX01 TEXT=01 LM=0000 RM=3376 CM=CE LB=0240 LA=0000 \END * HD1 *

\HDX02 TEXT=02 LM=0000 RM=3376 CM=CE LB=0300 LA=0000 \END * HD2 *

\HDX03 TEXT=03 LM=0000 RM=3376 CM=CE LB=0180 LA=0000 \END * HD3 *

* Paragraph Definitions *

\PX01 TEXT=04 LM=0000 RM=3376 CM=FL LB=0240 LA=0000 \END * P1 *

\PX11 TEXT=04 LM=1120 RM=3376 CM=FL LB=0240 LA=0000 \END * P11-Enumerated Body *

\PX11 EA=Y ETX=04 ELB=1000 ERB=1120 ECM=FL \END

* Underline Definition *

\ULPOS -25

\ULSIZ 010

* Hyphenation Definition *

\HYML 22

* *

BULLETIN STYLE

Input File

\PFMT geneva.pfmt \END

\PFMT bulletin.pfmt \END

\HD1 YOU ARE CORDIALLY INVITED TO ATTEND

\HD1 A HALF-DAY SEMINAR

\HD2 COMPUTER GRAPHICS:

\HD3 THE MANAGEMENT TOOL FOR THE 80's

\P1 Data representation graphics has literally exploded upon the American business and scientific scenes. Decision support graphics may yet prove to be the most valuable people productivity tool for the 80's.

\P1 Some users of business and scientific graphics report being able to absorb up to 600% more data in less time and with less effort. For this reason, boardroom graphic systems are underway in the largest and most profitable U.S. corporations.

\P1 Graphics turns data into information and can facilitate comparisons, reveal trends, consolidate data, focus attention of significant information and communicate a message better than any printout.

\P1 Current applications for computer graphics include:

\P11 \121* \END Financial monitoring

\P11 \121* \END Sales and marketing presentations

\P11 \121* \END Scientific data analysis

\P11 \121* \END Budget vs. actual trends

\P11 \121* \END Research data display

\P1 Business graphics make managers more productive by shortening the decision cycle and reducing the length and number of meetings.

**

**YOU ARE CORDIALLY INVITED TO ATTEND
A HALF-DAY SEMINAR**

**COMPUTER GRAPHICS:
THE MANAGEMENT TOOL FOR THE 80's**

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Current applications for computer graphics include:

- Financial monitoring
- Sales and marketing presentations
- Scientific data analysis
- Budget vs. actual trends
- Research data display

Business graphics make managers more productive by shortening the decision cycle and reducing the length and number of meetings.

AUTOMATIC PARAGRAPH MARK-UP

Batch composition converts a file consisting of Text Items (headings, paragraphs, tables, etc.) into typeset artwork. The composition system automatically defines all Text Items as paragraphs if they are not marked-up as other Text Items.

Each paragraph or string of text must be identified by its PARAGRAPH Text Item command (\P1, \P2, etc.). When there is no PARAGRAPH Text Item command, the composition system dictates the paragraph type (number) by the tab position of the start of the first line of the paragraph.

The system counts blank spaces at the beginning of the line, and depending on the number of blanks, composes the paragraph as a \P1 or \P2, etc. The format file (\PFMT) dictates how each paragraph will look as set up by the PARAGRAPH Setup command (\PXn).

Automatic Paragraph Mark-up is used to create outline-type material using many paragraph types without mark-up interfering with the ease of the data file. Paragraphs 1 through 9 are designated as not enumerated, and paragraphs 11 through 19 as enumerated.

As an example, the following paragraphs are identical, except for the tab position of the first line of each.

Example Paragraphs

Now is the time for all good men to come to the aid of their country. Line one of this paragraph starts in tab position 1. The composition system has recognized this text item as a \P1.

Now is the time for all good men to come to the aid of their country. Line one of this paragraph starts in tab position 5. The composition system has recognized this text item as a \P2.

Now is the time for all good men to come to the aid of their country. Line one of this paragraph starts in tab position 10. The composition system has recognized this text item as a \P3.

(Continued on next page.)

AUTOMATIC PARAGRAPH MARK-UP (Continued)

Enumerated paragraphs, or indented paragraphs with a number, word or other item in the left margin, are similarly handled. The difference is that the enumeration must be separated by at least 2 spaces from the start of the paragraph, and that both the enumeration and the paragraph text must move to new tabs to change the indent value.

Using the sample paragraphs from above, an enumeration will be added to each of them by inserting a number and spaces at the front of the first line.

Example of Enumerated Paragraphs:

- A. Now is the time for all good men to come to the aid of their country. The enumeration starts in tab position 1, the paragraph text starts in tab position 5. The composition system has recognized this text item as a \P11.
 - 1. Now is the time for all good men to come to the aid of their country. The enumeration starts in tab position 5, the paragraph text starts in tab position 10. The composition system has recognized this text item as a \P12.
 - a. Now is the time for all good men to come to the aid of their country. The enumeration starts in tab position 10, the paragraph text starts in tab position 15. The composition system has recognized this text item as a \P13.

The technique of composing indents based on tab position makes paragraph input natural, and increases the readability of the data file.

HOW TO MEASURE LEADING

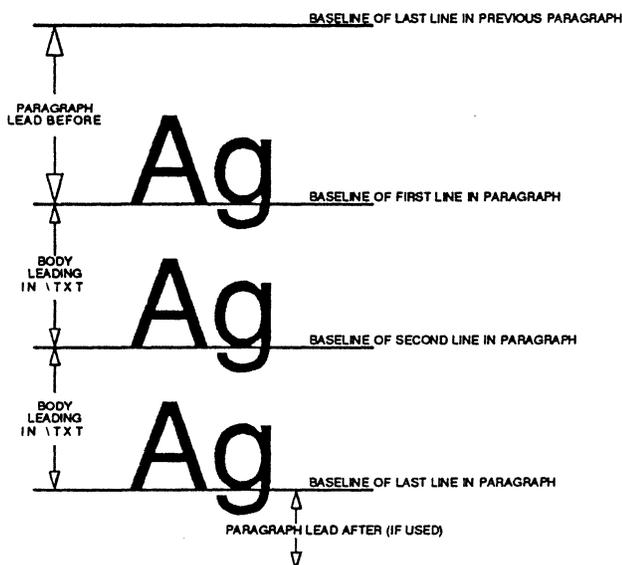
Vertical spacing is controlled by several different commands. The most common is the LEAD argument of the TEXT STYLE Setup command (\TXT). This argument controls the line-to-line vertical spacing within a paragraph, heading, or any given tab field.

An additional control of vertical space are the LB and LA arguments of the Setup commands (\COLX, \HDX, \PX and \TSX). The LB argument controls the vertical space between the baseline of the preceding text and the baseline of the first line of the paragraph or heading. The only exception is when a paragraph or heading occurs at the top of a column, in which case the vertical space before the paragraph or heading is equal to the LEAD of the \TXT command in effect. The LA argument controls the vertical space between the last line of the paragraph or heading and the baseline of the text following.

Hint: It is easier to control your leading if LB is equal to the space you need before paragraphs or headers and LA is set to zero. The reason for this is that LA and LB are cumulative, which can cause unwanted leading.

Text and paragraph leading is illustrated in the example below. Establishing leading is related to the point size and the font being used, as well as other factors of style and design. Body leading is controlled in the TEXT STYLE Setup command (\TXT) by the LEAD value. The paragraph lead before is controlled by the PARAGRAPH STYLE Setup Command (\PX). Each setup command has its own individual parameters for Lead Before (LB) and Lead After (LA).

Measuring Paragraph Leading



MU0012

HOW TO MEASURE LEADING (Continued)

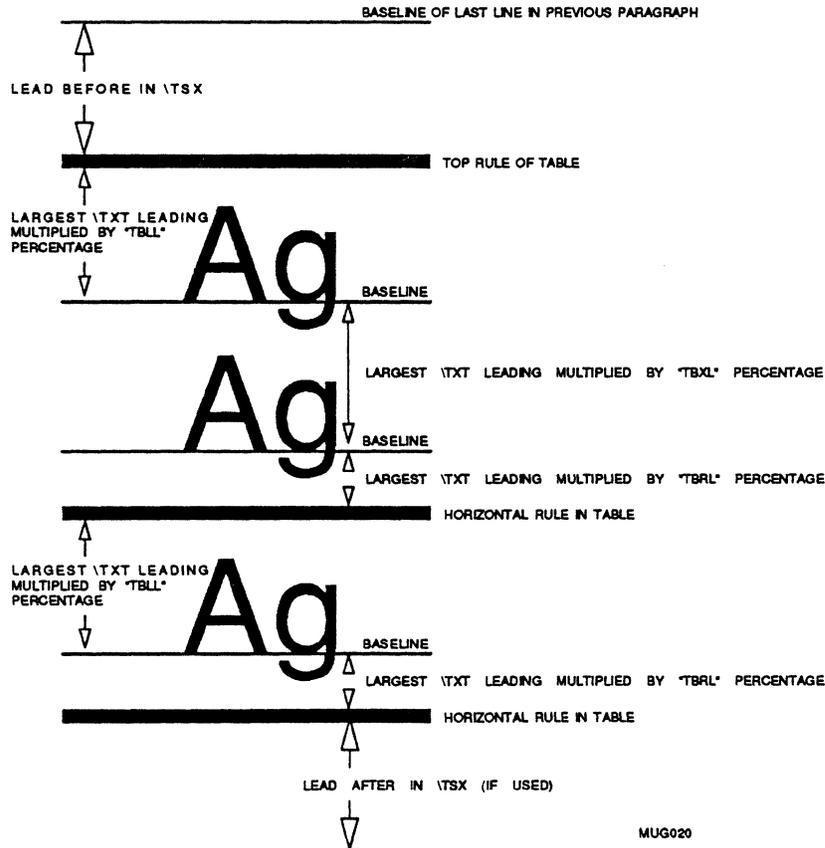
Leading in unruled tables is set by the *largest* LEAD argument of the TEXT STYLE Setup commands (\TXT) selected for that table.

Leading in ruled tables is set by three parameters in the TABLE STYLE Setup (\TSX). The Before Rule Lead parameter (TBLL) gives the percentage of lead executed between the horizontal rule above and the baseline of the text following. (Default is 125% of base lead.)

The After Rule Lead parameter (TBRL) gives the percentage of lead between the baseline of the text and the horizontal rule below. (Default is 50% addition of base lead.)

The Normal Text Item Lead parameter (TBXL) controls the leading between rows of text with no rule in between. (Default is 100% of Base lead.) See the figure following for clarification of where these parameters apply.

Measuring Ruled Table Leading



PARAMETERS & THEIR OPTIONS

Listed in Alphabetical Order

Parameter	Name	Options	Commands Used In
BM= <i>dpts</i>	Bottom Margin		BLKX _n
CM= <i>aa</i>	Composition Mode	FL, FR, CE, JU	HDX _n , PFUTX _n , PHEDX _n , PX _n , TBX _n
COMP= <i>aa</i>	Table Composition Mode	JUST, LINE	TSX _n
CUTS= <i>y/n</i>	Four-corner Cutmarks	Y or N	PDEF
DBYT= <i>n</i>	Data Byte Location	2 to 99	MFORM
DEPTH= <i>dpts</i>	Total Depth of Area		BLKX _n , FIGURE, PDEF
DUPLEX= <i>y/n</i>	Two-sided Printing Switch	Y or N	PDEF
DWGFIL= <i>aa</i>	Name of Drawing to be Merged	FILENAME	MFORM
EA= <i>y/n</i>	Enumeration Allowed Switch	Y or N	HDX _n , PFUTX _n , PHEDX _n , PX _n
ECM= <i>aa</i>	Enumeration Composition Mode	FL, FR, CE, JU	HDX _n , PFUTX _n , PHEDX _n , PX _n
EFMT= <i>aa</i>	Ending Format File Name	FILENAME	MFORM
ELB= <i>dpts</i>	Enumeration Left Boundary		HDX _n , PFUTX _n , PHEDX _n , PX _n
ERB= <i>dpts</i>	Enumeration Right Boundary		HDX _n , PFUTX _n , PHEDX _n , PX _n
ETX= <i>n</i>	Enumeration Text Style Command	1 to 32	HDX _n , PFUTX _n , PHEDX _n , PX _n
FONT= <i>aa</i>	Typeface	TI, GE (user defined)	TXT _n
GUTB= <i>dpts</i>	Bottom Gutter		TBX _n
GUTL= <i>dpts</i>	Left Gutter		TBX _n
GUTR= <i>dpts</i>	Right Gutter		TBX _n
GUTT= <i>dpts</i>	Top Gutter		TBX _n
HSIZE= <i>dpts</i>	Horizontal Point Size		TXT _n
IL1= <i>dpts</i>	First Indent Value		HDX _n , PFUTX _n , PHEDX _n , PX _n
IL2= <i>dpts</i>	Second Indent Value		HDX _n , PFUTX _n , PHEDX _n , PX _n
KEY= <i>aa</i>	Key Name	(user defined)	MFORM
LA= <i>dpts</i>	Leading After		FIGURE, HDX _n , PX _n , TSX _n
LB= <i>dpts</i>	Leading Before		FIGURE, COLX _n , HDX _n , PX _n , TSX _n
LEAD= <i>dpts</i>	Baseline to Baseline Leading		TXT _n
LM= <i>dpts</i>	Left Margin		BLKX _n , HDX _n , PDEF, PFUTX _n , PHEDX _n , PX _n , TBX _n
MAXX= <i>dpts</i>	Maximum X Position of Column		COLX _n
MINX= <i>dpts</i>	Minimum X Position of Column		COLX _n
MAXY= <i>dpts</i>	Maximum Y Position of Column		COLX _n
MINY= <i>dpts</i>	Minimum Y Position of Column		COLX _n
NAME= <i>aa</i>	Name of Drawing to be Merged	FILENAME	FIGURE
NBYT= <i>n</i>	Number Byte Location	1 to 20	MFORM
NLI= <i>n</i>	Number of Times to Use First Value	1 to 99	HDX _n , PFUTX _n , PHEDX _n , PX _n

PARAMETERS & THEIR OPTIONS

Listed in Alphabetical Order (*Continued*)

Parameter	Name	Options	Commands Used In
NO= <i>y/n</i>	New Odd Page at Each Occurrence Switch	Y or N	HDX _{<i>n</i>}
NP= <i>y/n</i>	New Page at Each Occurrence Switch	Y or N	HDX _{<i>n</i>}
ORN= <i>n</i>	Orientation of Page or Figure	0 or 1	FIGURE, MFORM, PDEF
PAGE= <i>aa</i>	Block Pagination Type	FIXED	BLKX _{<i>n</i>}
POS= <i>aa</i>	Position of Figure on Page	IM, FL	FIGURE
POSFIL= <i>aa</i>	Name of the Position File	FILENAME	MFORM
RM= <i>dpts</i>	Right Margin		BLKX _{<i>n</i>} , HDX _{<i>n</i>} , PDEF, PFUTX _{<i>n</i>} , PHEDX _{<i>n</i>} , PX _{<i>n</i>} , TBX _{<i>n</i>}
ROWDEPTH= <i>aa</i>	Row Leading Control Switch	FIX, VAR	TSX _{<i>n</i>}
ROWLEAD= <i>dpts</i>	Fixed Row Leading Value		TSX _{<i>n</i>}
RULES= <i>aa</i>	Draw Rules Around Table	T, B, L, R, NONE	TSX _{<i>n</i>}
SIZE= <i>n</i>	Standard Graphic Sizes	1 to 7	FIGURE
STYLE= <i>aa</i>	Type Style	N, B, XB, I, BI, XBI, LI, L	TXT _{<i>n</i>}
TBLL= <i>n</i>	Before Rule Leading	1 to 900	TSX _{<i>n</i>}
TBRL= <i>n</i>	After Rule Leading	1 to 900	TSX _{<i>n</i>}
TBXL= <i>n</i>	Text Item Lead	1 to 900	TSX _{<i>n</i>}
TEXT= <i>n</i>	Text Style Command Referenced	1 to 32	HDX _{<i>n</i>} , PFUTX _{<i>n</i>} , PHEDX _{<i>n</i>} , PX _{<i>n</i>} , TBX _{<i>n</i>}
TM= <i>dpts</i>	Top Margin		BLKX _{<i>n</i>}
UL= <i>y/n</i>	Underline Switch	Y or N	HDX _{<i>n</i>} , PFUTX _{<i>n</i>} , PHEDX _{<i>n</i>} , PX _{<i>n</i>}
VCM= <i>aa</i>	Vertical Composition Mode	FT, FB, SP, CE	BLKX _{<i>n</i>} , TBX _{<i>n</i>}
VSIZE= <i>dpts</i>	Vertical Point Size		TXT _{<i>n</i>}
WIDTH= <i>dpts</i>	Total Width of Area		BLKX _{<i>n</i>} , FIGURE, PDEF
XPOS= <i>dpts</i>	X Positioning		BLKX _{<i>n</i>} , MFORM
YPOS= <i>dpts</i>	Y Positioning		BLKX _{<i>n</i>} , MFORM, PFUTX _{<i>n</i>} , PHEDX _{<i>n</i>}

RELATED COMMANDS

Listed in Alphabetical Order

Block Commands:	\BLKX <i>n string</i> \END <i>BLOCK Setup</i>
	\BLKB <i>n</i> <i>BLOCK BEGIN</i> <i>Pagination</i>
	\BLKE <i>BLOCK END</i> <i>Pagination</i>
Change Commands:	\CF <i>aa</i> [^] <i>CHANGE FONT</i> <i>Immediate</i>
	\CM <i>aa</i> [^] <i>CHANGE MODE</i> <i>Immediate</i>
Column Commands:	\COLX <i>n string</i> \END <i>COLUMN Setup</i>
	\CD <i>n, n</i> \END <i>COLUMN DESCRIPTION</i> <i>Pagination</i>
	\CBI <i>y/n</i> <i>COLUMN BALANCE INDICATOR</i> <i>Pagination</i>
	\CBT <i>dpts</i> <i>COLUMN BALANCE TOLERANCE</i> <i>Pagination</i>
	\CVJ <i>y/n</i> <i>COLUMN VERTICAL JUSTIFICATION</i> <i>Pagination</i>
Footnote Commands:	\FN <i>FOOTNOTE REFERENCE</i> <i>Pagination</i>
	\FS <i>FOOTNOTE START</i> <i>Pagination</i>
	\FE <i>FOOTNOTE END</i> <i>Pagination</i>

RELATED COMMANDS

Listed in Alphabetical Order (*Continued*)

Force Page Commands:	<p>\NP[^] <i>NEW PAGE</i> <i>Pagination</i></p> <p>\NEP[^] <i>NEW EVEN PAGE</i> <i>Pagination</i></p> <p>\NOP[^] <i>NEW ODD PAGE</i> <i>Pagination</i></p> <p>\NC[^] <i>NEW COLUMN</i> <i>Pagination</i></p>
Heading Commands:	<p>\HDX<i>n string</i> \END <i>HEADING STYLE</i> <i>Setup</i></p> <p>\HD<i>n</i> <i>HEADING</i> <i>Text Item</i></p>
Horizontal Spacing Commands:	<p>\HSA <i>dpts</i>[^] <i>HORIZONTAL SPACE RELATIVE</i> <i>Immediate</i></p> <p>\HSPA <i>dpts</i>[^] <i>HORIZONTAL SPACE ABSOLUTE</i> <i>Immediate</i></p>
Hyphenation Commands:	<p>\- <i>DESCRETIONARY HYPHEN</i> <i>Immediate</i></p> <p>\HYMA <i>n</i> <i>CHARACTERS AFTER HYPHEN</i> <i>Setup</i></p> <p>\HYMB <i>n</i> <i>CHARACTERS BEFORE HYPHEN</i> <i>Setup</i></p> <p>\HYMC <i>n</i> <i>CONSECUTIVE HYPHENS ALLOWED</i> <i>Setup</i></p> <p>\HYML <i>n</i> <i>HYPHENATION WORD LENGTH</i> <i>Setup</i></p>

RELATED COMMANDS

Listed in Alphabetical Order (*Continued*)

Kerning Commands:	<p><code>\KSIZ <i>dpts</i></code> <i>KERNING SIZE Setup</i></p> <p><code>\KERN <i>y/n</i></code> <i>KERNING SWITCH Setup</i></p>
Letter Spacing Commands:	<p><code>\LNOM <i>dpts</i></code> <i>LETTER SPACING VALUE Setup</i></p> <p><code>\LS <i>y/n</i></code> <i>LETTER SPACING SWITCH Setup</i></p>
Merge Commands:	<p><code>\MFORM <i>string</i> \END</code> <i>MERGE FORM Text Item</i></p> <p><code>\EFORM</code> <i>END MERGE FORM Text Item</i></p> <p><code>\FIGURE <i>string</i> \END</code> <i>MERGE FIGURE Text Item</i></p>
Move Baseline Commands:	<p><code>\DN<i>dpts</i>^</code> <i>MOVE BASELINE DOWN Immediate</i></p> <p><code>\UP<i>dpts</i>^</code> <i>MOVE BASELINE UP Immediate</i></p> <p><code>\VS<i>dpts</i>^</code> <i>VERTICAL SPACE Immediate</i></p>
New Line Commands:	<p><code>\NL^</code> <i>NEW LINE Immediate</i></p> <p><code>\FJ^</code> <i>FORCE JUSTIFY LINE Immediate</i></p>

RELATED COMMANDS

Listed in Alphabetical Order

Page Head/Feet Commands:

`\PFUTX`*n string* \END
PAGE FOOT STYLE Setup

`\PFUT`*n*
PAGE FOOT Text Item

`\PHEDX`*n string* \END
PAGE HEAD STYLE Setup

`\PHED`*n*
PAGE HEAD Text Item

`\PN` *n*
PAGE NUMBER Pagination

`\#P`
SEQUENTIAL PAGE NUMBER Pagination

Paragraph Commands:

`\PX`*n string* \END
PARAGRAPH Setup

`\P`*n*
PARAGRAPH Text Item

Point Size Commands:

`\HSZ` *dpts*[^]
HORIZONTAL SIZE Immediate

`\PSZ` *dpts*[^]
POINT SIZE Immediate

`\VSZ` *dpts*[^]
VERTICAL SIZE Immediate

RELATED COMMANDS

Listed in Alphabetical Order (*Continued*)

**Special Effect
Commands:**

`\BC^`
BACKUP CENTER Immediate

`\BF^`
BACKUP FLUSH Immediate

`\FILL^`
LEADER FILL Immediate

`\HR dpts,dpts^`
HORIZONTAL RULE Immediate

`\nnn^`
SPECIAL CHARACTER Immediate

**Superscript/Subscript
Commands:**

`\D^`
DOWN FOR SUBSCRIPT Immediate

`\F^`
FIRST POINT SIZE RESET Immediate

`\R^`
RESET TO PREVIOUS LEVEL Immediate

`\U^`
UP FOR SUPERSCRIPIT Immediate

RELATED COMMANDS

Listed in Alphabetical Order (*Continued*)

Table Commands:	<p>\TSX<i>n string</i> \END <i>TABLE STYLE Setup</i></p> <p>\TBX<i>n string</i> \END <i>TAB POSITION Setup</i></p> <p>\TS<i>n</i> <i>TABLE START Text Item</i></p> <p>\STP <i>tabn</i> <i>START TAB POSITIONS Subcommand</i></p> <p>\ETP <i>END TAB POSITIONS Subcommand</i></p> <p>\TE <i>TABLE END Subcommand</i></p> <p>\STPSV <i>#n tabn</i> <i>SAVE TAB POSITION RULER Subcommand</i></p> <p><i>RULED TABLE COMMANDS</i> : Vertical Rule _ Horizontal Rule + Connecting Horizontal and Vertical Rules</p>
Type Style Commands:	<p>\BI[^] <i>BOLD ITALIC Immediate</i></p> <p>\I[^] <i>ITALIC Immediate</i></p> <p>\L[^] <i>LIGHT Immediate</i></p> <p>\LI[^] <i>LIGHT ITALIC Immediate</i></p> <p>\N[^] <i>NORMAL Immediate</i></p> <p>\XB[^] <i>EXTRA BOLD Immediate</i></p> <p>\XBI[^] <i>EXTRA BOLD ITALIC Immediate</i></p>

RELATED COMMANDS

Listed in Alphabetical Order (*Continued*)

Underline Commands: \US[^]
 UNDERLINE START Immediate

 \UE[^]
 UNDERLINE END Immediate

 \ULPOS *n*
 UNDERLINE POSITION Setup

 \ULSIZ *dpts*
 UNDERLINE WEIGHT Setup

SPECIAL CHARACTERS ON LASERWRITER

Geneva Font

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Char. No.	Light \L	Normal \N	Bold \B	Extra Bold \XB	Light Italics \LI	Italics \I	Bold Italics \BI	X-Bold Italics \XBI	Character Name
1	A	A	A	A	<i>A</i>	<i>A</i>	<i>A</i>	<i>A</i>	UC A
2	B	B	B	B	<i>B</i>	<i>B</i>	<i>B</i>	<i>B</i>	UC B
3	C	C	C	C	<i>C</i>	<i>C</i>	<i>C</i>	<i>C</i>	UC C
4	D	D	D	D	<i>D</i>	<i>D</i>	<i>D</i>	<i>D</i>	UC D
5	E	E	E	E	<i>E</i>	<i>E</i>	<i>E</i>	<i>E</i>	UC E
6	F	F	F	F	<i>F</i>	<i>F</i>	<i>F</i>	<i>F</i>	UC F
7	G	G	G	G	<i>G</i>	<i>G</i>	<i>G</i>	<i>G</i>	UC G
8	H	H	H	H	<i>H</i>	<i>H</i>	<i>H</i>	<i>H</i>	UC H
9	I	I	I	I	<i>I</i>	<i>I</i>	<i>I</i>	<i>I</i>	UC I
10	J	J	J	J	<i>J</i>	<i>J</i>	<i>J</i>	<i>J</i>	UC J
11	K	K	K	K	<i>K</i>	<i>K</i>	<i>K</i>	<i>K</i>	UC K
12	L	L	L	L	<i>L</i>	<i>L</i>	<i>L</i>	<i>L</i>	UC L
13	M	M	M	M	<i>M</i>	<i>M</i>	<i>M</i>	<i>M</i>	UC M
14	N	N	N	N	<i>N</i>	<i>N</i>	<i>N</i>	<i>N</i>	UC N
15	O	O	O	O	<i>O</i>	<i>O</i>	<i>O</i>	<i>O</i>	UC O
16	P	P	P	P	<i>P</i>	<i>P</i>	<i>P</i>	<i>P</i>	UC P
17	Q	Q	Q	Q	<i>Q</i>	<i>Q</i>	<i>Q</i>	<i>Q</i>	UC Q
18	R	R	R	R	<i>R</i>	<i>R</i>	<i>R</i>	<i>R</i>	UC R
19	S	S	S	S	<i>S</i>	<i>S</i>	<i>S</i>	<i>S</i>	UC S
20	T	T	T	T	<i>T</i>	<i>T</i>	<i>T</i>	<i>T</i>	UC T
21	U	U	U	U	<i>U</i>	<i>U</i>	<i>U</i>	<i>U</i>	UC U
22	V	V	V	V	<i>V</i>	<i>V</i>	<i>V</i>	<i>V</i>	UC V
23	W	W	W	W	<i>W</i>	<i>W</i>	<i>W</i>	<i>W</i>	UC W
24	X	X	X	X	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	UC X
25	Y	Y	Y	Y	<i>Y</i>	<i>Y</i>	<i>Y</i>	<i>Y</i>	UC Y
26	Z	Z	Z	Z	<i>Z</i>	<i>Z</i>	<i>Z</i>	<i>Z</i>	UC Z
27	a	a	a	a	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	LC a
28	b	b	b	b	<i>b</i>	<i>b</i>	<i>b</i>	<i>b</i>	LC b
29	c	c	c	c	<i>c</i>	<i>c</i>	<i>c</i>	<i>c</i>	LC c
30	d	d	d	d	<i>d</i>	<i>d</i>	<i>d</i>	<i>d</i>	LC d
31	e	e	e	e	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>	LC e
32	f	f	f	f	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	LC f

SPECIAL CHARACTERS ON LASERWRITER

Geneva Font (*Continued*)

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Char. No.	Light \L	Normal \N	Bold \B	Extra Bold \XB	Light Italics \LI	Italics \I	Bold Italics \BI	X-Bold Italics \XBI	Character Name
33	g	g	g	g	<i>g</i>	<i>g</i>	<i>g</i>	<i>g</i>	LC g
34	h	h	h	h	<i>h</i>	<i>h</i>	<i>h</i>	<i>h</i>	LC h
35	i	i	i	i	<i>i</i>	<i>i</i>	<i>i</i>	<i>i</i>	LC i
36	j	j	j	j	<i>j</i>	<i>j</i>	<i>j</i>	<i>j</i>	LC j
37	k	k	k	k	<i>k</i>	<i>k</i>	<i>k</i>	<i>k</i>	LC k
38	l	l	l	l	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>	LC l
39	m	m	m	m	<i>m</i>	<i>m</i>	<i>m</i>	<i>m</i>	LC m
40	n	n	n	n	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	LC n
41	o	o	o	o	<i>o</i>	<i>o</i>	<i>o</i>	<i>o</i>	LC o
42	p	p	p	p	<i>p</i>	<i>p</i>	<i>p</i>	<i>p</i>	LC p
43	q	q	q	q	<i>q</i>	<i>q</i>	<i>q</i>	<i>q</i>	LC q
44	r	r	r	r	<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>	LC r
45	s	s	s	s	<i>s</i>	<i>s</i>	<i>s</i>	<i>s</i>	LC s
46	t	t	t	t	<i>t</i>	<i>t</i>	<i>t</i>	<i>t</i>	LC t
47	u	u	u	u	<i>u</i>	<i>u</i>	<i>u</i>	<i>u</i>	LC u
48	v	v	v	v	<i>v</i>	<i>v</i>	<i>v</i>	<i>v</i>	LC v
49	w	w	w	w	<i>w</i>	<i>w</i>	<i>w</i>	<i>w</i>	LC w
50	x	x	x	x	<i>x</i>	<i>x</i>	<i>x</i>	<i>x</i>	LC x
51	y	y	y	y	<i>y</i>	<i>y</i>	<i>y</i>	<i>y</i>	LC y
52	z	z	z	z	<i>z</i>	<i>z</i>	<i>z</i>	<i>z</i>	LC z
53	1	1	1	1	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>	One
54	2	2	2	2	<i>2</i>	<i>2</i>	<i>2</i>	<i>2</i>	Two
55	3	3	3	3	<i>3</i>	<i>3</i>	<i>3</i>	<i>3</i>	Three
56	4	4	4	4	<i>4</i>	<i>4</i>	<i>4</i>	<i>4</i>	Four
57	5	5	5	5	<i>5</i>	<i>5</i>	<i>5</i>	<i>5</i>	Five
58	6	6	6	6	<i>6</i>	<i>6</i>	<i>6</i>	<i>6</i>	Six
59	7	7	7	7	<i>7</i>	<i>7</i>	<i>7</i>	<i>7</i>	Seven
60	8	8	8	8	<i>8</i>	<i>8</i>	<i>8</i>	<i>8</i>	Eight
61	9	9	9	9	<i>9</i>	<i>9</i>	<i>9</i>	<i>9</i>	Nine
62	0	0	0	0	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	Zero
63	\$	\$	\$	\$	<i>\$</i>	<i>\$</i>	<i>\$</i>	<i>\$</i>	Dollar
64	¢	¢	¢	¢	<i>¢</i>	<i>¢</i>	<i>¢</i>	<i>¢</i>	Cent

SPECIAL CHARACTERS ON LASERWRITER

Geneva Font (*Continued*)

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Char. No.	Light \L	Normal \N	Bold \B	Extra Bold \XB	Light Italics \LI	Italics \I	Bold Italics \BI	X-Bold Italics \XBI	Character Name
65	&	&	&	&	&	&	&	&	Ampersand
66	:	:	:	:	:	:	:	:	Colon
67	;	;	;	;	;	;	;	;	Semicolon
68	.	.	.	.	.	.	.	.	Period
69	,	,	,	,	,	,	,	,	Comma
70	'	'	'	'	'	'	'	'	Left Single Quote
71	'	'	'	'	'	'	'	'	Rt Single Quote
72	?	?	?	?	?	?	?	?	Question Mark
73	!	!	!	!	!	!	!	!	Exclamation
74	%	%	%	%	%	%	%	%	Percent
75	*	*	*	*	*	*	*	*	Asterisk
76	(	(	(	(	(	(	(	(	Left Paren
77	)	)	)	)	)	)	)	)	Right Paren
78	/	/	/	/	/	/	/	/	Slash
79	-	-	-	-	-	-	-	-	Hyphen
80	—	—	—	—	—	—	—	—	Em Dash
81	-	-	-	-	-	-	-	-	En Dash
82									
83	fi	fi	fi	fi	fi	fi	fi	fi	Ligature fi
84	fl	fl	fl	fl	fl	fl	fl	fl	Ligature fl
85									
86									
87									
88									
89									
90									
91									
92									
93									
94									
95									
96									

SPECIAL CHARACTERS ON LASERWRITER

Geneva Font (*Continued*)

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Char. No.	Light \L	Normal \N	Bold \B	Extra Bold \XB	Light Italics \LI	Italics \I	Bold Italics \BI	X-Bold Italics \XBI	Character Name
97									
98									
99									
100									
101									
102									
103									
104									
105									
106									
107									
108									
109									
110									
111	©	©	©	©	©	©	©	©	Copyright
112	®	®	®	®	®	®	®	®	Registered Trademark
113	™	™	™	™	™	™	™	™	Trademark
114									
115									
116	#	#	#	#	#	#	#	#	Sharp Symbol (Pound)
117	“	“	“	“	“	“	“	“	Left Double Quote
118	”	”	”	”	”	”	”	”	Right Double Quote
119	ı	ı	ı	ı	ı	ı	ı	ı	No Dot i
120	@	@	@	@	@	@	@	@	At Sign
121	•	•	•	•	•	•	•	•	Bullet
122	●	●	●	●	●	●	●	●	Filled Circle
123	°	°	°	°	°	°	°	°	Degree Symbol
124	†	†	†	†	†	†	†	†	Dagger
125	‡	‡	‡	‡	‡	‡	‡	‡	Double Dagger
126	§	§	§	§	§	§	§	§	Section Symbol
127	[[[[[[[[Left Bracket
128]]]]]]]]	Right Bracket

SPECIAL CHARACTERS ON LASERWRITER

Times Roman Font

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Char. No.	Light \L	Normal \N	Bold \B	Extra Bold \XB	Light Italics \LI	Italics \I	Bold Italics \BI	X-Bold Italics \XBI	Character Name
1	A	A	A	A	<i>A</i>	<i>A</i>	<i>A</i>	<i>A</i>	UC A
2	B	B	B	B	<i>B</i>	<i>B</i>	<i>B</i>	<i>B</i>	UC B
3	C	C	C	C	<i>C</i>	<i>C</i>	<i>C</i>	<i>C</i>	UC C
4	D	D	D	D	<i>D</i>	<i>D</i>	<i>D</i>	<i>D</i>	UC D
5	E	E	E	E	<i>E</i>	<i>E</i>	<i>E</i>	<i>E</i>	UC E
6	F	F	F	F	<i>F</i>	<i>F</i>	<i>F</i>	<i>F</i>	UC F
7	G	G	G	G	<i>G</i>	<i>G</i>	<i>G</i>	<i>G</i>	UC G
8	H	H	H	H	<i>H</i>	<i>H</i>	<i>H</i>	<i>H</i>	UC H
9	I	I	I	I	<i>I</i>	<i>I</i>	<i>I</i>	<i>I</i>	UC I
10	J	J	J	J	<i>J</i>	<i>J</i>	<i>J</i>	<i>J</i>	UC J
11	K	K	K	K	<i>K</i>	<i>K</i>	<i>K</i>	<i>K</i>	UC K
12	L	L	L	L	<i>L</i>	<i>L</i>	<i>L</i>	<i>L</i>	UC L
13	M	M	M	M	<i>M</i>	<i>M</i>	<i>M</i>	<i>M</i>	UC M
14	N	N	N	N	<i>N</i>	<i>N</i>	<i>N</i>	<i>N</i>	UC N
15	O	O	O	O	<i>O</i>	<i>O</i>	<i>O</i>	<i>O</i>	UC O
16	P	P	P	P	<i>P</i>	<i>P</i>	<i>P</i>	<i>P</i>	UC P
17	Q	Q	Q	Q	<i>Q</i>	<i>Q</i>	<i>Q</i>	<i>Q</i>	UC Q
18	R	R	R	R	<i>R</i>	<i>R</i>	<i>R</i>	<i>R</i>	UC R
19	S	S	S	S	<i>S</i>	<i>S</i>	<i>S</i>	<i>S</i>	UC S
20	T	T	T	T	<i>T</i>	<i>T</i>	<i>T</i>	<i>T</i>	UC T
21	U	U	U	U	<i>U</i>	<i>U</i>	<i>U</i>	<i>U</i>	UC U
22	V	V	V	V	<i>V</i>	<i>V</i>	<i>V</i>	<i>V</i>	UC V
23	W	W	W	W	<i>W</i>	<i>W</i>	<i>W</i>	<i>W</i>	UC W
24	X	X	X	X	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	UC X
25	Y	Y	Y	Y	<i>Y</i>	<i>Y</i>	<i>Y</i>	<i>Y</i>	UC Y
26	Z	Z	Z	Z	<i>Z</i>	<i>Z</i>	<i>Z</i>	<i>Z</i>	UC Z
27	a	a	a	a	<i>a</i>	<i>a</i>	<i>a</i>	<i>a</i>	LC a
28	b	b	b	b	<i>b</i>	<i>b</i>	<i>b</i>	<i>b</i>	LC b
29	c	c	c	c	<i>c</i>	<i>c</i>	<i>c</i>	<i>c</i>	LC c
30	d	d	d	d	<i>d</i>	<i>d</i>	<i>d</i>	<i>d</i>	LC d
31	e	e	e	e	<i>e</i>	<i>e</i>	<i>e</i>	<i>e</i>	LC e
32	f	f	f	f	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	LC f

SPECIAL CHARACTERS ON LASERWRITER

Times Roman Font (*Continued*)

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Char. No.	Light \L	Normal \N	Bold \B	Extra Bold \XB	Light Italics \LI	Italics \I	Bold Italics \BI	X-Bold Italics \XBI	Character Name
33	g	g	g	g	<i>g</i>	<i>g</i>	<i>g</i>	<i>g</i>	LC g
34	h	h	h	h	<i>h</i>	<i>h</i>	<i>h</i>	<i>h</i>	LC h
35	i	i	i	i	<i>i</i>	<i>i</i>	<i>i</i>	<i>i</i>	LC i
36	j	j	j	j	<i>j</i>	<i>j</i>	<i>j</i>	<i>j</i>	LC j
37	k	k	k	k	<i>k</i>	<i>k</i>	<i>k</i>	<i>k</i>	LC k
38	l	l	l	l	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>	LC l
39	m	m	m	m	<i>m</i>	<i>m</i>	<i>m</i>	<i>m</i>	LC m
40	n	n	n	n	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	LC n
41	o	o	o	o	<i>o</i>	<i>o</i>	<i>o</i>	<i>o</i>	LC o
42	p	p	p	p	<i>p</i>	<i>p</i>	<i>p</i>	<i>p</i>	LC p
43	q	q	q	q	<i>q</i>	<i>q</i>	<i>q</i>	<i>q</i>	LC q
44	r	r	r	r	<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>	LC r
45	s	s	s	s	<i>s</i>	<i>s</i>	<i>s</i>	<i>s</i>	LC s
46	t	t	t	t	<i>t</i>	<i>t</i>	<i>t</i>	<i>t</i>	LC t
47	u	u	u	u	<i>u</i>	<i>u</i>	<i>u</i>	<i>u</i>	LC u
48	v	v	v	v	<i>v</i>	<i>v</i>	<i>v</i>	<i>v</i>	LC v
49	w	w	w	w	<i>w</i>	<i>w</i>	<i>w</i>	<i>w</i>	LC w
50	x	x	x	x	<i>x</i>	<i>x</i>	<i>x</i>	<i>x</i>	LC x
51	y	y	y	y	<i>y</i>	<i>y</i>	<i>y</i>	<i>y</i>	LC y
52	z	z	z	z	<i>z</i>	<i>z</i>	<i>z</i>	<i>z</i>	LC z
53	1	1	1	1	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>	One
54	2	2	2	2	<i>2</i>	<i>2</i>	<i>2</i>	<i>2</i>	Two
55	3	3	3	3	<i>3</i>	<i>3</i>	<i>3</i>	<i>3</i>	Three
56	4	4	4	4	<i>4</i>	<i>4</i>	<i>4</i>	<i>4</i>	Four
57	5	5	5	5	<i>5</i>	<i>5</i>	<i>5</i>	<i>5</i>	Five
58	6	6	6	6	<i>6</i>	<i>6</i>	<i>6</i>	<i>6</i>	Six
59	7	7	7	7	<i>7</i>	<i>7</i>	<i>7</i>	<i>7</i>	Seven
60	8	8	8	8	<i>8</i>	<i>8</i>	<i>8</i>	<i>8</i>	Eight
61	9	9	9	9	<i>9</i>	<i>9</i>	<i>9</i>	<i>9</i>	Nine
62	0	0	0	0	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	Zero
63	\$	\$	\$	\$	<i>\$</i>	<i>\$</i>	<i>\$</i>	<i>\$</i>	Dollar
64	¢	¢	¢	¢	<i>¢</i>	<i>¢</i>	<i>¢</i>	<i>¢</i>	Cent

SPECIAL CHARACTERS ON LASERWRITER

Times Roman Font (*Continued*)

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Char. No.	Light \L	Normal \N	Bold \B	Extra Bold \XB	Light Italics \LI	Italics \I	Bold Italics \BI	X-Bold Italics \XBI	Character Name
65	&	&	&	&	&	&	&	&	Ampersand
66	:	:	:	:	:	:	:	:	Colon
67	;	;	;	;	;	;	;	;	Semicolon
68	.	.	.	.	.	.	.	.	Period
69	,	,	,	,	,	,	,	,	Comma
70	'	'	'	'	'	'	'	'	Left Single Quote
71	'	'	'	'	'	'	'	'	Rt Single Quote
72	?	?	?	?	?	?	?	?	Question Mark
73	!	!	!	!	!	!	!	!	Exclamation
74	%	%	%	%	%	%	%	%	Percent
75	*	*	*	*	*	*	*	*	Asterisk
76	(	(	(	(	(	(	(	(	Left Paren
77	)	)	)	)	)	)	)	)	Right Paren
78	/	/	/	/	/	/	/	/	Slash
79	-	-	-	-	-	-	-	-	Hyphen
80	—	—	—	—	—	—	—	—	Em Dash
81	-	-	-	-	-	-	-	-	En Dash
82									
83	fi	fi	fi	fi	fi	fi	fi	fi	Ligature fi
84	fl	fl	fl	fl	fl	fl	fl	fl	Ligature fl
85									
86									
87									
88									
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91									
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93									
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95									
96									

SPECIAL CHARACTERS ON LASERWRITER

Times Roman Font (*Continued*)

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Char. No.	Light \L	Normal \N	Bold \B	Extra Bold \XB	Light Italics \LI	Italics \I	Bold Italics \BI	X-Bold Italics \XBI	Character Name
97									
98									
99									
100									
101									
102									
103									
104									
105									
106									
107									
108									
109									
110									
111	©	©	©	©	©	©	©	©	Copyright
112	®	®	®	®	®	®	®	®	Registered Trademark
113	™	™	™	™	™	™	™	™	Trademark
114									
115									
116	#	#	#	#	#	#	#	#	Sharp Symbol (Pound)
117	“	“	“	“	“	“	“	“	Left Double Quote
118	”	”	”	”	”	”	”	”	Right Double Quote
119	¡	¡	¡	¡	¡	¡	¡	¡	No Dot i
120	@	@	@	@	@	@	@	@	At Sign
121	•	•	•	•	•	•	•	•	Bullet
122	●	●	●	●	●	●	●	●	Filled Circle
123	°	°	°	°	°	°	°	°	Degree Symbol
124	†	†	†	†	†	†	†	†	Dagger
125	‡	‡	‡	‡	‡	‡	‡	‡	Double Dagger
126	§	§	§	§	§	§	§	§	Section Symbol
127	[	[	[	[	[	[	[	[	Left Bracket
128	]	]	]	]	]	]	]	]	Right Bracket

SPECIAL CHARACTERS ON LASERWRITER

Accessed by Geneva and Times Roman

NO.	CHAR.
129	A
130	B
131	C
132	D
133	E
134	F
135	G
136	H
137	I
138	J
139	K
140	L
141	M
142	N
143	O
144	P
145	Q
146	R
147	S
148	T
149	U
150	V
151	W
152	X
153	Y
154	Z
155	a
156	b
157	c
158	d
159	e
160	f

NO.	CHAR.
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162	h
163	i
164	j
165	k
166	l
167	m
168	n
169	o
170	p
171	q
172	r
173	s
174	t
175	u
176	v
177	w
178	x
179	y
180	z
181	1
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SPECIAL CHARACTERS ON LASERWRITER

Accessed by Geneva and Times Roman (Contd.)

NO.	CHAR.
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268	M
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270	Ξ
271	O
272	Π
273	P
274	Σ
275	T
276	Υ
277	Φ
278	X
279	Ψ
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282	β
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SPECIAL CHARACTERS ON LASERWRITER

Accessed by Geneva and Times Roman (Contd.)

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SPECIAL CHARACTERS ON APS-5

Geneva Font

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Char. No.	Light \L	Normal \N	Bold \B	Extra Bold \XB	Light Italics \LI	Italics \I	Bold Italics \BI	X-Bold Italics \XBI	Character Name
1	A	A	A	A	A	A	A	A	UC A
2	B	B	B	B	B	B	B	B	UC B
3	C	C	C	C	C	C	C	C	UC C
4	D	D	D	D	D	D	D	D	UC D
5	E	E	E	E	E	E	E	E	UC E
6	F	F	F	F	F	F	F	F	UC F
7	G	G	G	G	G	G	G	G	UC G
8	H	H	H	H	H	H	H	H	UC H
9	I	I	I	I	I	I	I	I	UC I
10	J	J	J	J	J	J	J	J	UC J
11	K	K	K	K	K	K	K	K	UC K
12	L	L	L	L	L	L	L	L	UC L
13	M	M	M	M	M	M	M	M	UC M
14	N	N	N	N	N	N	N	N	UC N
15	O	O	O	O	O	O	O	O	UC O
16	P	P	P	P	P	P	P	P	UC P
17	Q	Q	Q	Q	Q	Q	Q	Q	UC Q
18	R	R	R	R	R	R	R	R	UC R
19	S	S	S	S	S	S	S	S	UC S
20	T	T	T	T	T	T	T	T	UC T
21	U	U	U	U	U	U	U	U	UC U
22	V	V	V	V	V	V	V	V	UC V
23	W	W	W	W	W	W	W	W	UC W
24	X	X	X	X	X	X	X	X	UC X
25	Y	Y	Y	Y	Y	Y	Y	Y	UC Y
26	Z	Z	Z	Z	Z	Z	Z	Z	UC Z
27	a	a	a	a	a	a	a	a	LC a
28	b	b	b	b	b	b	b	b	LC b
29	c	c	c	c	c	c	c	c	LC c
30	d	d	d	d	d	d	d	d	LC d
31	e	e	e	e	e	e	e	e	LC e
32	f	f	f	f	f	f	f	f	LC f

SPECIAL CHARACTERS ON APS-5

Geneva Font (*Continued*)

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Char. No.	Light \L	Normal \N	Bold \B	Extra Bold \XB	Light Italics \LI	Italics \I	Bold Italics \BI	X-Bold Italics \XBI	Character Name
33	g	g	g	g	<i>g</i>	<i>g</i>	<i>g</i>	<i>g</i>	LC g
34	h	h	h	h	<i>h</i>	<i>h</i>	<i>h</i>	<i>h</i>	LC h
35	i	i	i	i	<i>i</i>	<i>i</i>	<i>i</i>	<i>i</i>	LC i
36	j	j	j	j	<i>j</i>	<i>j</i>	<i>j</i>	<i>j</i>	LC j
37	k	k	k	k	<i>k</i>	<i>k</i>	<i>k</i>	<i>k</i>	LC k
38	l	l	l	l	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>	LC l
39	m	m	m	m	<i>m</i>	<i>m</i>	<i>m</i>	<i>m</i>	LC m
40	n	n	n	n	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	LC n
41	o	o	o	o	<i>o</i>	<i>o</i>	<i>o</i>	<i>o</i>	LC o
42	p	p	p	p	<i>p</i>	<i>p</i>	<i>p</i>	<i>p</i>	LC p
43	q	q	q	q	<i>q</i>	<i>q</i>	<i>q</i>	<i>q</i>	LC q
44	r	r	r	r	<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>	LC r
45	s	s	s	s	<i>s</i>	<i>s</i>	<i>s</i>	<i>s</i>	LC s
46	t	t	t	t	<i>t</i>	<i>t</i>	<i>t</i>	<i>t</i>	LC t
47	u	u	u	u	<i>u</i>	<i>u</i>	<i>u</i>	<i>u</i>	LC u
48	v	v	v	v	<i>v</i>	<i>v</i>	<i>v</i>	<i>v</i>	LC v
49	w	w	w	w	<i>w</i>	<i>w</i>	<i>w</i>	<i>w</i>	LC w
50	x	x	x	x	<i>x</i>	<i>x</i>	<i>x</i>	<i>x</i>	LC x
51	y	y	y	y	<i>y</i>	<i>y</i>	<i>y</i>	<i>y</i>	LC y
52	z	z	z	z	<i>z</i>	<i>z</i>	<i>z</i>	<i>z</i>	LC z
53	1	1	1	1	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>	One
54	2	2	2	2	<i>2</i>	<i>2</i>	<i>2</i>	<i>2</i>	Two
55	3	3	3	3	<i>3</i>	<i>3</i>	<i>3</i>	<i>3</i>	Three
56	4	4	4	4	<i>4</i>	<i>4</i>	<i>4</i>	<i>4</i>	Four
57	5	5	5	5	<i>5</i>	<i>5</i>	<i>5</i>	<i>5</i>	Five
58	6	6	6	6	<i>6</i>	<i>6</i>	<i>6</i>	<i>6</i>	Six
59	7	7	7	7	<i>7</i>	<i>7</i>	<i>7</i>	<i>7</i>	Seven
60	8	8	8	8	<i>8</i>	<i>8</i>	<i>8</i>	<i>8</i>	Eight
61	9	9	9	9	<i>9</i>	<i>9</i>	<i>9</i>	<i>9</i>	Nine
62	0	0	0	0	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	Zero
63	\$	\$	\$	\$	<i>\$</i>	<i>\$</i>	<i>\$</i>	<i>\$</i>	Dollar
64	¢	¢	¢	¢	<i>¢</i>	<i>¢</i>	<i>¢</i>	<i>¢</i>	Cent

SPECIAL CHARACTERS ON APS-5

Geneva Font (*Continued*)

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Char. No.	Light \L	Normal \N	Bold \B	Extra Bold \XB	Light Italics \LI	Italics \I	Bold Italics \BI	X-Bold Italics \XBI	Character Name
65	&	&	&	&	&	&	&	&	Ampersand
66	:	:	:	:	:	:	:	:	Colon
67	;	;	;	;	;	;	;	;	Semicolon
68	.	.	.	.	.	.	.	.	Period
69	,	,	,	,	,	,	,	,	Comma
70	'	'	'	'	'	'	'	'	Left Single Quote
71	'	'	'	'	'	'	'	'	Rt Single Quote
72	?	?	?	?	?	?	?	?	Question Mark
73	!	!	!	!	!	!	!	!	Exclamation
74	%	%	%	%	%	%	%	%	Percent
75	*	*	*	*	*	*	*	*	Asterisk
76	(	(	(	(	(	(	(	(	Left Paren
77	)	)	)	)	)	)	)	)	Right Paren
78	/	/	/	/	/	/	/	/	Slash
79	-	-	-	-	-	-	-	-	Hyphen
80	—	—	—	—	—	—	—	—	Em Dash
81	-	-	-	-	-	-	-	-	En Dash
82	ff	ff	ff	ff	ff	ff	ff	ff	Ligature ff
83	fi	fi	fi	fi	fi	fi	fi	fi	Ligature fi
84	fl	fl	fl	fl	fl	fl	fl	fl	Ligature fl
85	ffi	ffi	ffi	ffi	ffi	ffi	ffi	ffi	Ligature ffi
86	ffl	ffl	ffl	ffl	ffl	ffl	ffl	ffl	Ligature ffl
87	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	One Eighth
88	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	Three Eighths
89	5/8	5/8	5/8	5/8	5/8	5/8	5/8	5/8	Five Eighths
90	7/8	7/8	7/8	7/8	7/8	7/8	7/8	7/8	Seven Eighths
91	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	One Fourth
92	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	One Half
93	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	Three Fourths
94	1/3	1/3	1/3	1/3	1/3	1/3	1/3	1/3	One Third
95	2/3	2/3	2/3	2/3	2/3	2/3	2/3	2/3	Two Thirds
96	¹	¹	¹	¹	¹	¹	¹	¹	Superior One

SPECIAL CHARACTERS ON APS-5

Geneva Font (*Continued*)

\nnn

Char. No.	Light \L	Normal \N	Bold \B	Extra Bold \XB	Light Italics \LI	Italics \I	Bold Italics \BI	X-Bold Italics \XBI	Character Name
97	2	2	2	2	2	2	2	2	Superior Two
98	3	3	3	3	3	3	3	3	Superior Three
99	4	4	4	4	4	4	4	4	Superior Four
100	5	5	5	5	5	5	5	5	Superior Five
101	6	6	6	6	6	6	6	6	Superior Six
102	7	7	7	7	7	7	7	7	Superior Seven
103	8	8	8	8	8	8	8	8	Superior Eight
104	9	9	9	9	9	9	9	9	Superior Nine
105	0	0	0	0	0	0	0	0	Superior Zero
106	\$	\$	\$	\$	\$	\$	\$	\$	Superior Dollar
107	¢	¢	¢	¢	¢	¢	¢	¢	Superior Cent
108	.	.	.	.	.	.	.	.	Superior Period
109	—	—	—	—	—	—	—	—	One Point Baseline Rule
110	|	|	|	|	|	|	|	|	One Point Vertical Rule
111	©	©	©	©	©	©	©	©	Copyright
112	®	®	®	®	®	®	®	®	Registered Trademark
113	™	™	™	™	™	™	™	™	Trademark
114	.	.	.	.	.	.	.	.	One En Leader
115	..	..	..	..	..	..	..	..	Two Em Leader
116	#	#	#	#	#	#	#	#	Sharp Symbol (Pound)
117	“	“	“	“	“	“	“	“	Left Double Quote
118	”	”	”	”	”	”	”	”	Right Double Quote
119	ı	ı	ı	ı	ı	ı	ı	ı	No Dot i
120	@	@	@	@	@	@	@	@	At Sign
121	•	•	•	•	•	•	•	•	Bullet
122	●	●	●	●	●	●	●	●	Filled Circle
123	°	°	°	°	°	°	°	°	Degree Symbol
124	†	†	†	†	†	†	†	†	Dagger
125	‡	‡	‡	‡	‡	‡	‡	‡	Double Dagger
126	§	§	§	§	§	§	§	§	Section Symbol
127	[	[	[	[	[	[	[	[	Left Bracket
128	]	]	]	]	]	]	]	]	Right Bracket

SPECIAL CHARACTERS ON APS-5

Times Roman Font

\nnn

Char. No.	Light \L	Normal \N	Bold \B	Extra Bold \XB	Light Italics \LI	Italics \I	Bold Italics \BI	X-Bold Italics \XBI	Character Name
1	A	A	A	A	A	A	A	A	UC A
2	B	B	B	B	B	B	B	B	UC B
3	C	C	C	C	C	C	C	C	UC C
4	D	D	D	D	D	D	D	D	UC D
5	E	E	E	E	E	E	E	E	UC E
6	F	F	F	F	F	F	F	F	UC F
7	G	G	G	G	G	G	G	G	UC G
8	H	H	H	H	H	H	H	H	UC H
9	I	I	I	I	I	I	I	I	UC I
10	J	J	J	J	J	J	J	J	UC J
11	K	K	K	K	K	K	K	K	UC K
12	L	L	L	L	L	L	L	L	UC L
13	M	M	M	M	M	M	M	M	UC M
14	N	N	N	N	N	N	N	N	UC N
15	O	O	O	O	O	O	O	O	UC O
16	P	P	P	P	P	P	P	P	UC P
17	Q	Q	Q	Q	Q	Q	Q	Q	UC Q
18	R	R	R	R	R	R	R	R	UC R
19	S	S	S	S	S	S	S	S	UC S
20	T	T	T	T	T	T	T	T	UC T
21	U	U	U	U	U	U	U	U	UC U
22	V	V	V	V	V	V	V	V	UC V
23	W	W	W	W	W	W	W	W	UC W
24	X	X	X	X	X	X	X	X	UC X
25	Y	Y	Y	Y	Y	Y	Y	Y	UC Y
26	Z	Z	Z	Z	Z	Z	Z	Z	UC Z
27	a	a	a	a	a	a	a	a	LC a
28	b	b	b	b	b	b	b	b	LC b
29	c	c	c	c	c	c	c	c	LC c
30	d	d	d	d	d	d	d	d	LC d
31	e	e	e	e	e	e	e	e	LC e
32	f	f	f	f	f	f	f	f	LC f

SPECIAL CHARACTERS ON APS-5

Times Roman Font (*Continued*)

\nnn

Char. No.	Light \L	Normal \N	Bold \B	Extra Bold \XB	Light Italics \LI	Italics \I	Bold Italics \BI	X-Bold Italics \XBI	Character Name
33	g	g	g	g	<i>g</i>	<i>g</i>	<i>g</i>	<i>g</i>	LC g
34	h	h	h	h	<i>h</i>	<i>h</i>	<i>h</i>	<i>h</i>	LC h
35	i	i	i	i	<i>i</i>	<i>i</i>	<i>i</i>	<i>i</i>	LC i
36	j	j	j	j	<i>j</i>	<i>j</i>	<i>j</i>	<i>j</i>	LC j
37	k	k	k	k	<i>k</i>	<i>k</i>	<i>k</i>	<i>k</i>	LC k
38	l	l	l	l	<i>l</i>	<i>l</i>	<i>l</i>	<i>l</i>	LC l
39	m	m	m	m	<i>m</i>	<i>m</i>	<i>m</i>	<i>m</i>	LC m
40	n	n	n	n	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	LC n
41	o	o	o	o	<i>o</i>	<i>o</i>	<i>o</i>	<i>o</i>	LC o
42	p	p	p	p	<i>p</i>	<i>p</i>	<i>p</i>	<i>p</i>	LC p
43	q	q	q	q	<i>q</i>	<i>q</i>	<i>q</i>	<i>q</i>	LC q
44	r	r	r	r	<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>	LC r
45	s	s	s	s	<i>s</i>	<i>s</i>	<i>s</i>	<i>s</i>	LC s
46	t	t	t	t	<i>t</i>	<i>t</i>	<i>t</i>	<i>t</i>	LC t
47	u	u	u	u	<i>u</i>	<i>u</i>	<i>u</i>	<i>u</i>	LC u
48	v	v	v	v	<i>v</i>	<i>v</i>	<i>v</i>	<i>v</i>	LC v
49	w	w	w	w	<i>w</i>	<i>w</i>	<i>w</i>	<i>w</i>	LC w
50	x	x	x	x	<i>x</i>	<i>x</i>	<i>x</i>	<i>x</i>	LC x
51	y	y	y	y	<i>y</i>	<i>y</i>	<i>y</i>	<i>y</i>	LC y
52	z	z	z	z	<i>z</i>	<i>z</i>	<i>z</i>	<i>z</i>	LC z
53	1	1	1	1	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>	One
54	2	2	2	2	<i>2</i>	<i>2</i>	<i>2</i>	<i>2</i>	Two
55	3	3	3	3	<i>3</i>	<i>3</i>	<i>3</i>	<i>3</i>	Three
56	4	4	4	4	<i>4</i>	<i>4</i>	<i>4</i>	<i>4</i>	Four
57	5	5	5	5	<i>5</i>	<i>5</i>	<i>5</i>	<i>5</i>	Five
58	6	6	6	6	<i>6</i>	<i>6</i>	<i>6</i>	<i>6</i>	Six
59	7	7	7	7	<i>7</i>	<i>7</i>	<i>7</i>	<i>7</i>	Seven
60	8	8	8	8	<i>8</i>	<i>8</i>	<i>8</i>	<i>8</i>	Eight
61	9	9	9	9	<i>9</i>	<i>9</i>	<i>9</i>	<i>9</i>	Nine
62	0	0	0	0	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	Zero
63	\$	\$	\$	\$	<i>\$</i>	<i>\$</i>	<i>\$</i>	<i>\$</i>	Dollar
64	¢	¢	¢	¢	<i>¢</i>	<i>¢</i>	<i>¢</i>	<i>¢</i>	Cent

SPECIAL CHARACTERS ON APS-5

Times Roman Font (Continued)

\nnn

Char. No.	Light \L	Normal \N	Bold \B	Extra Bold \XB	Light Italics \LI	Italics \I	Bold Italics \BI	X-Bold Italics \XBI	Character Name
65	&	&	&	&	&	&	&	&	Ampersand
66	:	:	:	:	:	:	:	:	Colon
67	;	;	;	;	;	;	;	;	Semicolon
68	.	.	.	.	.	.	.	.	Period
69	,	,	,	,	,	,	,	,	Comma
70	'	'	'	'	'	'	'	'	Left Single Quote
71	'	'	'	'	'	'	'	'	Rt Single Quote
72	?	?	?	?	?	?	?	?	Question Mark
73	!	!	!	!	!	!	!	!	Exclamation
74	%	%	%	%	%	%	%	%	Percent
75	*	*	*	*	*	*	*	*	Asterisk
76	(	(	(	(	(	(	(	(	Left Paren
77	)	)	)	)	)	)	)	)	Right Paren
78	/	/	/	/	/	/	/	/	Slash
79	-	-	-	-	-	-	-	-	Hyphen
80	—	—	—	—	—	—	—	—	Em Dash
81	-	-	-	-	-	-	-	-	En Dash
82	ff	ff	ff	ff	ff	ff	ff	ff	Ligature ff
83	fi	fi	fi	fi	fi	fi	fi	fi	Ligature fi
84	fl	fl	fl	fl	fl	fl	fl	fl	Ligature fl
85	ffi	ffi	ffi	ffi	ffi	ffi	ffi	ffi	Ligature ffi
86	ffl	ffl	ffl	ffl	ffl	ffl	ffl	ffl	Ligature ffl
87	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/8	One Eighth
88	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	Three Eighths
89	5/8	5/8	5/8	5/8	5/8	5/8	5/8	5/8	Five Eighths
90	7/8	7/8	7/8	7/8	7/8	7/8	7/8	7/8	Seven Eighths
91	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	One Fourth
92	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	One Half
93	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	Three Fourths
94	1/3	1/3	1/3	1/3	1/3	1/3	1/3	1/3	One Third
95	2/3	2/3	2/3	2/3	2/3	2/3	2/3	2/3	Two Thirds
96	1	1	1	1	1	1	1	1	Superior One

SPECIAL CHARACTERS ON APS-5

Times Roman Font (*Continued*)

\nnn

Char. No.	Light \L	Normal \N	Bold \B	Extra Bold \XB	Light Italics \LI	Italics \I	Bold Italics \BI	X-Bold Italics \XBI	Character Name
97	²	²	²	²	²	²	²	²	Superior Two
98	³	³	³	³	³	³	³	³	Superior Three
99	⁴	⁴	⁴	⁴	⁴	⁴	⁴	⁴	Superior Four
100	⁵	⁵	⁵	⁵	⁵	⁵	⁵	⁵	Superior Five
101	⁶	⁶	⁶	⁶	⁶	⁶	⁶	⁶	Superior Six
102	⁷	⁷	⁷	⁷	⁷	⁷	⁷	⁷	Superior Seven
103	⁸	⁸	⁸	⁸	⁸	⁸	⁸	⁸	Superior Eight
104	⁹	⁹	⁹	⁹	⁹	⁹	⁹	⁹	Superior Nine
105	⁰	⁰	⁰	⁰	⁰	⁰	⁰	⁰	Superior Zero
106	₳	₳	₳	₳	₳	₳	₳	₳	Superior Dollar
107	¢	¢	¢	¢	¢	¢	¢	¢	Superior Cent
108	.	.	.	.	.	.	.	.	Superior Period
109	—	—	—	—	—	—	—	—	One Point Baseline Rule
110	|	|	|	|	|	|	|	|	One Point Vertical Rule
111	©	©	©	©	©	©	©	©	Copyright
112	®	®	®	®	®	®	®	®	Registered Trademark
113	™	™	™	™	™	™	™	™	Trademark
114	.	.	.	.	.	.	.	.	One En Leader
115	..	..	..	..	..	..	..	..	Two Em Leader
116	#	#	#	#	#	#	#	#	Sharp Symbol (Pound)
117	“	“	“	“	“	“	“	“	Left Double Quote
118	”	”	”	”	”	”	”	”	Right Double Quote
119	ı	ı	ı	ı	ı	ı	ı	ı	No Dot i
120	@	@	@	@	@	@	@	@	At Sign
121	•	•	•	•	•	•	•	•	Bullet
122	●	●	●	●	●	●	●	●	Filled Circle
123	°	°	°	°	°	°	°	°	Degree Symbol
124	†	†	†	†	†	†	†	†	Dagger
125	‡	‡	‡	‡	‡	‡	‡	‡	Double Dagger
126	§	§	§	§	§	§	§	§	Section Symbol
127	[	[	[	[	[	[	[	[	Left Bracket
128	]	]	]	]	]	]	]	]	Right Bracket

SPECIAL CHARACTERS ON APS-5

Accessed by Geneva and Times Roman

Math Symbols Font

NO.	CHAR.
129	A
130	B
131	C
132	D
133	E
134	F
135	G
136	H
137	I
138	J
139	K
140	L
141	M
142	N
143	O
144	P
145	Q
146	R
147	S
148	T
149	U
150	V
151	W
152	X
153	Y
154	Z
155	a
156	b
157	c
158	d
159	e
160	f

NO.	CHAR.
161	g
162	h
163	i
164	j
165	k
166	l
167	m
168	n
169	o
170	p
171	q
172	r
173	s
174	t
175	u
176	v
177	w
178	x
179	y
180	z
181	1
182	2
183	3
184	4
185	5
186	6
187	7
188	8
189	9
190	0
191	\$
192	¢

NO.	CHAR.
193	&
194	:
195	;
196	.
197	,
198	'
199	'
200	?
201	!
202	%
203	*
204	(
205)
206	/
207	-
208	—
209	-
210	{
211	}
212	[
213]
214	.
215	#
216	"
217	"
218	@
219	—
220	—
221	°
222	†
223	‡
224	'

NO.	CHAR.
225	'
226	''
227	''
228	'
229	'
230	\
231	●
232	+
233	-
234	×
235	÷
236	=
237	≠
238	≈
239	≡
240	≠
241	<
242	>
243	≠
244	≠
245	±
246	'
247	:
248	~
249	"
250	'
251	'
252	'
253	
254	■
255	■
256	■

SPECIAL CHARACTERS ON APS-5

Accessed by Geneva and Times Roman (Contd.)

Greek Font

NO.	CHAR.	NO.	CHAR.	NO.	CHAR.	NO.	CHAR.
257	A	289	ι	321	ι	353	■
258	B	290	κ	322	—	354	■
259	Γ	291	λ	323	→	355	ε
260	Δ	292	μ	324	←	356	↓
261	E	293	ν	325	↑	357	⊖
262	Z	294	ξ	326	↓	358	∞
263	H	295	ο	327	⊙	359	ó
264	Θ	296	π	328	∫	360	⇒
265	I	297	ρ	329	∫	361	⇒
266	K	298	σ	330	∫	362	•
267	Λ	299	τ	331	∫	363	í
268	M	300	υ	332	Γ	364	J
269	N	301	φ	333	L	365	˘
270	Ξ	302	χ	334	∫	366	≡
271	O	303	ψ	335	∫	367	≠
272	Π	304	ω	336	|	368	>
273	P	305	F	337	√	369	f
274	Σ	306	θ	338	˘	370	ℓ
275	T	307	∇	339	≈	371	℞
276	Υ	308	/	340	∫	372	ℵ
277	Φ	309	f	341	∫	373	&
278	X	310	<	342	∇	374	∇
279	Ψ	311	∫	343	∇	375	/
280	Ω	312	∫	344	∇	376	∞
281	α	313	∫	345	∇	377	'
282	β	314	∫	346	∇	378	"
283	γ	315	~	347	∇	379	˘
284	δ	316	Γ	348	∇	380	˘
285	ε	317	L	349	⊕	381	Γ
286	ζ	318	∫	350	▷	382	L
287	η	319	∫	351	˘	383	∫
288	θ	320	|	352	□	384	∫

SPECIAL CHARACTERS ON APS-5

Accessed by Geneva and Times Roman (Contd.)

Pi Font

NO.	CHAR.
385	●
386	●
387	•
388	•
389	•
390	▶
391	▶
392	▶
393	◀
394	◀
395	◀
396	▲
397	▲
398	▲
399	▼
400	▼
401	▼
402	▷
403	▷
404	▷
405	◁
406	◁
407	◁
408	△
409	△
410	△
411	▽
412	▽
413	▽
414	■
415	■
416	■

NO.	CHAR.
417	□
418	□
419	□
420	☒
421	☒
422	☒
423	©
424	©
425	®
426	®
427	®
428	®
429	★
430	★
431	★
432	☆
433	☆
434	☆
435	◆
436	◆
437	◆
438	◇
439	◇
440	◇
441	►
442	►
443	•
444	◄
445	◄
446	•
447	▲
448	▲

NO.	CHAR.
449	•
450	◄
451	◄
452	•
453	◁
454	◁
455	•
456	◁
457	◁
458	•
459	◁
460	◁
461	•
462	◁
463	◁
464	•
465	○
466	●
467	●
468	●
469	●
470	●
471	○
472	○
473	⊕
474	⊗
475	□
476	■
477	△
478	▲
479	▽
480	▼

NO.	CHAR.
481	◇
482	◆
483	○
484	●
485	○
486	●
487	◇
488	◆
489	⊠
490	⊠
491	•
492	•
493	●
494	⇒
495	⇒
496	↑
497	↓
498	⇒
499	↓
500	≡
501	≡
502	⊖
503	⊖
504	▽
505	⊠
506	⊠
507	⌘
508	⌘
509	&
510	h
511	ψ
512	ℓ

TEXT EDITING WITH VI

VI filename.extension

Opens a file for editing.

a

Places the user in “append” mode to input new material. Press [Esc] when you are finished.

i

Places the user in “insert” mode to insert a new character or additional material between existing characters. Press [Esc] when you are finished.

r

Places the user in “overstrike” mode. Press [Esc] when you are finished.

x

Deletes characters at the cursor position. Press [Esc] when you are finished.

Esc

Stops modes “append, insert, delete and overstrike”.

o

Opens a new line in the file.

:q!

Discards last edits, “quit”.

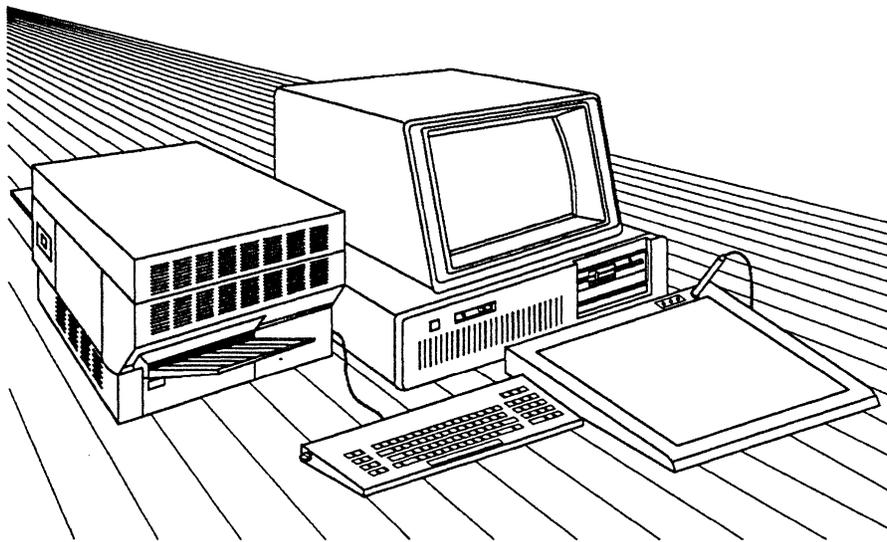
:x

Saves file with new edits.

MECCA III

Electronic Desktop Publishing System

USER'S GUIDE



VOLUME 4

PAGE FORMATS, TABLES AND FORMS

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Technical reference material by Debra Poll, instructional material by Isaac Bonewits; edited and produced on MECCA III by Isaac Bonewits.

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Introduction

What Are Page Formats

Page formats are files created to store specific page style setup commands.

The format file contains the main setups for the document, such as page size, column sizes, font and point sizes, leading, paragraph margins, and vertical leading throughout the document. Also, hyphenation controls, underlining controls, letter spacing and kerning are stored in format files.

These commands once defined are stored in a file. Using the \PFMT PAGE FORMAT Pagination command (a copy of it is on page 5) the setup file is read and processed when the document file is composed. This allows setups to be maintained in one file, in one location.

The setups could be in your document file, but then whenever you wanted to change a setup, you would not know immediately where it was or if that was the only place it existed. It would become hard to “manage change” doing it that way.

For example, you may have several files in your document, one for each chapter. When a change in the setup is needed, like changing a point size for a paragraph style, it can easily be done for the whole book, and controlled, by having one Page Format file with all document files for that project referencing the same format file.

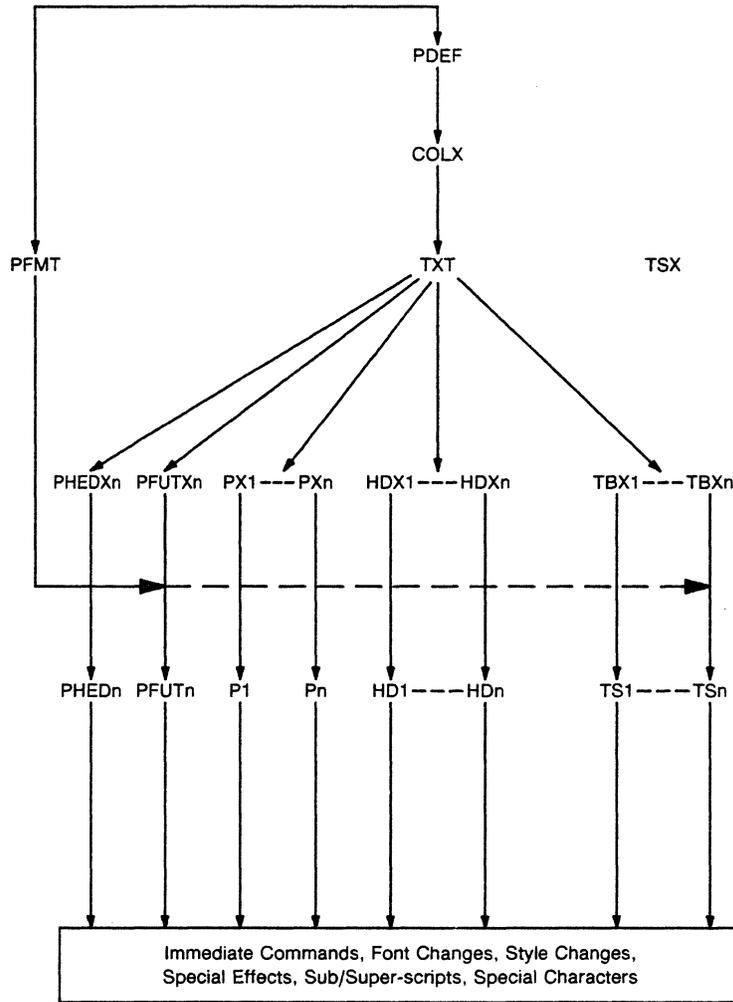
Format files do not necessarily have to be directed at “Page Setups” only. If there are table setups that can be placed in a format file (like our TABLE FORMATS) and referenced through a format file, it makes the document file easier to edit without that setup mark-up getting in the way.

Page format files can also be copied and modified to build a library of stored setups. This naturally increases productivity. This is what we have done to produce the “canned” formats that are available in the system.

In this book you have Page Formats for numerous types of printed material, bulletins, news ads, resumes, business letters, actual documents from the cover to the index. Each one of these formats can be modified to customize it to your specifications.

There are also Table Formats which can be pulled into your document and modified or use them as is.

The diagram below of the Command Hierarchy illustrates the proper order of commands when creating a format. You will notice that we used this structure with our formats.



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Command Hierarchy

What Setup Commands Are

Setup commands are necessary to define the page properties and type characteristics. These commands are used to build format files.

Once defined the information is stored and retrieved through the PAGE FORMAT command \PFMT.

A List of the Setup Commands in Order of Normal Usage

Page Definition Setup \PDEF

This command sets up your page cutmarks.

Column Setup \COLX

The image area within your cutmarks is defined with this one.

Text Style Setup \TXT

Naturally you need type styles, sizes, etc.

Header Style Setup \HDX

Header styles are defined here. Remember Headers are used to help the system determine page breaks.

Paragraph Style Setup \PX

Paragraph styles are defined here.

Page Heads/Feet Setup \PHEDX and \PFUTX

Running Page Heads and Feet, used for Page Number, Book Title, etc.

Hyphenation Setups \HYMA, \HYMB, \HYMC, \HYML

These commands control hyphenation for the document.

Word Spacing Setups \HMIN, \HMAX, \HNOM

These commands control word spacing for the document.

Letter Spacing Setups \LNOM, \LS

These commands control letterspacing for the document.

Kerning Setups \KERN, \KSIZ

These commands control kerning for the document.

Underlining Setups \ULPOS, \ULSIZ

These commands control underlines in paragraphs.

Block Setup \BLKX

Here we position individual blocks on the page.

Table Setup \TSX

Here we decide what type of tables we have in our document.

Tab Setups \TSX

Tab positions for tables could be placed here instead of in the text file.

On the following page is a copy of the \PFMT command reference material, and an example of usage. This command can be very useful once the concept is understood. Take time to read through this material. Also, read Volume 1, "Chapter 6: Using Batch Files and Page Formats". This chapter explains how to compose text files.

PAGE FORMAT

Pagination Command

\PFMT

Purpose: This feature allows composition FORMATS to be created and used whenever needed. FORMAT files are referenced before a document is composed.

Each FORMAT is stored in its own file, using the standard file-naming conventions. FORMAT files are not inserted into your document file but through this command are read and processed when the document file is composed.

Format: \PFMT */path/filename* \END

Argument: */path/* if not in the current directory, specify path levels.

filename is the name of the file you wish to have referenced before composing the document. This name cannot exceed 14 alphanumeric characters. For ease of locating FORMAT files use the file extension “.pfmt.”

Remarks: There is no limit to the number of times a FORMAT file can be used, nor is there a limit to the number of FORMAT files which can be used in a document. Also, a FORMAT file can contain a reference to another FORMAT file.

Once a FORMAT file is created, the Setup commands and Text Items stored in the file can be effectively inserted into the main document file by entering a \PFMT command. This feature permits standard composition formats to be defined and saved for repeated usage. In practice, it is recommended that the job setup parameters for a document be keyed into a FORMAT file. It is also useful to key all lengthy command sequences as individual FORMAT files. Doing this makes the document file more readable and simplifies error correction. If needed, a FORMAT file can contain a reference to another FORMAT file.

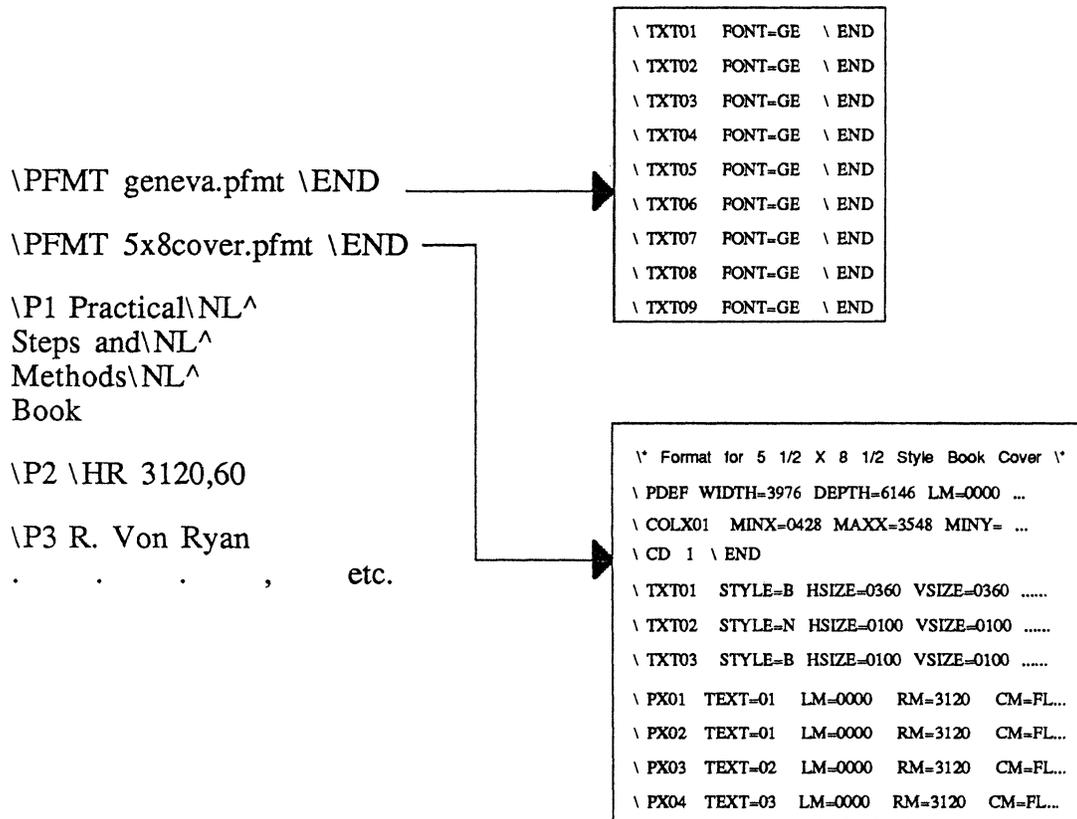
PAGE FORMAT

Pagination Command

\PFMT

Example: \PFMT /formats/letter1.pfmt \END
or
\PFMT letter1.pfmt \END

Embedded \PFMT Commands



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See Also: "Volume 4 — Page Formats"

How to Create a New Format

There are several beginning steps that need to be done first before we can start creating our format, that is to make sure we have all of the necessary tools at hand, and the necessary information calculated. Tools needed are: Pencil, Scratch Paper, Caculator, Points Measuring Tool, Type Size Spec Sheet and a Rough Sample of the Page Layout.

When figuring out our information remember to use decipoints.
723 decipoints = 1 inch, 120 decipoints = 1 pica.

For example, to figure the measurements of a standard 8 1/2 x 11 inch page in decipoints, multiply 8.5 x 0723 = 6145.5 (round off to 6146), the depth would be 11 x 0723 = 7953.

These are the questions that need answered.

WIDTH of Page from Cutmark to Cutmark =
DEPTH of Page from Cutmark to Cutmark =
Number of Columns on a Page =
IMAGE AREA WIDTH for each Column Specified Above =
Inside Margin Width on Odd Page =
Outside Margin Width on Odd Page =
What Type Styles are going to be used? Text Styles (Combinations of Fonts, Point Sizes and Lead)

Determining Text Items

What are the Text Items which make up your document? Headings, Paragraphs, Tables, Figures.

To determine Text Items lets take a look at your document.

Number of Headings. Look at each Main and Sub-heading and mark down differences. If the point size, lead before, composition mode, indents, or margins change, then count it as a separate heading. Remember, the difference in headings and paragraphs are; 1) headings are used by the composition system to help determine page breaks, (i.e., a heading can not fall alone at the bottom of a column); 2) a heading has force page parameters that can be turned on.

Number of Paragraphs. Look at each paragraph and mark down differences. If the point size, lead before, composition mode, indents, or margins change, then count it as a separate paragraph.

Determining How Many Columns You Need

Now, to accommodate your headings and paragraphs, how many columns do you need to setup? To figure this out look at your layout and answer the questions below.

Does everything fit within one measure? It may be a different composition mode or indented but when allowed to fill its measure do all items fall within one column? If so, you need 1 column setup. (COLX1)

Does your material start in the left hand column, (COLX1) fill that column and flow to the top of the next column on that page (COLX2) fill column 2, then close the page, open the next page and repeat the sequence? For each column on your page, you need a column setup.

Is there a main Chapter Heading or something similar that spans across the full page (COLX1) with two columns (COLX2 and COLX3) underneath? If the answer is yes, then a column setup must be made to accommodate the full measure Text Item. Also, two other columns need to be created for the first of the two columns and also the second of the two columns. This would mean you would need 3 columns setup altogether.

Now that we know what our layout consists of, number of paragraphs, columns on a page, etc., we are ready to create our own format.

Creating the Format

The easiest way is to always start out with a base format, so go through the Page Formats and select the format that is closest to the new one you are going to create. We will use it as our base to start out with and modify it to your needs.

Copy the format file you have selected and rename it a new format name. Be sure to use the file extension “.pfmt”.

Edit your new file and start modifying it from the top to the bottom, be sure to read each line and check all parameters. If there is anything you do not understand, look up that command in Volume Two — Batch Composition User’s Guide and read over the reference material for that specific command.

Your format will probably need the following commands:

Comment Pagnation *

Using comments in your file is nice for keeping track of what and why you have created something.

Page Definition Setup \PDEF

This command sets up your page cutmarks.

Column Setup \COLX

The image area within your cutmarks is defined with this one. You need a COLX for each column type in your document.

Column Description Pagnation \CD

Since the system allows multiple column setups, this command selects the column setup you want to start out with. When the column style changes, just place another CD in your document file at that point.

Text Style Setup \TXT

Naturally you need type styles, sizes, etc. One for each variance.

Header Style Setup \HDX

Header styles are defined here. Remember Headers are used to help the system determine page breaks.

Paragraph Style Setup \PX

Paragraph styles are defined here. Also, one for each different type of paragraph.

Page Heads/Feet Setup \PHEDX and \PFUTX

Running Page Heads and Feet, used for Page Number, Book Title, etc. Page Head/Feet commands are just like paragraph commands except that they contain a YPOS to allow you to go outside of the column area and they are also connected to EVEN and ODD pages.

After you have finished editing your format file, save it, create an input file and use the \PFMT command to reference your new format. Use your Text Item commands \P (PARAGRAPH), \HD (HEADING), etc. to point your material to the right setup and your on your way. If you don't like the results, modify your format until you get it to your liking. Once your format is finalized, you'll never have to bother with it again, but will be able to use it over and over.

EXAMPLE OF A BATCH FILE USING BLOCKS

Introduction

A BLOCK is a fixed area (width, depth and position) defined by the user to place Text Items within, to keep them together. This technique comes in handy for step-and-repeat type jobs.

Our example is of pricing labels. Each individual label is a BLOCK with four paragraph styles inside: 1) the company name which needs to stand out using a large point size that is Bold Italic; 2) the candy assortment which is a slightly smaller point size and Bold; 3) the package weight using a point size even smaller and Flush Left instead of Centered like the two above; 4) and the package price that is Flush Right and on the same baseline as the weight, creating a centered effect for that line, but leaving space between the two items for easy readability.

This same kind of technique can be used for mailing labels, coupons, name tags, business cards, etc., any type of job where each individual BLOCK is basically the same, but the information inside needs changed. BLOCKs allow the user to position individual items on the page allowing maximum usage of the page image area with the ease of a text file. This relieves the graphics portion of MECCA III to do other things.

On the next page is a format file named *8labels.pfmt*. It is the setup file that positions the BLOCKs and holds the type sizes, paragraph styles, etc.

The format uses the following commands:

Comment Pagnation *

Using comments in your file is nice for keeping track of what and why you have created something.

Page Definition Setup \PDEF

This command sets up your page cutmarks.

Column Setup \COLX

The image area within your cutmarks is defined with this one.

Column Description Pagnation \CD

Since the system allows multiple column setups, this command selects the column setup you want.

Text Style Setup \TXT

Naturally you need type styles, sizes, etc.

Paragraph Style Setup \PX

Paragraph styles are defined here. We need four in our example.

Hyphenation Word Length Setup \HYML

This command turns off hyphenation.

Block Setup \BLKX

Here we position each individual label on the page.

EXAMPLE OF A BATCH FILE USING BLOCKS

Format File

```
\* 8LABELS FORMAT \*
\* Page Definition \*
\PDEF WIDTH=3960 DEPTH=6145 \END
\* Column Setup \*
\COLX1 MINX=0000 MAXX=3960 MINY=0000 MAXY=6145 \END \* Using Full Page \*
\* Column Description Selected \*
\CD 1 \END
\* Type Faces for Paragraphs \*
\TXT01 STYLE=BI HSIZE=0160 VSIZE=0160 LEAD=0180 \END \* P1 \*
\TXT02 STYLE=B HSIZE=0140 VSIZE=0140 LEAD=0160 \END \* P2 \*
\TXT03 STYLE=B HSIZE=0120 VSIZE=0120 LEAD=0140 \END \* P3 and P4 \*
\* Paragraph Definitions \*
\PX1 TEXT=01 LM=0000 RM=1500 CM=CE LB=0170 \END \* Company Name \*
\PX2 TEXT=02 LM=0000 RM=1500 CM=CE LB=0170 \END \* Candy Assortment \*
\PX3 TEXT=03 LM=0360 RM=1500 CM=FL LB=0170 \END \* Package Weight \*
\PX4 TEXT=03 LM=0000 RM=1140 CM=FR LB=0000 \END \* Package Price \*
\* Hyphenation Definition \*
\HYML 22
```

EXAMPLE OF A BATCH FILE USING BLOCKS

Format File *(Continued)*

* BLOCK Setups *

\BLKX1 WIDTH=1500 DEPTH=1080 VCM=CE \END * Top Left Label *
\BLKX1 XPOS=1500 YPOS=5090 \END

\BLKX2 WIDTH=1500 DEPTH=1080 VCM=CE \END * Second Left Label *
\BLKX2 XPOS=3000 YPOS=5090 \END

\BLKX3 WIDTH=1500 DEPTH=1080 VCM=CE \END * Third Left Label *
\BLKX3 XPOS=1500 YPOS=4920 \END

\BLKX4 WIDTH=1500 DEPTH=1080 VCM=CE \END * Fourth Left Label *
\BLKX4 XPOS=3000 YPOS=4920 \END

\BLKX5 WIDTH=1500 DEPTH=1080 VCM=CE \END * Top Right Label *
\BLKX5 XPOS=1500 YPOS=3840 \END

\BLKX6 WIDTH=1500 DEPTH=1080 VCM=CE \END * Second Right Label *
\BLKX6 XPOS=3000 YPOS=3840 \END

\BLKX7 WIDTH=1500 DEPTH=1080 VCM=CE \END * Third Right Label *
\BLKX7 XPOS=1500 YPOS=2760 \END

\BLKX8 WIDTH=1500 DEPTH=1080 VCM=CE \END * Fourth Right Label *
\BLKX8 XPOS=3000 YPOS=2760 \END

* *

EXAMPLE OF A BATCH FILE USING BLOCKS

Input File

\PFMT times.pfmt \END

\PFMT 8labels.pfmt \END

\BLKB1

\P1 Fine Candies. Inc.
\P2 Assorted Chocolates
\P3 1 lb. \P4 \$4.95
\BLKE

\BLKB2

\P1 Fine Candies. Inc.
\P2 Assorted Chocolates
\P3 2 lbs. \P4 \$9.95
\BLKE

\BLKB3

\P1 Fine Candies. Inc.
\P2 Assorted Creams
\P3 1 lb. \P4 \$4.95
\BLKE

\BLKB4

\P1 Fine Candies. Inc.
\P2 Assorted Creams
\P3 2 lb. \P4 \$9.95
\BLKE

\BLKB5

\P1 Fine Candies. Inc.
\P2 Dark Chocolates
\P3 1 lb. \P4 \$4.95
\BLKE

\BLKB6

\P1 Fine Candies. Inc.
\P2 Dark Chocolates
\P3 2 lbs. \P4 \$9.95
\BLKE

\BLKB7

\P1 Fine Candies. Inc.
\P2 Chocolate Covered Nuts
\P3 1 lb. \P4 \$4.95
\BLKE

\BLKB8

\P1 Fine Candies. Inc.
\P2 Chocolate Covered Nuts
\P3 2 lbs. \P4 \$9.95
\BLKE

EXAMPLE OF A BATCH FILE USING BLOCKS

Final Product

Sample of BLOCK Usage

<p><i>Fine Candies, Inc.</i> Assorted Chocolates 1 lb. \$4.95</p>	<p><i>Fine Candies, Inc.</i> Assorted Chocolates 2 lbs. \$9.95</p>
<p><i>Fine Candies, Inc.</i> Assorted Creams 1 lb. \$4.95</p>	<p><i>Fine Candies, Inc.</i> Assorted Creams 2 lb. \$9.95</p>
<p><i>Fine Candies, Inc.</i> Dark Chocolates 1 lb. \$4.95</p>	<p><i>Fine Candies, Inc.</i> Dark Chocolates 2 lbs. \$9.95</p>
<p><i>Fine Candies, Inc.</i> Chocolate Covered Nuts 1 lb. \$4.95</p>	<p><i>Fine Candies, Inc.</i> Chocolate Covered Nuts 2 lbs. \$9.95</p>

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Note: The rules were drawn to show each block outline for reference only.

EXAMPLE OF A MULTIPLE PAGE DOCUMENT

Introduction

Batch files were developed to assist in the production of large volumes of printed materials. Input and editing of text is computer-assisted, allowing word processing capabilities for maximum efficiency during data capture and subsequent revision.

Once the user completes the input and editing procedures, the batch program processes all elements and prints a paginated proof of the document. Page breaking and page numbers are handled automatically. Corrections and changes (if needed) can be quickly made by editing the batch file and reprocessing. Using the Pagination commands NEW PAGE \NP, NEW ODD PAGE \NOP, and NEW COLUMN \NC, etc., the page breaks can be modified if desired.

The main advantages of batch files are: 1) automatic pagination for initial and revision passes of a document; 2) text input and editing with computer-assisted word processing capabilities; 3) merged text and graphics; 4) Spelling Check program; and. 5) the ability to use off-line file preparation by keyboarding and marking up files on other systems and moving them to the MECCA III to be processed.

Following is an example of the Format File named *employee.pfmt*, along with the Input File and Final Product. As you can see the Input File has no paragraph coding. It is using the Automatic Paragraph Markup according to tab positions, further information on this is in "Volume 2, Chapter 6, Automatic Paragraph Markup."

Our format uses the following commands:

Comment Pagination *

Using comments in your file is nice for keeping track of what and why you have created something.

Page Definition Setup \PDEF

This command sets up your page cutmarks.

Column Setup \COLX

The image area within your cutmarks is defined with this one.

Column Description Pagination \CD

Since the system allows multiple column setups, this command selects the column setup you want.

Column Balance Indicator \CBI

Yes, I want the pages to be balanced.

EXAMPLE OF A MULTIPLE PAGE DOCUMENT

Introduction (*Continued*)

Text Style Setup \TXT

Naturally you need type styles, sizes, etc.

Header Style Setup \HDX

Header styles are defined here. We have two in our example. Remember Headers are used to help the system determine page breaks.

Paragraph Style Setup \PX

Paragraph styles are defined here. We have three in our example. They are defined by the tab position in which they are keyed.

Page Heads/Feet Setup \PHEDX and \PFUTX

Running Page Heads and Feet, used for Page Number, Book Title, etc.

Hyphenation Word Length Setup \HYML

This command turns off hyphenation. For a full width column hyphenation is not needed.

Our input file uses the following commands:

Comment Pagination *

Using a comment at the top of your file is nice for keeping track of why you have created it.

Page Format Pagination \PFMT

We are calling up the geneva.pfmt and our employee.pfmt.

Page Heads/Feet Text Item \PHED n and \PFUT n

Running Page Heads and Feet, used for Book Title, Page Number, and Restriction Notice.

Sequential Page Number Pagination #P

Used to number pages. As you can see, the Page Number \PN command was not necessary, because each file automatically starts out with page number one.

Header Text Item \HD n

Header styles are defined here. We have two in our example. Remember Headers are used to help the system determine page breaks.

Paragraph Text Item \P n

Paragraph mark-up is not put in, instead we have keyed the file knowing that tab position 1 will be a \P1, tab position 5 will be a \P2, and tab position 15 will be a \P3.

Italic, Bold Italic and Normal Immediate Commands \I, \BI, \N

This immediately changes the style.

EXAMPLE OF A MULTIPLE PAGE DOCUMENT Format File

```

\* FORMAT FOR EMPLOYEE MANUAL \*
\* Page Definition \*
\PDEF WIDTH=6146 DEPTH=7953 \END
\* Column Definitions \*
\COLX01 MINX=0723 MAXX=5423 MINY=0723 MAXY=7120 \END \* Full Page \*
\* Start Out In Full Page Mode \*
\CD 1 \END
\* Type Faces For Headers \*
\TXT01 STYLE=B HSIZE=0140 VSIZE=0140 LEAD=0150 \END \* HD1 \*
\TXT02 STYLE=B HSIZE=0120 VSIZE=0120 LEAD=0130 \END \* HD2 \*
\* Type Face For Body Copy \*
\TXT03 STYLE=N HSIZE=0100 VSIZE=0100 LEAD=0120 \END \* P1 thru P3 \*
\* Type Face For Page Heads & Feet \*
\TXT04 STYLE=B HSIZE=0100 VSIZE=0100 LEAD=0100 \END \* PHED and PFUTs \*
\* Header Definitions \*
\HDX01 TEXT=01 LM=0000 RM=4700 CM=CE LB=0480 LA=0000 \END \* HD1 \*
\HDX02 TEXT=02 LM=0000 RM=4700 CM=FL LB=0360 LA=0000 \END \* HD2 \*
\* Paragraph Definitions \*
\PX01 TEXT=03 LM=0000 RM=4700 CM=JU LB=0240 LA=0000 \END \* Body \*
\PX02 TEXT=03 LM=0240 RM=4700 CM=JU LB=0240 LA=0000 \END \* 1st Indent Body \*
\PX03 TEXT=03 LM=1550 RM=4700 CM=JU LB=0240 LA=0000 \END \* 2nd Indent Body \*
\* Page Header Definitions \*
\PHEDX01 TEXT=04 LM=0723 RM=5423 CM=FL YPOS=7713 \END \* PHED1-Even Page \*
\PHEDX06 TEXT=04 LM=0723 RM=5423 CM=FR YPOS=7713 \END \* PHED6-Odd Page \*
\* Page Feet Definitions \*
\PFUTX01 TEXT=04 LM=0723 RM=5423 CM=FL YPOS=0380 \END \* PFUT1-Even Page \*
\PFUTX02 TEXT=04 LM=0723 RM=5423 CM=CE YPOS=0380 \END \* PFUT2-Even Page \*
\PFUTX05 TEXT=04 LM=0723 RM=5423 CM=CE YPOS=0380 \END \* PFUT5-Odd Page \*
\PFUTX06 TEXT=04 LM=0723 RM=5423 CM=FR YPOS=0380 \END \* PFUT6-Odd Page \*
\* Hyphenation Definition \*
\HYML 22

```

EXAMPLE OF A MULTIPLE PAGE DOCUMENT

Input File

* EMPLOYEE HANDBOOK *

\PFMT geneva.pfmt \END

\PFMT employee.pfmt \END

\PHED1 Employee Handbook

\PHED6 Employee Handbook

\PFUT2 See proprietary restrictions on title page.

\PFUT5 See proprietary restrictions on title page.

\PFUT1 #P

\PFUT6 #P

\HD1 EMPLOYEE HANDBOOK

\HD2 Introduction

We have developed this Manual to help you understand the benefits and what we expect of you. While we follow the policies outlined in the Manual, \I^we want you to clearly understand that it is not a contract of employment. \N^You and the Company both have a legal right to terminate your employment at any time for any reason, except certain reasons specifically prohibited by law.

\BI^Notice: \N^From time to time, this Manual may be changed without prior notice to reflect changing circumstances, your desired changes in the law, the Company's growth, etc. In the event there is any conflict between this Manual and federal, state or local laws, such laws will take precedence.

We have tried to make this Manual complete, but if you have any questions about it or any aspect of your employment, please feel free to contact your General Manager or your Supervisor.

No one has the authority to deviate from the policies or benefits as defined by this manual without prior consultation with the Corporate Personnel Department. Any clarifications needed should be obtained from the Corporate Personnel Department thru your Supervisor.

EXAMPLE OF A MULTIPLE PAGE DOCUMENT

Input File (*Continued*)

\HD1 BENEFITS

\HD2 Pension Plan

All regular full-time and part-time employees who have reached the age of twenty-five and have completed at least one thousand (1,000) hours of service within a twelve (12) consecutive month period, are eligible to participate in the Company Pension Plan on entry date (January 1 or July 1) immediately following satisfaction of the conditions stated above. Under the Plan, the Company makes contributions based on your level of compensation.

Additional information regarding the Pension Plan will be made available when you become eligible to participate.

Remember, the actual Plan is the controlling document. If you have any questions, please contact the Corporate Controller.

The pension plan described herein is currently being revised to comply with the recent changes in the laws that govern pension plans. All personnel will be advised of the changes once they have been finalized. Should you have any questions regarding the current plan, please address them in writing to:

PENSION PLAN ADMINISTRATOR\NL
2220 Boston Blvd.\NL
Houston, TX 95416

\HD2 Sick Leave

All regular full-time employees are eligible for paid sick leave upon the completion of the probationary period. Upon successful completion of the probationary period, regular full-time employees will be credited with 12 hours sick leave; thereafter, such leave will accrue at the rate of four (4) hours per month. Sick leave may be accumulated up to a maximum of sixty (60) days. A month will be considered to begin on the first day of the month in which the employee's probationary period ends.

Sick leave may only be taken on an as-earned basis. Under no circumstances will you be granted permission to draw on future, unearned sick leave benefits. Sick leave must be used in a minimum of four (4) hour increments.

Earned sick leave may be used for the illness of an immediate family member or for your illness. The Company reserves the right to send any employee absent due to illness or injury to a physician of its own choosing at Company expense for examination.

Hours taken as paid sick leave will not be included as hours worked when computing overtime pay.

EXAMPLE OF A MULTIPLE PAGE DOCUMENT

Input File (*Continued*)

\HD2 Vacations

All regular full-time employees will be entitled to five (5) days paid vacation after twelve (12) consecutive months of employment and ten (10) days paid vacation after twenty-four (24) consecutive months of employment.

We will attempt to schedule your vacation whenever you want; please let us know as far in advance as possible. If two (2) or more employees request the same vacation period, the scheduling will be determined by the Supervisor. We make our plans on the assumption that you take vacations a week or two at a time.

If you want to take less than five (5) days of vacation at one time, you should get prior approval from your Supervisor.

Payment in lieu of vacation will not be granted. Vacation will only be allowed to be taken once it has been earned. Vacation benefit is expected to be used during the twelve month period following the date it is earned. Unused vacation time may not be carried forward beyond this twelve month period without the written permission of your General or Department Manager. Documentation of this written permission must be placed in your personnel file in the Corporate Personnel Department. Unused vacation not formally approved to be carried over will be lost. Upon termination of your employment you will be paid for all unused vacation to which you are entitled at the time of termination (based on complete consecutive twelve months of service). Hours taken as paid vacation will not be included as hours worked when computing overtime pay.

\HD2 Workers' Compensation

All employees are covered by the Workers' Compensation Laws of the state in which you work. If you are injured while on the job, you must notify your Supervisor immediately and complete a Work Injury Report.

\HD1 COMPENSATION

We have grown by offering quality service to our customers. With respect to employee compensation, it is our policy to compensate at a level that will attract and keep quality people. We believe that our compensation structure is fair, competitive and equitable. If, however, you have any questions about your compensation, feel free to ask your Supervisor. Compensation information is held in the strictest confidence by the Company. We expect you to do the same by not discussing compensation with fellow employees.

\HD1 CONFLICT OF INTEREST

We ask and expect your loyalty; you have ours.

EXAMPLE OF A MULTIPLE PAGE DOCUMENT

Input File (*Continued*)

You should not engage in activities which will be detrimental or deprive the Company of a legitimate profit. You should not invest in, provide services to, or be employed by any business which is a competitor, customer, or supplier of the Company.

We don't want to infringe on your personal life, affairs, or investments where they do not conflict with our legitimate concerns. (For example, we would have no problem with investments in the stocks of publicly traded companies). Because, in most cases, full disclosure will resolve any problems, we expect you to disclose any potential conflicts of interest to us.

We also expect that you will deal with our suppliers and customers in a completely impartial and businesslike manner.

If a supplier or customer offers you a gift or kickback, let us know. It is against our policy for you or your immediate family to accept cash, gifts, special accommodations or favors from anyone with whom the Company does business or is negotiating business. Our concern is that your judgement is not influenced by gifts. Of course this does not apply to advertising or special promotional items such as pens, T-shirts, hats, paperweights, etc.

Any rebates, free trips, gifts or prizes earned or received as a result of Company related travel or purchases should be promptly reported to your Supervisor as they belong to the Company and their use or disposition will be determined by Corporate management.

\HD1 EVALUATIONS AND PERFORMANCE REVIEWS

We feel we owe you an honest explanation of what we think about your performance, attitude and abilities.

In most circumstances all regular, full-time employees are evaluated at the end of a probationary period, three months after completion of the probationary period; after that, evaluations should occur every six months. Evaluations may occur on an annual basis after completing one year of service.

\HD1 TRANSFERS

If you wish to be considered for a transfer to another department or distribution center, notify your Supervisor in writing.

If you are transferred, you won't lose any benefits.

\HD1 REHIRES

If you are rehired as a full-time employee after being laid off by the Company, all benefits in effect at the time of layoff will be reinstated if the rehiring takes place within sixty (60) days of the layoff. Vacation will be granted after a total of one year's service (including time before and after the layoff).

EMPLOYEE HANDBOOK

Introduction

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TABLES

Introduction

A table is defined as multiple columns of Text Items which are associated in rows. If a row has three or more columns, it is considered a table. Each column is assigned a number which references that column to its individual TAB Setup command (\TBX*n*).

Example of Columns and Rows

	COLUMN 1	COLUMN 2	COLUMN 3
ROW 1	X	X	X
ROW 2	X	X	X
ROW 3	X	X	X
ROW 4	X	X	X

MU002

When typing tabular text, you must define a tab ruler at the top of your table. The tab ruler shows the starting character position of each tab field.

It is important that every item in each row, in each column, fit in the tab space allowed. *Do not type over a tab position.* If an item does not fit, either break it into multiple lines or move the START TAB POSITION RULER numbers to increase the characters allowed in that tab.

(Continued on next page.)

TABLES

Introduction (*Continued*)

Each and every table must utilize the following table commands:

<code>\TSXn</code>	TABLE Setup command
<code>\TSn</code>	TABLE START Text Item command
<code>\STP</code> <code> $tabn$</code>	START TAB POSITION RULER
<code>\ETP</code>	END TAB POSITIONS
<code>\TE</code>	TABLE END

Note: The `\STP`, `\ETP`, and `\TE` commands are part of the TABLE START command (`\TS n`).

The SAVE TAB POSITION RULER command (`\STPSV`) and the RULED Table commands discussed later in "Table Information" are optional.

Immediate Commands such as BOLD (`\B^`), SPECIAL CHARACTER (`\nnn^`), HORIZONTAL SIZE (`\HSZ`), etc., can be used within a table.

A table must be completed with a TABLE END (`\TE`) before entering into another Text Item command such as PARAGRAPH (`\P n`).

(Continued on next page.)

TABLES

Introduction (*Continued*)

Example: *Table Input:*

```

\TSX1 COMP=LINE ROWDEPTH=FIXED ROWLEAD=0120 LB=0240 LA=0000 \END
\TBX1 TEXT=3 LM=0000 RM=1000 CM=FL \END
\TBX2 TEXT=3 LM=1000 RM=2000 CM=CE \END
\TBX3 TEXT=3 LM=2000 RM=3000 CM=FR \END

\TS1
\STP
      1                2                3
      TAB POSITION 1    TAB POSITION 2    TAB POSITION 3
      FLUSH LEFT      CENTERED      FLUSH RIGHT
      WITHIN ONE-    WITHIN ONE-    WITHIN ONE-
      THIRD OF        THIRD OF        THIRD OF
      THE MEASURE     THE MEASURE     THE MEASURE

\ETP
\TE

```

Example: *Table Output:*

```

TAB POSITION 1          TAB POSITION 2          TAB POSITION 3
FLUSH LEFT            CENTERED              FLUSH RIGHT
WITHIN ONE-           WITHIN ONE-           WITHIN ONE-
THIRD OF              THIRD OF              THIRD OF
THE MEASURE           THE MEASURE           THE MEASURE

```

(Continued on next page.)

SAVE TAB POSITION RULER**TablesIntroduction (*Continued*)****\STPSV**

Purpose: This command is used to store \STP rulers (if needed) to change the column tab positions within a table. The tab ruler positions immediately follow the \STPSV command.

Format: \STPSV
#*n* *tabn* *tabn* *tabn*

Arguments: *n* is a number from 1 to 99. This number is the SAVE TAB POSITION RULER number assigned to each individual ruler and is referenced in the table when switching from one set of tab rulers to another. During table entry, the saved position ruler is recalled by entering the number (1, 2, etc., without the # sign) in the first character position at the left margin of the table.

Note: The first \STP of any table is referenced as ruler 0 (zero).

tabn is the tab positions in the table. This number is the TAB Setup command number assigned to that particular tab (TBX1, TBX2 or TBX3). The numbers do not necessarily have to be consecutive. The \STPSV tab number string is the ruler line which directs the positioning of the text following.

(Continued on next page.)

SAVE TAB POSITION RULER

Tables Introduction (*Continued*)

\STPSV

Example: *Table Output:*

TAB POSITION 1 - CENTERED HEADING ACROSS TABLE

TAB POSITION 2
CENTERED WITHIN
HALF OF THE
MEASURE

TAB POSITION 3
CENTERED WITHIN
HALF OF THE
MEASURE

SWITCHING BACK TO TAB POSITION 1

TAB POSITION 4
FLUSH LEFT
WITHIN ONE-
THIRD OF
THE MEASURE

TAB POSITION 5
CENTERED
WITHIN ONE-
THIRD OF
THE MEASURE

TAB POSITION 6
FLUSH RIGHT
WITHIN ONE-
THIRD OF
THE MEASURE

SWITCHING BACK TO TAB POSITION 1

Remarks: Compare the *Table Input* example with the *Table Output* example. As you can see, the input file resembles the output. It is important that every item in each column fit the space allowed in the SAVE TAB POSITION RULER for that column. *Do not type over a tab position.* If an item does not fit, either break it into multiple lines or move the TAB RULER numbers to increase the characters allowed in that tab field.

Related
Command:

\TSn
TABLE START Text Item

(Continued on next page.)

RULED TABLES

Tables Introduction (*Continued*)

Ruled tables are created just like unruled tables except for the following ruling commands. These commands are used two ways: 1) in the first character position of the row, or 2) aligned under the first digit of the \STP number in the row. This allows two effects: 1) to draw a rule across the complete table, or 2) to draw a rule for that tab width only.

Arguments:

- | vertical rule
- _ horizontal rule
- + connecting vertical and horizontal rules

The example on the following page shows horizontal and vertical rules connected using the + and using the _ with the | .

To box a table in, use the parameter RULES=TBLR (top, bottom, left and right) in the TABLE Setup command (\TSX*n*). This will draw a rule around the perimeter of the table. See "TABLE STYLE Setup command (\TSX*n*)" for more information.

(Continued on next page.)

RULED TABLES

Tables Introduction (Continued)

Example: *Table Input:*

```

\TSX1 COMP=LINE ROWDEPTH=FIXED ROWLEAD=0120 LB=0240 \END

\TBX1 TEXT=3 LM=0000 RM=3000 CM=CE GUTT=100 \END
\TBX2 TEXT=3 LM=0000 RM=1500 CM=CE \END
\TBX3 TEXT=3 LM=1500 RM=3000 CM=CE \END
\TBX4 TEXT=3 LM=0000 RM=1000 CM=FL GUTL=60 \END
\TBX5 TEXT=3 LM=1000 RM=2000 CM=CE \END
\TBX6 TEXT=3 LM=2000 RM=3000 CM=FR GUTR=60 \END

\STPSV
#1 2 3
\STPSV
#2 4 5 6
\TS1
\STP
1
TAB POSITION 1 \80^ CENTERED HEADING ACROSS TABLE

1 TAB POSITION 2 | TAB POSITION 3
CENTERED WITHIN | CENTERED WITHIN
HALF OF THE | HALF OF THE
MEASURE | MEASURE

0 SWITCHING BACK TO TAB POSITION 1

2 TAB POSITION 4 | TAB POSITION 5 | TAB POSITION 6
FLUSH LEFT | CENTERED | FLUSH RIGHT
WITHIN ONE- | WITHIN ONE- | WITHIN ONE-
THIRD OF | THIRD OF | THIRD OF
THE MEASURE +THE MEASURE +THE MEASURE

0 SWITCHING BACK TO TAB POSITION 1
^
\ETP
\TE

```

(Continued on next page.)

RULED TABLES

Tables Introduction (*Continued*)

Example: *Table Output:*

TAB POSITION 1 - CENTERED HEADING ACROSS TABLE		
TAB POSITION 2 CENTERED WITHIN HALF OF THE MEASURE	TAB POSITION 3 CENTERED WITHIN HALF OF THE MEASURE	
SWITCHING BACK TO TAB POSITION 1		
TAB POSITION 4 FLUSH LEFT WITHIN ONE- THIRD OF THE MEASURE	TAB POSITION 5 CENTERED WITHIN ONE- THIRD OF THE MEASURE	TAB POSITION 6 FLUSH RIGHT WITHIN ONE- THIRD OF THE MEASURE
SWITCHING BACK TO TAB POSITION 1		

Note: When setting ruled tables, the leading parameters TBLL, TBRL and TBXL in the TABLE Setup command (\TSXn) are in effect. See “Chapter 6 — How To Measure Leading” for examples of usage.

HOW TO CHANGE TABLE FORMATS

Information

Basic Table Format: The example below is a basic format that would normally be replaced by the format designed to run a specific document. This format is used to produce the tables in Part III.

Basic Format (tbl.pfmt)

```

\* Format For Table Base \*

\* Page Definition \*

\PDFWIDTH=6146 DEPTH=7953 LM=0000 DUPLEX=N ORN=0\END

\* Column Definition \*

\COLX01 MINX=0553 MAXX=5593 MINY=0736 MAXY=7216 LB=0000\END

\* Start Out In Full Page Mode \*

\CD 1 \END

\* Type Faces For Table \*

\TXT01STYLE=B HSIZE=0080 VSIZE=0080 LEAD=0100 \END \* Table Head \*

\TXT02STYLE=N HSIZE=0100 VSIZE=0100 LEAD=0120 \END \* Body Copy \*

\* Type Face For Header \*

\TXT03STYLE=B HSIZE=0100 VSIZE=0100 LEAD=0120 \END \* HD1 \*

\* Header Definition \*

\HDX01 TEXT=03 LM=0240 RM=5040 CM=CE LB=0240 LA=0000\END

\* Underline Definition \*

\ULPOS-20

\ULSIZ 010

```

MUG022

HOW TO CHANGE TABLE FORMATS

Information (*Continued*)

Two-Column Table: To create a two-column table, an additional format is combined with the the **Basic Format**.

This format can be inserted directly into the data file or inserted as a `\PFMT` .

Format for Two-Column Table (tbl2.pfmt)

```
\* Format For 2COLTBL \*
\* Tab Position Definitions \*
\TBX01TEXT=01 LM=0000 RM=2520 CM=CE GUTL=0000 GUTR=0000 \END
\TBX02TEXT=01 LM=2520 RM=5040 CM=CE GUTL=0000 GUTR=0000 \END
\TBX03TEXT=02 LM=0000 RM=2520 CM=FL GUTL=0160 GUTR=0000 \END
\TBX04TEXT=02 LM=2520 RM=5040 CM=FL GUTL=0160 GUTR=0000 \END
\* Table Setup Definition \*
\TSX1COMP=LINE ROWDEPTH=VAR LB=0240 LA=0000 RULES=TBLR \END
```

MUG023

HOW TO CHANGE TABLE FORMATS

Information (*Continued*)

Two-Column Table Data: The following data file is combined with the preceding two formats to produce the final table on the following page.

Two-Column Table Data (tbl2.data)

NOTE: Excerpt from "tbl2.data" file.

```

\* Two Column Table \*
\PFMT geneva.pfmt \END
\PFMT tbl.pfmt \END
\PFMT tbl2.pfmt \END
\HD1 CONNECT TIMING\NL^
CALLING PERSON HANGS UP, CALLED PERSON HOLDS
\TS1
\STPSV
#1 3 4
\STP
1 2
CONNECTING MAIN OFFICE
SWITCHING SYSTEM | TIMED DELAY IN DISCONNECTING
1 No. 1 left switch at junction 1 | MAIN OFFICE FROM INCOMING CALL
| TO RESTORAL OF CALLED
| LINE TO IDLE STATE
No. 2 left switch at junction 2 | 1 to 3 seconds, underground cable
No. 3 left switch at junction 3 | 4 to 7 seconds, underground cable
| 8 to 10 seconds, underground cable
    
```

Legend:

- ← Selected Font Format
- ← Basic Table Format
- ← Two Column Table Format

MUG024

HOW TO CHANGE TABLE FORMATS

Information (*Continued*)

**CONNECT TIMING
CALLING PERSON HANGS UP, CALLED PERSON HOLDS**

CONNECTING MAIN OFFICE SWITCHING SYSTEM	TIMED DELAY IN DISCONNECTING MAIN OFFICE FROM INCOMING CALL TO RESTORAL OF CALLED LINE TO IDLE STATE
No. 1 left switch at junction 1	1 to 3 seconds, underground cable
No. 2 left switch at junction 2	4 to 7 seconds, underground cable
No. 3 left switch at junction 3	8 to 10 seconds, underground cable
No. 4 left switch at junction 1	11 to 15 seconds, underground cable
No. 1 center switch at junction 1	1 to 3 seconds, underground cable
No. 2 center switch at junction 2	4 to 7 seconds, underground cable
No. 3 center switch at junction 3	8 to 10 seconds, underground cable
No. 4 center switch at junction 4	11 to 15 seconds, underground cable
No. 1 right switch at junction 1	1 to 3 seconds, underground cable
No. 2 right switch at junction 2	4 to 7 seconds, underground cable
No. 3 right switch at junction 3	8 to 10 seconds, underground cable
No. 4 right switch at junction 4	11 to 15 seconds, underground cable

MUG027

Note The example above has been scaled to a smaller size for this chapter. Refer to "Table Formats" for an exact representation of the final output.

HOW TO CHANGE TABLE FORMATS

Information (*Continued*)

Creating New Table Format: To change the preceding table to add a **Centered Head**, the following change is made to the “tbl2.pfmt” and a new format is created “tbl2a.pfmt”.

Format for Two-Column Table with Centered Head (tbl2a.pfmt)

NOTE: The arrow indicates the change made to create a new table format with a Centered Head.

```
\* 2COLTBL WITH CE HD \*
```

```
\* Tab Position Definitions \*
```

```
\TBX01 TEXT=01 LM=0000 RM=2520 CM=CE GUTL=0000 GUTR=0000 \END
```

```
\TBX02 TEXT=01 LM=2520 RM=5040 CM=CE GUTL=0000 GUTR=0000 \END
```

```
\TBX03 TEXT=02 LM=0000 RM=2520 CM=FL GUTL=0160 GUTR=0000 \END
```

```
\TBX04 TEXT=02 LM=2520 RM=5040 CM=FL GUTL=0160 GUTR=0000 \END
```

```
→ \TBX05 TEXT=01 LM=0000 RM=5040 CM=CE GUTL=0000 GUTR=0000 \END
```

```
\* Table Setup Definition \*
```

```
\TSX1 COMP=LINE ROWDEPTH=VAR LB=0240 LA=0000 RULES=TBLR \END
```

MUG025

HOW TO CHANGE TABLE FORMATS

Information (*Continued*)

Changing Data File: The original **Start Tab Positions** become an **\STPSV** and the new **\TBX** that was added to the "tbl2a.pfmt" becomes the new **Start Tab Position**. The resulting changes to the data file are minimal from the initial two-column data file created and are indicated below. The final copy is on the following page.

Two-Column Table with Centered Head Data (tbl2a.data)

NOTE: Excerpt from "tbl2a.data" file.
 The arrows indicate the changes to the data file to create a new table.

	* Two Column Table *		
	\PFMTgeneva.pfmt \END		
	\PFMTtbl.pfmt \END		
→	\PFMTtbl2a.pfmt \END		
	\HD1 CONNECT TIMING\NL^		
	CALLING PERSON HANGS UP, CALLED PERSON HOLDS		
	\TS1		
	\STPSV		
	#1 3	4	
→	#STPSV		
→	#2 1	2	
→	\STP		
→	5		
→	CONNECTING AND DISCONNECTING SWITCHES		
→	2		
			| TIMED DELAY IN DISCONNECTING
			| MAIN OFFICE FROM INCOMING CALL
			| TO RESTORAL OF CALLED
			| LINE TO IDLE STATE
→	-		
	CONNECTING MAIN OFFICE		|
	SWITCHING SYSTEM		|
	1 No. 1 left switch at junction 1		| 1 to 3 seconds, underground cable
	No. 2 left switch at junction 2		| 4 to 7 seconds, underground cable
	No. 3 left switch at junction 3		| 8 to 10 seconds, underground cable

MUG026

HOW TO CHANGE TABLE FORMATS

Information (*Continued*)

CONNECT TIMING
CALLING PERSON HANGS UP, CALLED PERSON HOLDS

CONNECTING AND DISCONNECTING SWITCHES	
CONNECTING MAIN OFFICE SWITCHING SYSTEM	TIMED DELAY IN DISCONNECTING MAIN OFFICE FROM INCOMING CALL TO RESTORAL OF CALLED LINE TO IDLE STATE
No. 1 left switch at junction 1	1 to 3 seconds, underground cable
No. 2 left switch at junction 2	4 to 7 seconds, underground cable
No. 3 left switch at junction 3	8 to 10 seconds, underground cable
No. 4 left switch at junction 1	11 to 15 seconds, underground cable
No. 1 center switch at junction 1	1 to 3 seconds, underground cable
No. 2 center switch at junction 2	4 to 7 seconds, underground cable
No. 3 center switch at junction 3	8 to 10 seconds, underground cable
No. 4 center switch at junction 4	11 to 15 seconds, underground cable
No. 1 right switch at junction 1	1 to 3 seconds, underground cable
No. 2 right switch at junction 2	4 to 7 seconds, underground cable
No. 3 right switch at junction 3	8 to 10 seconds, underground cable
No. 4 right switch at junction 4	11 to 15 seconds, underground cable

MUG028

Note The example above has been scaled to a smaller size for this chapter. Refer to "Table Formats" for an exact representation of the final output.

HOW TO CHANGE TABLE FORMATS

Information (*Continued*)

Making Additional Changes: In the following example, a new format is created to add a Footnote to the Two-Column Table previously created and modified.

Two-Column Table with Footnote Format (tbl2b.pfmt)

NOTE: The arrows indicates the changes made to create a new table format with a Centered Head and Footnote.

```
\* 2COLTBL WITH CE HD AND FOOTNOTE \*
```

```
\* Type Face for Footnotes \*
```

```
→ \TXT04 STYLE=N HSIZE=60 VSIZE=60 LEAD=70 \END
```

```
\* Tab Position Definitions \*
```

```
\TBX01 TEXT=01 LM=0000 RM=2520 CM=CE GUTL=0000 GUTR=0000 \END
```

```
\TBX02 TEXT=01 LM=2520 RM=5040 CM=CE GUTL=0000 GUTR=0000 \END
```

```
\TBX03 TEXT=02 LM=0000 RM=2520 CM=FL GUTL=0160 GUTR=0000 \END
```

```
\TBX04 TEXT=02 LM=2520 RM=5040 CM=FL GUTL=0160 GUTR=0000 \END
```

```
\TBX05 TEXT=01 LM=0000 RM=5040 CM=CE GUTL=0000 GUTR=0000 \END
```

```
→ \TBX06 TEXT=04 LM=0000 RM=5040 CM=FL GUTL=0080 GUTR=0000 \END
```

```
\* Table Setup Definition \*
```

```
\TSX1 COMP=LINE ROWDEPTH=VAR LB=0240 LA=0000 RULES=TB LR \END
```

MUG029

HOW TO CHANGE TABLE FORMATS

Information (Continued)

Changing Data File The data file modifications are in the figure below. The final output is on the following page.

Two-Column Table with Footnote Data (tbl2b.data)

NOTE: Excerpt from "tbl2b.data" file.
 The arrows indicate the changes to the data file to create another new table (tbl2b.data).

```

    \* Two Column Table \*
    \PFMT geneva.pfmt \END
    \PFMT tbl.pfmt \END
    → \PFMT tbl2b.pfmt \END
    \HD1 CONNECT TIMING\NL^
    CALLING PERSON HANGS UP, CALLED PERSON HOLDS
    \TS1
    \STPSV
    #1 3 4
    #STPSV
    #2 1 2
    → #STPSV
    → #3 6 2
    \STP
    5
    - CONNECTING AND DISCONNECTING SWITCHES
    2 | TIMED DELAY IN DISCONNECTING
    | MAIN OFFICE FROM INCOMING CALL
    | TO RESTORAL OF CALLED
    | LINE TO IDLE STATE
    CONNECTING MAIN OFFICE SWITCHING SYSTEM
    1 No. 1 left switch at junction 1 | 1 to 3 seconds, underground cable
    |
    No. 2 left switch at junction 2 | 4 to 7 seconds, underground cable
    .....
    → 3 NOTE: Seconds may vary from 2 to 3 seconds depending on which junction is being used.
    \ETP
    \TE
    
```

MUG030

HOW TO CHANGE TABLE FORMATS

Information (*Continued*)

**CONNECT TIMING
CALLING PERSON HANGS UP, CALLED PERSON HOLDS**

CONNECTING AND DISCONNECTING SWITCHES	
CONNECTING MAIN OFFICE SWITCHING SYSTEM	TIMED DELAY IN DISCONNECTING MAIN OFFICE FROM INCOMING CALL TO RESTORAL OF CALLED LINE TO IDLE STATE
No. 1 left switch at junction 1	1 to 3 seconds, underground cable
No. 2 left switch at junction 2	4 to 7 seconds, underground cable
No. 3 left switch at junction 3	8 to 10 seconds, underground cable
No. 4 left switch at junction 1	11 to 15 seconds, underground cable
No. 1 center switch at junction 1	1 to 3 seconds, underground cable
No. 2 center switch at junction 2	4 to 7 seconds, underground cable
No. 3 center switch at junction 3	8 to 10 seconds, underground cable
No. 4 center switch at junction 4	11 to 15 seconds, underground cable
No. 1 right switch at junction 1	1 to 3 seconds, underground cable
No. 2 right switch at junction 2	4 to 7 seconds, underground cable
No. 3 right switch at junction 3	8 to 10 seconds, underground cable
No. 4 right switch at junction 4	11 to 15 seconds, underground cable

NOTE: Seconds may vary from 2 to 3 seconds depending on which junction is being used.

MUG031

Note The example above has been scaled to a smaller size for this chapter. Refer to "Table Formats" for an exact representation of the final output.

GENERAL CONTENTS

Description	Page
GENEVA FONT FORMAT	1
TIMES FONT FORMAT	2
MISCELLANEOUS FORMATS	
BULLETIN STYLE	
1. Format File	3
2. Input File	4
3. Final Product	5
BLOCK STYLE BUSINESS LETTER	
1. Format File	6
2. Input File	7
3. Final Product	8
SEMI-BLOCK STYLE BUSINESS LETTER	
1. Format File	9
2. Input File	10
3. Final Product	11
NEWS AD 1	
1. Format File	12
2. Input File	13
3. Final Product	14
NEWS AD 2	
1. Format File	15
2. Input File	16
3. Final Product	17
NEWS AD 3	
1. Format File	18
2. Input File	19
3. Final Product	20

Description	Page
MISCELLANEOUS FORMATS (Continued)	
BUSINESS CARD	
1. Format File	21
2. Input File	22
3. Final Product	23
RESTAURANT MENU	
1. Format File	24
2. Input File	25
3. Final Product	26
RESUME 1	
1. Format File	27
2. Input File	28
3. Final Product	30
RESUME 2	
1. Format File	31
2. Input File	32
3. Final Product	34

Description	Page
5 1/2 X 8 1/2 BOOK FORMATS	
COVER	
1. Format File	35
2. Input File	36
3. Final Product	37
CONTENTS	
1. Format File	38
2. Input File	39
3. Final Product	40
MAIN BODY	
1. Format File	41
2. Input File	43
3. Final Product	44
INDEX	
1. Format File	45
2. Input File	46
3. Final Product	47

Description

Page

6 X 9 BOOK FORMATS

COVER

1. Format File	48
2. Input File	49
3. Final Product	50

CONTENTS

1. Format File	51
2. Input File	52
3. Final Product	53

MAIN BODY

1. Format File	54
2. Input File	55
3. Final Product	56

INDEX

1. Format File	57
2. Input File	58
3. Final Product	59

Description	Page
TECHNICAL REPORT FORMATS (Standard 8 1/2 X 11)	
COVER	
1. Format File	60
2. Input File	61
3. Final Product	62
CONTENTS	
1. Format File	63
2. Input File	65
3. Final Product	67
MAIN BODY	
1. Format File	68
2. Input File	70
3. Final Product	72
GLOSSARY	
1. Format File	73
2. Input File	75
3. Final Product	77

Description	Page
ONE COLUMN BOOK FORMATS (Standard 8 1/2 X 11)	
COVER	
1. Format File	78
2. Input File	79
3. Final Product	80
CONTENTS	
1. Format File	81
2. Input File	83
3. Final Product	85
BODY	
1. Format File	86
2. Input File	88
3. Final Product	90
BIBLIOGRAPHY	
1. Format File	91
2. Input File	93
3. Final Product	94

Description	Page
TWO COLUMN BOOK FORMATS (Standard 8 1/2 X 11)	
COVER	
1. Format File	95
2. Input File	96
3. Final Product	97
CONTENTS	
1. Format File	98
2. Input File	100
3. Final Product	102
BODY	
1. Format File	103
2. Input File	105
3. Final Product	107
INDEX	
1. Format File	108
2. Input File	110
3. Final Product	112

Description	Page
TABLE FORMATS	
TABLE BASE FORMAT	113
TWO COLUMN TABLE	
1. Format File	114
2. Input File	115
3. Final Product	117
TWO COLUMN TABLE A	
1. Format File	118
2. Input File	119
3. Final Product	121
TWO COLUMN TABLE B	
1. Format File	122
2. Input File	123
3. Final Product	125
THREE COLUMN TABLE	
1. Format File	126
2. Input File	127
3. Final Product	129
FOUR COLUMN TABLE	
1. Format File	130
2. Input File	131
3. Final Product	133
SIX COLUMN TABLE	
1. Format File	134
2. Input File	135
3. Final Product	136

TABLE FORMATS (Continued)

SIX COLUMN TABLE A

1. Format File	137
2. Input File	138
3. Final Product	139

SIX COLUMN TABLE B

1. Format File	140
2. Input File	141
3. Final Product	142

SIX COLUMN TABLE C

1. Format File	143
2. Input File	144
3. Final Product	145

GENEVA FONT FORMAT

Format File

```
\TXT01 FONT=GE \END  
\TXT02 FONT=GE \END  
\TXT03 FONT=GE \END  
\TXT04 FONT=GE \END  
\TXT05 FONT=GE \END  
\TXT06 FONT=GE \END  
\TXT07 FONT=GE \END  
\TXT08 FONT=GE \END  
\TXT09 FONT=GE \END  
\TXT10 FONT=GE \END  
\TXT11 FONT=GE \END  
\TXT12 FONT=GE \END  
\TXT13 FONT=GE \END  
\TXT14 FONT=GE \END  
\TXT15 FONT=GE \END  
\TXT16 FONT=GE \END  
\TXT17 FONT=GE \END  
\TXT18 FONT=GE \END  
\TXT19 FONT=GE \END  
\TXT20 FONT=GE \END  
\TXT21 FONT=GE \END  
\TXT22 FONT=GE \END  
\TXT23 FONT=GE \END  
\TXT24 FONT=GE \END  
\TXT25 FONT=GE \END  
\TXT26 FONT=GE \END  
\TXT27 FONT=GE \END  
\TXT28 FONT=GE \END  
\TXT29 FONT=GE \END  
\TXT30 FONT=GE \END  
\TXT31 FONT=GE \END  
\TXT32 FONT=GE \END
```

TIMES FONT FORMAT

Format File

```
\TXT01 FONT=TI \END  
\TXT02 FONT=TI \END  
\TXT03 FONT=TI \END  
\TXT04 FONT=TI \END  
\TXT05 FONT=TI \END  
\TXT06 FONT=TI \END  
\TXT07 FONT=TI \END  
\TXT08 FONT=TI \END  
\TXT09 FONT=TI \END  
\TXT10 FONT=TI \END  
\TXT11 FONT=TI \END  
\TXT12 FONT=TI \END  
\TXT13 FONT=TI \END  
\TXT14 FONT=TI \END  
\TXT15 FONT=TI \END  
\TXT16 FONT=TI \END  
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\TXT19 FONT=TI \END  
\TXT20 FONT=TI \END  
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\TXT22 FONT=TI \END  
\TXT23 FONT=TI \END  
\TXT24 FONT=TI \END  
\TXT25 FONT=TI \END  
\TXT26 FONT=TI \END  
\TXT27 FONT=TI \END  
\TXT28 FONT=TI \END  
\TXT29 FONT=TI \END  
\TXT30 FONT=TI \END  
\TXT31 FONT=TI \END  
\TXT32 FONT=TI \END
```

BULLETIN STYLE

Format File

```

\* Format for Bulletin Style \*

\* Page Definition \*

\PDFWIDTH=3976 DEPTH=6146 LM=0000 ORN=0 DUPLEX=N \END

\* Column Definition \*

\COLX01 MINX=0300 MAXX=3676 MINY=0000 MAXY=5146 LB=0000 \END    \* Full Page \*

\* Start Out In Full Page Mode \*

\CD 1 \END

\* Type Faces For Headers \*

\TXT01 STYLE=BI HSIZE=0110 VSIZE=0110 LEAD=0110 \END    \* HD1 \*
\TXT02 STYLE=B HSIZE=0140 VSIZE=0140 LEAD=0140 \END    \* HD2 \*
\TXT03 STYLE=B HSIZE=0120 VSIZE=0120 LEAD=0120 \END    \* HD3 \*

\* Type Face For Paragraphs \*

\TXT04 STYLE=N HSIZE=0100 VSIZE=0100 LEAD=0110 \END    \* P1-P11 \*

\* Header Definitions \*

\HDX01 TEXT=01 LM=0000 RM=3376 CM=CE LB=0240 LA=0000 \END    \* HD1 \*
\HDX02 TEXT=02 LM=0000 RM=3376 CM=CE LB=0300 LA=0000 \END    \* HD2 \*
\HDX03 TEXT=03 LM=0000 RM=3376 CM=CE LB=0180 LA=0000 \END    \* HD3 \*

\* Paragraph Definitions \*

\PX01 TEXT=04 LM=0000 RM=3376 CM=FL LB=0240 LA=0000 \END    \* P1 \*
\PX11 TEXT=04 LM=1120 RM=3376 CM=FL LB=0240 LA=0000 \END    \* P11-Enumerated Body \*
\PX11 EA=Y ETX=04 ELB=1000 ERB=1120 ECM=FL \END

\* Underline Definition \*

\ULPOS -25
\ULSIZ 010

\* Hyphenation Definition \*

\HYML 22

\* \*

```

BULLETIN STYLE

Input File

```

\PFMT geneva.pfmt \END
\PFMT bulletin.pfmt \END
\HD1 YOU ARE CORDIALLY INVITED TO ATTEND
\HD1 A HALF-DAY SEMINAR
\HD2 COMPUTER GRAPHICS:
\HD3 THE MANAGEMENT TOOL FOR THE 80's

\P1 Data representation graphics has literally
exploded upon the American business and scientific
scenes. Decision support graphics may yet prove to
be the most valuable people productivity tool for
the 80's.

\P1 Some users of business and scientific
graphics report being able to absorb up to 600%
more data in less time and with less effort.
For this reason, boardroom graphic systems are
underway in the largest and most profitable U.S.
corporations.

\P1 Graphics turns data into information and
can facilitate comparisons, reveal trends,
consolidate data, focus attention of significant
information and communicate a message better than
any printout.

\P1 Current applications for computer graphics
include:

\11 \121^ \END Financial monitoring

\11 \121^ \END Sales and marketing
presentations

\11 \121^ \END Scientific data
analysis

\11 \121^ \END Budget vs. actual
trends

\11 \121^ \END Research data display

\P1 Business graphics make managers more
productive by shortening the decision cycle and
reducing the length and number of meetings.

\* \*

```

***YOU ARE CORDIALLY INVITED TO ATTEND
A HALF-DAY SEMINAR***

**COMPUTER GRAPHICS:
THE MANAGEMENT TOOL FOR THE 80's**

Data representation graphics has literally exploded upon the American business and scientific scenes. Decision support graphics may yet prove to be the most valuable people productivity tool for the 80's.

Some users of business and scientific graphics report being able to absorb up to 600% more data in less time and with less effort. For this reason, boardroom graphic systems are underway in the largest and most profitable U.S. corporations.

Graphics turns data into information and can facilitate comparisons, reveal trends, consolidate data, focus attention of significant information and communicate a message better than any printout.

Current applications for computer graphics include:

- Financial monitoring
- Sales and marketing presentations
- Scientific data analysis
- Budget vs. actual trends
- Research data display

Business graphics make managers more productive by shortening the decision cycle and reducing the length and number of meetings.

BLOCK STYLE BUSINESS LETTER

Format File

```
\* Format for Block Style Business Letter \*
\* Page Definition \*
\PDFW WIDTH=6146 DEPTH=7953 LM=0000 ORN=0 DUPLEX=N \END
\* Column Definition \*
\COLX01 MINX=1093 MAXX=5053 MINY=0480 MAXY=6680 LB=0000 \END \* Full Page \*
\* Start Out In Full Page Mode \*
\CD 1 \END
\* Type Face For Paragraphs \*
\TXT01 STYLE=N HSIZE=0110 VSIZE=0110 LEAD=0120 \END \* P1-P2 \*
\* Paragraph Definitions \*
\PX01 TEXT=01 LM=0000 RM=3960 CM=JU LB=0240 LA=0000 \END \* P1 \*
\PX02 TEXT=01 LM=0000 RM=3960 CM=JU LB=0600 LA=0000 \END \* P2-Extra Leading \*
\* Underline Definition \*
\ULPOS -15
\ULSIZ 010
\* Hyphenation Definition \*
\HYML 22
\* \*
```

BLOCK STYLE BUSINESS LETTER

Input File

\PFMT geneva.pfmt \END

\PFMT letter1.pfmt \END

\P1 January 10, 1986

\P1 Parke & Blake, Inc.\NL`
4728 La Juanta Street\NL`
Pueblo, Colorado 81002

\P1 Attention of the President

\P1 Gentlemen:

\P1 Thank you for the letter in which you described the financial problems that you are having and request us to extend for two months the date on which your final payment on our building contract will be due.

\P1 We are happy to make the extension you wish, and we will enclose with this letter an agreement to cover the added time. You will note that it simply involves your continuing for two more months the same rate of interest you have been paying on your balance.

\P1 Our Colorado Springs agent, Mr. Willis Crane, will call you early next week to learn when you may wish him to visit you and execute the papers. If there is any help or counsel that he can provide, you may be sure he will be happy to be of service to you.

\P1 Yours truly,\NL`
JUDD-KANE, Inc.

\P2 Thomas J. Kane, Jr.\NL`
Executive Vice President

\P1 TJK/III

\P1 Enclosures:2

**

January 10, 1986

Parke & Blake, Inc.
4728 La Juanta Street
Pueblo, Colorado 81002

Attention of the President

Gentlemen:

Thank you for the letter in which you described the financial problems that you are having and request us to extend for two months the date on which your final payment on our building contract will be due.

We are happy to make the extension you wish, and we will enclose with this letter an agreement to cover the added time. You will note that it simply involves your continuing for two more months the same rate of interest you have been paying on your balance.

Our Colorado Springs agent, Mr. Willis Crane, will call you early next week to learn when you may wish him to visit you and execute the papers. If there is any help or counsel that he can provide, you may be sure he will be happy to be of service to you.

Yours truly,
JUDD-KANE, Inc.

Thomas J. Kane, Jr.
Executive Vice President

TJK/III

Enclosures: 2

SEMI-BLOCK STYLE BUSINESS LETTER

Format File

```

\* Format for Semi-Block Style Business Letter \*

\* Page Definition \*

\PDF WIDTH=6146 DEPTH=7953 LM=0000 ORN=0 DUPLEX=N \END

\* Column Definition \*

\COLX01 MINX=1093 MAXX=5053 MINY=0480 MAXY=6420 LB=0000 \END \* Full Page \*

\* Start Out In Full Page Mode \*

\CD 1 \END

\* Type Face For Paragraphs \*

\TXT01 STYLE=N HSIZE=0110 VSIZE=0110 LEAD=0120 \END \* P1-P11\*

\* Paragraph Definitions \*

\PX01 TEXT=01 LM=2000 RM=3960 CM=FL LB=0240 LA=0200 \END \* P1-Extra Leading \*
\PX02 TEXT=01 LM=0000 RM=3960 CM=FL LB=0240 LA=0000 \END \* P2-Body \*
\PX03 TEXT=01 LM=0000 RM=3960 CM=FL LB=0240 LA=0000 \END \* P3-1st Line Indent \*
\PX03 IL1=360 NLI=01 \END
\PX11 TEXT=01 LM=0780 RM=3420 CM=FL LB=0240 LA=0000 \END \* P11-Enumerated Para. \*
\PX11 EA=Y ETX=01 ELB=0540 ERB=0780 ECM=FL \END

\* Underline Definition \*

\ULPOS -25
\ULSIZ 010

\* Hyphenation Definition \*

\HYMB 04
\HYMA 03
\HYMC 02
\HYML 08

```

SEMI-BLOCK STYLE BUSINESS LETTER

Input File

\PFMT geneva.pfmt \END

\PFMT letter2.pfmt \END

\P1 December 10, 1985

\P2 Foote, Klein & Hughes, Inc.\NL`
1300 Rider Building\NL`
Trenton, New Jersey 08607

\P2 Gentlemen:

\P3 Thank you for your inquiry of December 5 concerning our rates for space in JUNIOR EXECUTIVE magazine. We are enclosing our standard rate card. You will note on it that the rates for the space dimensions about which you specifically asked are as follows:

\P11 1. \END
Quarter page is 125.00

\P11 2. \END
One-half page is 235.00

\P11 3. \END
Complete page is 400.00

\P3 Worth noting also is the 10% discount that you earn for four or more reservations in one calendar year. We allow the usual 15% agency fee, of course.

\P3 If you wish to reserve space in our February issue, which is the next one going to press, we should have your reservation (and copy, if it is to be set) no later than December 28. Thank you for your inquiry.

\P1 Yours very truly,

\P1 J. Paul Prescott\NL`
Business Manager

\P2 III

\P2 Enclosure

**

December 10, 1985

Foote, Klein & Hughes, Inc.
1300 Rider Building
Trenton, New Jersey 08607

Gentlemen:

Thank you for your inquiry of December 5 concerning our rates for space in JUNIOR EXECUTIVE magazine. We are enclosing our standard rate card. You will note on it that the rates for the space dimensions about which you specifically asked are as follows:

1. Quarter page is 125.00
2. One-half page is 235.00
3. Complete page is 400.00

Worth noting also is the 10% discount that you earn for four or more reservations in one calendar year. We allow the usual 15% agency fee, of course.

If you wish to reserve space in our February issue, which is the next one going to press, we should have your reservation (and copy, if it is to be set) no later than December 28. Thank you for your inquiry.

Yours very truly,

J. Paul Prescott
Business Manager

III

Enclosure

NEWS AD 1

Format File

* Format for News Ad 1 *

* Page Definition *

\PDEF WIDTH=3540 DEPTH=4800 LM=0000 ORN=0 DUPLEX=N \END

* Column Definition *

\COLX01 MINX=0000 MAXX=3540 MINY=1000 MAXY=3800 LB=0000 \END * Full Page *

* Start Out In Full Page Mode *

\CD 1 \END

* Type Faces For Paragraphs *

\TXT01 STYLE=B HSIZE=0300 VSIZE=0300 LEAD=0300 \END * P1 *

\TXT02 STYLE=N HSIZE=0100 VSIZE=0100 LEAD=0110 \END * P2 *

\TXT03 STYLE=N HSIZE=0240 VSIZE=0240 LEAD=0260 \END * P3 *

\TXT04 STYLE=N HSIZE=0080 VSIZE=0080 LEAD=0100 \END * P4 *

\TXT05 STYLE=B HSIZE=0300 VSIZE=0300 LEAD=0320 \END * P5 *

\TXT06 STYLE=B HSIZE=0140 VSIZE=0140 LEAD=0160 \END * P6 *

* Paragraph Definitions *

\PX01 TEXT=01 LM=0000 RM=3540 CM=CE LB=0330 LA=0000 \END * P1 *

\PX02 TEXT=02 LM=0000 RM=3540 CM=CE LB=0140 LA=0000 \END * P2 *

\PX03 TEXT=03 LM=0000 RM=3540 CM=CE LB=0220 LA=0000 \END * P3 *

\PX04 TEXT=04 LM=0000 RM=3540 CM=CE LB=0100 LA=0000 \END * P4 *

\PX05 TEXT=05 LM=0000 RM=3540 CM=CE LB=0320 LA=0080 \END * P5 *

\PX06 TEXT=06 LM=0000 RM=3540 CM=CE LB=0200 LA=0000 \END * P6 *

* Underline Definition *

\ULPOS -25

\ULSIZ 010

* Hyphenation Definition *

\HYML 22

* *

NEWS AD 1

Input File

\PFMT geneva.pfmt \END

\PFMT newsad1.pfmt \END

\P1 Professional \NL
Office \NL
Furniture

\P2 Attorneys/Paralegals and \NL
secretary desks and chairs, \NL
conference table and chairs. \NL
No Delivery Charges. \NL
Just call:

\P3 1-816-384-0100

\P4 Ask for Don.

\P5 Corporate Furniture

\P4 \the

\P6 Furniture Specialists

* *

Professional
Office
Furniture

Attorneys/Paralegals and
secretary desks and chairs,
conference table and chairs.
No Delivery Charges.

Just call:

1-816-384-0100

Ask for Don.

Corporate Furniture

the

Furniture Specialists

NEWS AD 2

Format File

* Format for News Ad 2 *

* Page Definition *

\PDEF WIDTH=6146 DEPTH=7953 LM=0000 ORN=0 DUPLEX=N \END

* Column Definition *

\COLX01 MINX=1393 MAXX=4753 MINY=1446 MAXY=6507 LB=0000 \END * Full Page *

* Start Out In Full Page Mode *

\CD 1 \END

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\TXT04 STYLE=B HSIZE=0130 VSIZE=0130 LEAD=0150 \END * P4 *

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\ULSIZ 010

* Hyphenation Definition *

\HYML 22

* *

NEWS AD 2

Input File

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\P1 \HR 3360,40

\P2 COMPUTER\NL`
GRAPHICS\NL`
FOR\NL`
DESIGN\NL`
SPRING 79

\P1 \HR 3360,10

\P3 WEEKEND WORKSHOPS

\P4 MARCH AND APRIL\NL`
SAN FRANCISCO, SEATTLE, ALBUQUERQUE

\P1 \HR 3360,10

\P5 FALL WEEKEND IN S.F.

\P4 SEMINARS/TUTORIALS/EXHIBITS\NL`
OCTOBER 20 AND 21 \NL`
ST. FRANCIS HOTEL

\P1 \HR 3360,10

\P4 \I*For more information:\NL`
\N*Seminole Complex\NL`
One Graphics Drive\NL`
San Francisco, CA 90000\NL`
415/555-5555

\P6 SEMINOLE CENTER FOR COMPUTER GRAPHICS

\P1 \HR 3360,40

* *

COMPUTER GRAPHICS FOR DESIGN SPRING 79

WEEKEND WORKSHOPS
MARCH AND APRIL
SAN FRANCISCO, SEATTLE, ALBUQUERQUE

FALL WEEKEND IN S.F.
SEMINARS/TUTORIALS/EXHIBITS
OCTOBER 20 AND 21
ST. FRANCIS HOTEL

For more information:
Seminole Complex
One Graphics Drive
San Francisco, CA 90000
415 / 555-5555
SEMINOLE CENTER FOR COMPUTER GRAPHICS

NEWS AD 3

Format File

* Format for News Ad 3 *

* Page Definition *

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 \TXT04 STYLE=N HSIZE=0300 VSIZE=0300 LEAD=0300 \END * P4 *
 \TXT05 STYLE=N HSIZE=0160 VSIZE=0160 LEAD=0160 \END * P5 *
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* Underline Definition *

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 \ULSIZ 010

* Hyphenation Definition *

\HYML 22

* *

NEWS AD 3

Input File

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\PFMT newsad3.pfmt \END

\P1 This announcement is neither an offer to sell nor a solicitation of an offer to buy these securities.\NL^{*}
The offer is made only by the Offering Circular.

\P1 The Bonds are not savings accounts or deposits and are not insured by the Federal Savings and Loan\NL^{*}
Insurance Corporation or any other government agency. The Bonds have not been approved\NL^{*}
or disapproved by the Federal Home Loan Bank Board or the Federal Savings and Loan\NL^{*}

Insurance Corporation nor has such board or corporation passed upon the accuracy or\NL^{*}
adequacy of the Offering Circular. Any representation to the contrary is unlawful.

\P2 New Issue/October 31, 1986

\P3 \$1,000,000,000

\P4 Horizon Financial Services

\P5 GNMA/FHLMC/FNMA-Secured Zero Coupon Bonds, Series Z

\P1 The Bonds are general obligations of Horizon Financial Services, a Missouri-chartered stock savings\NL^{*}
and loan association. The Bonds do not pay interest periodically. The only scheduled payment to\NL^{*}
the holder of a Bond will be the amount due at maturity. The Bonds will be secured initially by\NL^{*}
mortgage certificates of the Government National Mortgage Association, the Federal Home\NL^{*}
Loan Mortgage Corporation and the Federal National Mortgage Association. Subsequently\NL^{*}
the Bonds may be secured by any combination of Certificates, cash and securities of\NL^{*}
the United States Government and its agencies and instrumentalities entitled\NL^{*}
to the full faith and credit of the United States and securities of corporations\NL^{*}
created pursuant to an act of the United States Congress.

\P6 \$1,000,000,000 Bonds Due December 31, 2000 \120^{*} 3.021%

\P7 \$1,000,000,000 Bonds Due December 31, 2000 \120^{*} 3.210%

\P7 \$1,000,000,000 Bonds Due December 31, 2000 \120^{*} 2.100%

\P1 and accrued amortization, if any, of original issue discount\NL^{*}
from December 31, 1986, to date of delivery.

\P1 Copies of the Offering Circular may be obtained in any State in which this announcement\NL^{*}
is circulated only from such of the undersigned as may legally\NL^{*}
offer these securities in such State.

This announcement is neither an offer to sell nor a solicitation of an offer to buy these securities.
The offer is made only by the Offering Circular.

The Bonds are not savings accounts or deposits and are not insured by the Federal Savings and Loan Insurance Corporation or any other government agency. The Bonds have not been approved or disapproved by the Federal Home Loan Bank Board or the Federal Savings and Loan Insurance Corporation nor has such board or corporation passed upon the accuracy or adequacy of the Offering Circular. Any representation to the contrary is unlawful.

New Issue/October 31, 1986

\$1,000,000,000

Horizon Financial Services

GNMA/FHLMC/FNMA-Secured Zero Coupon Bonds, Series Z

The Bonds are general obligations of Horizon Financial Services, a Missouri-chartered stock savings and loan association. The Bonds do not pay interest periodically. The only scheduled payment to the holder of a Bond will be the amount due at maturity. The Bonds will be secured initially by mortgage certificates of the Government National Mortgage Association, the Federal Home Loan Mortgage Corporation and the Federal National Mortgage Association. Subsequently the Bonds may be secured by any combination of Certificates, cash and securities of the United States Government and its agencies and instrumentalities entitled to the full faith and credit of the United States and securities of corporations created pursuant to an act of the United States Congress.

\$1,000,000,000 Bonds Due December 31, 2000 @ 3.021%
\$1,000,000,000 Bonds Due December 31, 2000 @ 3.210%
\$1,000,000,000 Bonds Due December 31, 2000 @ 2.100%

and accrued amortization, if any, of original issue discount
from December 31, 1986, to date of delivery.

Copies of the Offering Circular may be obtained in any State in which this announcement
is circulated only from such of the undersigned as may legally
offer these securities in such State.

BUSINESS CARD

Format File

* Format for Business Card *

* Page Definition *

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* Column Definition *

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* Start Out In Full Page Mode *

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\TXT03 STYLE=B HSIZE=0120 VSIZE=0120 LEAD=0120 \END * P3 *

\TXT04 STYLE=N HSIZE=0100 VSIZE=0100 LEAD=0110 \END * P4 *

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\PX04 TEXT=04 LM=0000 RM=2540 CM=CE LB=0120 LA=0000 \END * P4 *

\PX05 TEXT=05 LM=0000 RM=2540 CM=CE LB=0360 LA=0000 \END * P5 *

* Underline Definition *

\ULPOS -25

\ULSIZ 010

* Hyphenation Definition *

\HYML 22

* *

BUSINESS CARD

Input File

\PFMT geneva.pfmt \END

\PFMT buscard.pfmt \END

\P1 JAMES C. MAN

\P2 (816) 218-5113

\P3 LITHO STEP, INC.

\P4 1006 Adams Circle \NL* Kansas City, Missouri 64103

\P5 "PRECISE STEPPING ON FILM"

* *

JAMES C. MAN

(816) 218-5113

LITHO STEP, INC.
1006 Adams Circle
Kansas City, Missouri 64103

"PRECISE STEPPING ON FILM"

RESTAURANT MENU

Format File

* Format for Restaurant Menu *

* Page Definition *

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* Column Definition *

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* Start Out in Full Page Mode *

\CD 1 \END

* Type Face For Header *

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* Type Faces For Paragraphs *

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\TXT03 STYLE=B HSIZE=0160 VSIZE=0160 LEAD=0160 \END * P11 *

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\PX11 EA=Y ETX=03 ELB=0000 ERB=0200 ECM=FR \END

* Underline Definition *

\ULPOS -25

\ULSIZ 010

* Hyphenation Definition *

\HYML 22

* *

RESTAURANT MENU

Input File

\PFMT geneva.pfmt \END

\PFMT menu.pfmt \END

\HD1 Sandwiches

\P11 1 \END Louisiana Style Poor Boy \FILL^3.50

\P1 Beef or Ham on French Roll with Steak Fries, Lettuce, Tomato & Mayonnaise

\P11 2 \END Burger Basket with Steak Fries & Slaw \FILL^3.25

\P1 1/2 pound Fresh Ground Beef

\P11 3 \END Hamburger & Fries with Lettuce, Tomato & Mayonnaise, Served on a Grilled Bun \FILL^1.89

\P11 4 \END Roast Beef with Lettuce, Tomato \FILL^2.15

\P11 5 \END Hot Corned Beef on your choice of Bread, Served with Lettuce & Tomato \FILL^2.30

\P11 6 \END Hot Pastrami & Swiss with Mustard \FILL^2.15

\P11 7 \END Sliced Breast of Turkey, Served with Lettuce & Tomato \FILL^2.15

\P11 8 \END Baked Ham Sandwich, Served with Lettuce & Tomato \FILL^2.15

\P11 9 \END Famous Meatloaf, Served with Lettuce & Tomato. Hot or Cold \FILL^2.15

\P11 10 \END Bacon, Lettuce & Tomato \FILL^1.50

**

Sandwiches

- 1 Louisiana Style Poor Boy 3.50
Beef or Ham on French Roll with Steak Fries, Lettuce, Tomato & Mayonnaise

- 2 Burger Basket with Steak Fries & Slaw 3.25
1/2 pound Fresh Ground Beef

- 3 Hamburger & Fries with Lettuce, Tomato & Mayonnaise, Served on a Grilled Bun 1.89

- 4 Roast Beef with Lettuce, Tomato 2.15

- 5 Hot Corned Beef on your choice of Bread, Served with Lettuce & Tomato 2.30

- 6 Hot Pastrami & Swiss with Mustard 2.15

- 7 Sliced Breast of Turkey, Served with Lettuce & Tomato 2.15

- 8 Baked Ham Sandwich, Served with Lettuce & Tomato 2.15

- 9 Famous Meatloaf, Served with Lettuce & Tomato. Hot or Cold 2.15

- 10 Bacon, Lettuce & Tomato 1.50

RESUME 1

Format File

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\* Column Definition \*
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\TXT02 STYLE=B HSIZE=0100 VSIZE=0100 LEAD=0120 \END \* P11 \*
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\ULSIZ 010
\* Hyphenation Definition \*
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\HYMA 03
\HYMC 02
\HYML 08
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RESUME 1

Input File

\PFMT geneva.pfmt \END

\PFMT resume1.pfmt \END

\P11 Hyman B. Prospect \END
 1234 North Fremont \NL^
 Chicago, IL 60000 \NL^
 (312) 000-0000

\P11 Goal \END
 To utilize and expand skills in project design, analysis,
 organization, communication and management in a challenging
 growth position.

\P11 Education \END
 \B^Illinois Institute of Technology, Institute of Design, Chicago,
 Illinois \NL^
 \N^Candidate for Masters of Science Degree in Product Design \NL^
 January 1982 \81^Present

\P11 \B^University of Illinois, Chicago, Illinois \NL^
 \N^Non-degree \NL^
 1979 \81^1981

\P11 \B^University of Illinois, Urbana, Illinois \NL^
 \N^Bachelor of Science in Agriculture, 1977

\P11 Professional Experience \END
 Developing preliminary designs, cost estimates, final plans,
 contract specifications and supervising construction of landscape
 and building project work in a private business and a public agency

\P11 Researching a topic, developing preliminary designs in sketch
 format, constructing three-dimensional mock-ups and models, and
 documenting these concepts for presentation.

\P11 Writing, debugging and executing many types of computer programs
 and experience as a user of computer communication and information
 systems.

\P11 Planning and presenting educational/instructional programs and
 public meetings utilizing various media.

\P11 Organizing, researching and writing various types of reports
 as a professional and a student.

\P11 Delegating and recording daily work assignments, evaluating and
 interviewing employees, compiling and presenting annual reports
 concerning my divisions' activities.

\P11 Assisting in the preparation of annual budgets with special
 emphasis on project budgets.

RESUME 1

Input File (Continued)

\P11 Employment \END
\B^Supervisor\NL^
\N^Skokie Park District, Skokie, Illinois\NL^
1978\81^Present

\P11 \B^Landscaping Design Salesman\NL^
\N^Wingren Landscaping, Hinsdale, Illinois\NL^
1977\81^1978

\P11 \B^Stock Clerk\NL^
\N^Illini Union Bookstore, Champaign, Illinois\NL^
1976\81^1977

\P1 References furnished upon request

**

Hyman B. Prospect

1234 North Fremont
Chicago, IL 60000
(312) 000-0000

Goal

To utilize and expand skills in project design, analysis, organization, communication and management in a challenging growth position.

Education

Illinois Institute of Technology, Institute of Design, Chicago, Illinois
Candidate for Masters of Science Degree in Product Design
January 1982–Present

University of Illinois, Chicago, Illinois
Non-degree
1979–1981

University of Illinois, Urbana, Illinois
Bachelor of Science in Agriculture, 1977

Professional Experience

Developing preliminary designs, cost estimates, final plans, contract specifications and supervising construction of landscape and building project work in a private business and a public agency

Researching a topic, developing preliminary designs in sketch format, constructing three-dimensional mock-ups and models, and documenting these concepts for presentation.

Writing, debugging and executing many types of computer programs and experience as a user of computer communication and information systems.

Planning and presenting educational/instructional programs and public meetings utilizing various media.

Organizing, researching and writing various types of reports as a professional and a student.

Delegating and recording daily work assignments, evaluating and interviewing employees, compiling and presenting annual reports concerning my divisions' activities.

Assisting in the preparation of annual budgets with special emphasis on project budgets.

Employment

Supervisor
Skokie Park District, Skokie, Illinois
1978–Present

Landscaping Design Salesman
Wingren Landscaping, Hinsdale, Illinois
1977–1978

Stock Clerk
Illini Union Bookstore, Champaign, Illinois
1976–1977

References furnished upon request

RESUME 2

Format File

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\* Page Definition \*

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\* Column Definition \*

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\* Paragraph Definitions \*

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\ULSIZ 010

\* Hyphenation Definition \*

\HYMB 04
\HYMA 03
\HYMC 02
\HYML 08

\* \*

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RESUME 2

Input File

\PFMT geneva.pfmt \END

\PFMT resume2.pfmt \END

\P1 MAXINE GUTIERREZ \NL
4321 72nd Terrace, NE \NL
Washington DC 20000 \NL
(212) 000-0000

\P2 \US Experience \UE

\P11 ADMINISTRATION \END

Standardized contract filing systems for sales department.
Prepared schedules and agendas for national sales meetings.
Developed active lead follow-up system for sales staff.
Maintained department personnel records. Developed
standardized sales call report format. Formatted sales inquiries
on word processor. Planned exhibits and trade shows.

\P11 COMMUNICATION \END

Corresponded with customers regarding product information and
shipment schedules. Handled customer complaints.
Communicated operational procedures to field sales managers
in five regional offices.

\P11 PUBLIC RELATIONS \END

Coordinated and wrote sales department newsletter detailing
sales achievements and new product information. Acted as
company representative at trade shows and exhibits. Acted
as department liaison with all levels of personnel.

\P11 TECHNICAL SKILLS \END

Operational knowledge of Wang OIS 140 Word Processor, IBM
Displaywriter, Data General SSI Word Processor, and IBM
Memory Typewriter. Working knowledge of most common
office machines.

\P2 \US Work History \UE

\P11 1981 \81 Present \END

Administrative Assistant to National Sales Manager \NL
Parker-Hill Chemical Company \NL
Chicago, Illinois

\P11 1979 \81 1981 \END

Sales Support Secretary \NL
Bona Pharmaceuticals Company \NL
Chicago, Illinois

RESUME 2

Input File (Continued)

\P2 \US Education \UE

\P11 1981 \END
Certified Professional Secretary \NL
Institute for Certifying Secretaries \NL
Kansas City, Missouri

\P11 1979 \END
Bachelor of Arts \81 English \NL
University of Chicago \NL
Chicago, Illinois

\P11 \END \B References furnished upon request.

* *

MAXINE GUTIERREZ
4321 72nd Terrace, NE
Washington DC 20000
(212) 000-0000

Experience

ADMINISTRATION

Standardized contract filing systems for sales department. Prepared schedules and agendas for national sales meetings. Developed active lead follow-up system for sales staff. Maintained department personnel records. Developed standardized sales call report format. Formatted sales inquiries on word processor. Planned exhibits and trade shows.

COMMUNICATION

Corresponded with customers regarding product information and shipment schedules. Handled customer complaints. Communicated operational procedures to field sales managers in five regional offices.

PUBLIC RELATIONS

Coordinated and wrote sales department newsletter detailing sales achievements and new product information. Acted as company representative at trade shows and exhibits. Acted as department liaison with all levels of personnel.

TECHNICAL SKILLS

Operational knowledge of Wang OIS 140 Word Processor, IBM Displaywriter, Data General SSI Word Processor, and IBM Memory Typewriter. Working knowledge of most common office machines.

Work History

1981–Present

Administrative Assistant to National Sales Manager
Parker-Hill Chemical Company
Chicago, Illinois

1979–1981

Sales Support Secretary
Bona Pharmaceuticals Company
Chicago, Illinois

Education

1981

Certified Professional Secretary
Institute for Certifying Secretaries
Kansas City, Missouri

1979

Bachelor of Arts – English
University of Chicago
Chicago, Illinois

References furnished upon request.

5 1/2 X 8 1/2 STYLE BOOK COVER

Format File

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\* Format for 5 1/2 X 8 1/2 Style Book Cover \*

\* Page Definition \*

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\PX03 TEXT=02 LM=0000 RM=3120 CM=FL LB=1360 LA=0000 \END \* P3-Author \*
\PX04 TEXT=03 LM=0000 RM=3120 CM=FL LB=1380 LA=0000 \END \* P4-Publisher \*

\* Underline Definition \*

\ULPOS -20
\ULSIZ 010

\* Hyphenation Definition \*

\HYML 22

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5 1/2 X 8 1/2 STYLE BOOK COVER

Input File

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\PFMT 5x8cover.pfmt \END

\P1 Practical\NL`
Steps and\NL`
Methods\NL`
Book

\P2 \HR 3120,60

\P3 R. Von Ryan

\P4 RELAX PUBLISHING COMPANY, INC.\NL`
\A Penny-Hat Company\NL`
\N Rest, Virginia

**

5 1/2 X 8 1/2 STYLE BOOK CONTENTS

Format File

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\* Format for 5 1/2 X 8 1/2 Style Book Contents \*

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\* Column Definition \*

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\* Start Out in Full Page Mode \*

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\* Type Face For Headers \*

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\* Type Faces For Paragraphs \*

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\* Paragraph Definitions \*

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\PX02 TEXT=02 LM=0960 RM=2800 CM=FL LB=0240 LA=0000 \END \* P2 \*
\PX03 TEXT=02 LM=0000 RM=3120 CM=FR LB=0000 LA=0000 \END \* P3 \*
\PX11 TEXT=03 LM=0760 RM=2800 CM=FL LB=0240 LA=0000 \END \* P11 \*
\PX11 EA=Y ETX=03 ELB=0000 ERB=0760 ECM=FL \END
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\* Underline Definition \*

\ULPOS -20
\ULSIZ 010

\* Hyphenation Definition \*

\HYML 22

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5 1/2 X 8 1/2 STYLE BOOK CONTENTS

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\PFMT 5x8conts.pfmt \END
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\HD2 \HR 3120,60
\P1 Preface
\P3 1
\P1 Intro
\P3 2
\P2 Concepts to Help Plan and Control Overall Projects
\P3 3
\P11 PART 1 \END PHASES
\P3 \B*4
\P12 Chapter 1 \END First Phase
\P3 4
\P2 Problem Analysis
\P3 5
\P2 Getting the "Overall Picture"
\P3 6
\P2 Analyzing the Request
\P3 7
\P12 Chapter 2 \END Second Phase
\P3 8
\P12 Chapter 3 \END Third Phase
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\P1 This chapter instructs in detail the
technique to be followed in identifying each
task within the First Phase to a structured
system development.

\P1 It is during the First Phase that apparent
and actual problems are identified: scope of the
problem; alternative for possible solutions to the
problem and the effect proposed solutions
have on personnel.

\P11 A/ \END PROBLEM ANALYSIS

\P2 The purpose of the problem analysis is to
establish a solid foundation for problem definition
by identifying the requestor and his present and
future needs. This initial task consists of two
distinctive steps: 1/ gaining an overall view
or "Overall Picture" of the
organization and of the project, 2/ planning and
writing the preliminary assignment.

\P12 1/ \END Getting the "Overall
Picture"

\P3 To set up the system project so as to
support the corporate goals you have to have a
clear understanding of the organization, and of the
department and its growth. In addition, you need to
investigate the department's relationship
with other departments and the relationship of the
department management and staff.

\P12 2/ \END Analyzing the Request

\P3 Before gathering information about the
problem, study and analyze the request thoroughly,
so you will be able to define:

\P13 \121* \END Who is issuing the
request?

\P13 \121* \END What type of service
does the requestor need?

\*\*

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FIRST PHASE

This chapter instructs in detail the technique to be followed in identifying each task within the First Phase to a structured system development.

It is during the First Phase that apparent and actual problems are identified: scope of the problem; alternative for possible solutions to the problem and the effect proposed solutions have on personnel.

A/ PROBLEM ANALYSIS

The purpose of the problem analysis is to establish a solid foundation for problem definition by identifying the requestor and his present and future needs. This initial task consists of two distinctive steps: 1/ gaining an overall view or "Overall Picture" of the organization and of the project, 2/ planning and writing the preliminary assignment.

1/ Getting the "Overall Picture"

To set up the system project so as to support the corporate goals you have to have a clear understanding of the organization, and of the department and its growth. In addition, you need to investigate the department's relationship with other departments and the relationship of the department management and staff.

2/ Analyzing the Request

Before gathering information about the problem, study and analyze the request thoroughly, so you will be able to define:

- Who is issuing the request?
- What type of service does the requestor need?

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THE PREPARATION AND PRESENTATION OF\NL*
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\P2 GEORGE A. SMITH

\P3 Business Marketing Foundation

\P4 BOSTON\80*SAN FRANCISCO\80*NEW YORK\80*KANSAS CITY

portfolio 8 master 8

REFERENCE GUIDE AND WORKBOOK FOR
THE PREPARATION AND PRESENTATION OF
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(OR HOW TO SELL YOURSELF)

GEORGE A. SMITH

Business Marketing Foundation
BOSTON—SAN FRANCISCO—NEW YORK—KANSAS CITY

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\P2 Modeling is a profession that requires hard work, dedication, stamina, discipline and an unbounded desire to succeed. If you feel you have these qualities and are interested in achieving a career that offers opportunity for travel, financial rewards and professional and personal satisfaction, you just may be a step closer to fulfilling your goal.

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LANGUAGE, POISE AND CONFIDENCE

Modeling is a profession that requires hard work, dedication, stamina, discipline and an unbounded desire to succeed. If you feel you have these qualities and are interested in achieving a career that offers opportunity for travel, financial rewards and professional and personal satisfaction, you just may be a step closer to fulfilling your goal.

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\P11 3. \END Synchronization of the Digital Network
\FILL^3

\P11 4. \END Transmission
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\P11 5. \END Maintenance Considerations
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\P11 1. \END Interconnection with Terminal Equipment
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\P11 2. \END Circuit Associated Signaling
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\P11 3. \END Local Access and Transport Areas
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\P11 4. \END International Phonetic Alphabet
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\P11 5. \END The Entry Words
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\P1 Distribution Network

\P11 1. \END Multiplexer Layover and Cross Reference
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\P11 2. \END Data Transmission Network
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\P11 3. \END Electrical Specifications
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\PHED2 \HR 4800,15\NL^HR 4800,15 ^

\PHED3 LIGHTWAVE MULTIPLEXER RESEARCH\NL^ INFORMATION
SHEET \81^ MUL-290

\PHED4 LIGHTWAVE MULTIPLEXER RESEARCH\NL^ INFORMATION
SHEET \81^ MUL-290

\PHED5 \HR 4800,15\NL^HR 4800,15

\PHED6 XX-200-300-101\NL^Section 1 Page #\NL^
September 1985

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\N^See proprietary restrictions on title page.

\PFUT5 PROPRIETARY\80^AUTHORIZED CLIENTS ONLY\NL^
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\HD1 LIGHTWAVE DATA MULTIPLEXER

\P1 \HR 3370,5

\P11 Features \END
Below is a list of features included in the
Lightwave Data Multiplexer.

\P12\121^\END
Plug-in interface modules for most common industrial
signals

\P12\121^\END
Long transmission distance without repeaters

\P12\121^\END
Galvanic isolation between terminals

\P12\121^\END
No EMI or EMP radiation susceptibility

\P12\121^\END
19" rack mount design

\P1 \HR 3370,5

\P11 Description \END
The Multiplexer offers very versatile transmission of
analog or digital output, and asynchronous data
channels. Through the use of a microprocessor a large
number and combination of these signals are
multiplexed for interference free transmission over
a single pair of optical fibers.

TECHNICAL REPORT BODY

Input File (Continued)

\P2 The Multiplexer consists of a 19 inch rack mountable card cage which will accept up to 14 plug-in interface boards.

\P1 \HR 3370,5

\P11 System Description and Specifications \END
The complete system description and specifications are outlined on the following pages.

\P13 1) \END System Description \81^ Page 3

\P13 2) \END Optical Specifications \81^ Page 4

\P13 3) \END Electrical Specifications \81^ Page 5

\P13 4) \END Mechanical Specifications \81^ Page 6

\P13 5) \END Environmental Specifications \81^ Page 7

\P3 *****

\P4 \I^SPECIFICATION UP-DATES WILL BE PROVIDED IN QUARTERLY BULLETIN.

\P5 *****

\P1 \HR 3370,5

\P11 For Further Information \END Contact Lightwave Multiplexer, Inc., 1300 South River Front, Kansas City, Missouri 66106

\P1 \HR 3370,5

\P6 (Continued)

**

LIGHTWAVE DATA MULTIPLEXER

Features

Below is a list of features included in the Lightwave Data Multiplexer.

- Plug-in interface modules for most common industrial signals
 - Long transmission distance without repeaters
 - Galvanic isolation between terminals
 - No EMI or EMP radiation susceptibility
 - 19" rack mount design
-

Description

The Multiplexer offers very versatile transmission of analog or digital output, and asynchronous data channels. Through the use of a microprocessor a large number and combination of these signals are multiplexed for interference free transmission over a single pair of optical fibers.

The Multiplexer consists of a 19 inch rack mountable card cage which will accept up to 14 plug-in interface boards.

System Description and Specifications

The complete system description and specifications are outlined on the following pages.

- 1) System Description - Page 3
- 2) Optical Specifications - Page 4
- 3) Electrical Specifications - Page 5
- 4) Mechanical Specifications - Page 6
- 5) Environmental Specifications - Page 7

SPECIFICATION UP-DATES WILL BE PROVIDED IN QUARTERLY BULLETIN.

For Further Information

Contact Lightwave Multiplexer, Inc., 1300 South River Front, Kansas City, Missouri 66106

(Continued)

TECHNICAL REPORT GLOSSARY

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TECHNICAL REPORT GLOSSARY

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September 1985

\PHED2\HR 4800,15\NL^HR 4800,15

\PHED3 LIGHTWAVE MULTIPLEXER RESEARCH\NL^ INFORMATION
SHEET \81^ MUL-290

\PHED4 LIGHTWAVE MULTIPLEXER RESEARCH\NL^ INFORMATION
SHEET \81^ MUL-290

\PHED5\HR 4800,15\NL^HR 4800,15

\PHED6 XX-200-300-101\NL^Section 8 Page #\NL^
September 1985

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\N^See proprietary restrictions on title page.

\PFUT5 PROPRIETARY\80^AUTHORIZED CLIENTS ONLY\NL^
\N^See proprietary restrictions on title page.

\PN 1

\HD1 GLOSSARY OF TERMS\NL^LIGHTWAVE DATA MULTIPLEXER

\P11 Analog \END

A continuously varying electrical waveform. On analog telephone lines, the current which flows is analogous to the sound waves spoken or tones transmitted.

\P11 Analog Lines \END

Analog lines are base bandwidth (3KHz) customer lines served by Line Units (LU).

\P11 Automatic Line Insulation Test (ALIT) \END

Circuit packs provided on the Modular Metallic Service Unit used to provide access to analog lines for an automatic testing system which looks for leakage or the presence of foreign potentials on subscriber loops.

\P11 Byte \END

A byte is a contiguous group of bits, generally eight bits, that are operated on as a unit.

TECHNICAL REPORT GLOSSARY

Input File (Continued)

\P11 Channel \END

A channel refers to that part of a Time Division Multiplexed bit stream that carries one voice message (i.e., a 64 Kbit/s channel). In usage, the term channel often implies two channels, one in each direction, between two points.

\P11 Channel Circuit \END

Circuits in the Line Unit (LU) that perform the A/D and D/A conversion, convert from 2-wire to 4-wire and vice-versa, perform supervision, and provide talking battery for analog lines.

\P11 Cluster \END

A group of two, three, or four Remote Switching Modules that is served as a single unit by the host office.

\P11 Concentrator \END

A solid state device that concentrates the access of 512, 384, or 256 lines to 64 channel units. This gives concentration ratios of 8:1, 6:1, or 4:1, respectively.

\P11 Concentrator Group (CG) \END

Another name for a Line Unit (LU), since a Line Unit consists of a group of concentrators.

\P11 Connector/Protector Frame \END

General term to specify the interconnection point between loop cable pairs and switching equipment, and the provision of protection against line overvoltage conditions.

GLOSSARY OF TERMS- LIGHTWAVE DATA MULTIPLEXER

Analog	A continuously varying electrical waveform. On analog telephone lines, the current which flows is analogous to the sound waves spoken or tones transmitted.
Analog Lines	Analog lines are base bandwidth (3KHz) customer lines served by Line Units (LU).
Automatic Line Insulation Test (ALIT)	Circuit packs provided on the Modular Metallic Service Unit used to provide access to analog lines for an automatic testing system which looks for leakage or the presence of foreign potentials on subscriber loops.
Byte	A byte is a contiguous group of bits, generally eight bits, that are operated on as a unit.
Channel	A channel refers to that part of a Time Division Multiplexed bit stream that carries one voice message (i.e., a 64 Kbit/s channel). In usage, the term channel often implies two channels, one in each direction, between two points.
Channel Circuit	Circuits in the Line Unit (LU) that perform the A/D and D/A conversion, convert from 2-wire to 4-wire and vice-versa, perform supervision, and provide talking battery for analog lines.
Cluster	A group of two, three, or four Remote Switching Modules that is served as a single unit by the host office.
Concentrator	A solid state device that concentrates the access of 512, 384, or 256 lines to 64 channel units. This gives concentration ratios of 8:1, 6:1, or 4:1, respectively.
Concentrator Group (CG)	Another name for a Line Unit (LU), since a Line Unit consists of a group of concentrators.
Connector/Protector Frame	General term to specify the interconnection point between loop cable pairs and switching equipment, and the provision of protection against line overvoltage conditions.

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\P2 \HR 3968,60

\P1 DESCRIPTION OF GOAL SEEKING OUTPUTS

\P2 \HR 3968,60

\P2 PROVIDED BY SUCCESS INC.

\P2 \HR 3968,60

\P3 BOCKERPUBLICATIONS/NEWARK,NJ. \NL^ NEYSID PUBLISHING/NEW YORK, NY.

**

GLB399 Output Reports

DESCRIPTION OF GOAL SEEKING OUTPUTS

PROVIDED BY SUCCESS INC.

**BOCKER PUBLICATIONS/NEWARK, NJ.
NEYSID PUBLISHING/NEW YORK, NY.**

ONE COLUMN TABLE OF CONTENTS

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 \P3 2.0 Revenue & Usage
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\P4 Calculation Guide
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\P3 5.0 Revenue & Usage
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\PHED6 GLB399\NL^Issue 2, September 1985
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\PFUT6 #P
\PFUT2 PROPRIETARY AND AUTHORIZED CLIENTS ONLY \NL^
See proprietary restrictions on title page.
\PFUT5 PROPRIETARY AND AUTHORIZED CLIENTS ONLY \NL^
See proprietary restrictions on title page.
\PN 13
\HD1 DESCRIPTION OF OUTPUT REPORTS
\HD2 4. DESCRIPTION OF OUTPUT REPORTS
\HD3 4.1 REPORT 1 \81^ REVENUE
AND USAGE
\P1 This report provides a summary of the
input data. Report 1 contains five output items and can
be printed in descending order by any of the output
items that the user specifies.
\P11 \B^Item 1 \80^ \END \N^Revenue.
\P11 \B^Item 2 \80^ \END \N^Gains.
\P11 \B^Item 3 \80^ \END \N^Losses.
\P11 \B^Item 4 \80^ \END \N^Balance Sheet.
\P11 \B^Item 5 \80^ \END \N^
Use per customer location per month.
\HD3 4.2 REPORT 2 \81^ CUMULATIVE DISCOUNTED
CASH FLOW
\P1 This report shows the cost and the
charge savings for a discount period
of 4 consecutive years, which can be started at any
year between 2 through 12. The program will
prompt the user for the starting year. The output can
be arranged in descending order by any of the following
three output items.
\P11 \B^Item 1 \80^ \END \N^Cum. Report.
\P11 \B^Item 2 \80^ \END \N^Discount Report.

```

ONE COLUMN BODY

Input File (Continued)

\P11\B^Item 3\80^END\N^Cash Flow Report;
it is either specified in the input data
file or computed by the program.

\HD3 4.3 REPORT 3\81^ NET CUMULATIVE DISCOUNTED CASH
FLOW

\P1 The net cumulative discounted cash flow is defined
as the difference between the loss of charge
savings and the costs. Six output items
are included in this report. The output can also be
printed in descending order and sorted by any output
items.

\P11\B^Item 1\80^END\N^Six months

\P11\B^Item 2\80^END\N^Two years

\P12\B^Items 3 through 6\81^END\N^4
consecutive years.

\HD3 4.4 CALCULATION GUIDE

\P1 The alphanumeric variable names used in this Section
are defined in Section 3, Model Input
Files, following each data item.

\HD4 4.4.1 INITIAL and ANNUAL COSTS

\P13 (1)\END\B^Initial Cost\NL^
\N^Initial cost equals the minimum of initial
costs computed by all five technologies
if Loss is specified; or equals the one
cost for the technology specified by the user
in the input data file. This can be expressed as:

**

DESCRIPTION OF OUTPUT REPORTS

4. DESCRIPTION OF OUTPUT REPORTS

4.1 REPORT 1 – REVENUE AND USAGE

This report provides a summary of the input data. Report 1 contains five output items and can be printed in descending order by any of the output items that the user specifies.

Item 1 — Revenue.

Item 2 — Gains.

Item 3 — Losses.

Item 4 — Balance Sheet.

Item 5 — Use per customer location per month.

4.2 REPORT 2 – CUMULATIVE DISCOUNTED CASH FLOW

This report shows the cost and the charge savings for a discount period of 4 consecutive years, which can be started at any year between 2 through 12. The program will prompt the user for the starting year. The output can be arranged in descending order by any of the following three output items.

Item 1 — Cum. Report.

Item 2 — Discount Report.

Item 3 — Cash Flow Report; it is either specified in the input data file or computed by the program.

4.3 REPORT 3 – NET CUMULATIVE DISCOUNTED CASH FLOW

The net cumulative discounted cash flow is defined as the difference between the loss of charge savings and the costs. Six output items are included in this report. The output can also be printed in descending order and sorted by any output items.

Item 1 — Six months

Item 2 — Two years

Items 3 through 6 – 4 consecutive years.

4.4 CALCULATION GUIDE

The alphanumeric variable names used in this Section are defined in Section 3, Model Input Files, following each data item.

4.4.1 INITIAL and ANNUAL COSTS

(1) Initial Cost

Initial cost equals the minimum of initial costs computed by all five technologies if Loss is specified; or equals the one cost for the technology specified by the user in the input data file. This can be expressed as:

ONE COLUMN BIBLIOGRAPHY

Format File

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\* Format for One Column Index \*

\* Page Definition \*

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\* Column Definitions \*

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\* Start Out In Full Page Mode \*

\CD 1 \END

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\* Type Faces For Paragraphs \*

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\* Type Faces For Page Heads & Feet \*

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\HDX02 TEXT=02 LM=0000 RM=5040 CM=FL LB=0240 LA=0000 \END \* HD2 \*

\* Paragraph Definitions \*

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\* Page Header Definitions \*

\PHEDX01 TEXT=04 LM=0553 RM=5593 CM=FL YPOS=7713 \END \* PHED1 \*
\PHEDX06 TEXT=04 LM=0553 RM=5593 CM=FR YPOS=7713 \END \* PHED6 \*

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ONE COLUMN BIBLIOGRAPHY

Format File (Continued)

* Underline Definition *

\ULPOS -25
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* Hyphenation Definition *

\HYMB 04
\HYMA 03
\HYMC 02
\HYML 08

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ONE COLUMN BIBLIOGRAPHY

Input File

\PFMT geneva.pfmt \END

\PFMT oneclbib.pfmt \END

\PHED1 GLB399 Output Reports\NL^
Bibliography

\PHED6 GLB399 Output Reports\NL^
Bibliography

\HD1 Bibliography

\HD2 Section 1

\P1 Barber, L.R., and Gardner, W.E., "Effective Report Reading with Accuracy and Speed." \I^Business Accountability Journal \N^ (1963)298-315.

\P1 Jackson, B.L., "Preparing Output Reports for Effective Readability." \I^Accounting Journal \N^(1975), 35-98.

\HD2 Section 2

\P1 James, K.P., and Lyons, P.J., "Classifying Input Data Files for Better Output Reports." \I^Accounting Journal \N^ (1973),110-135.

\P1 Michaels, L.A., "Using Input Efficiently." \I^American Business Journal \N^(1980), 5-55.

\HD2 Section 3

\P1 Weston, S.M., "Holding Reporting to Efficient Minimums." \I^Computer Analyst Journal \N^(1979), 98-115.

\P1 Wesley, J.L., "Corporate Reporting on Mass Scale." \I^Database Management Journal \N^(1983), 205-231.

\HD2 Section 4

\P1 Lasco, R.L., "Time and Efficiency in Reporting." \I^ Accounting Journal \N^(1979), 45-62.

\P1 Johnson, R.R., "Timing for Batch Processing of Reports." \I^Database Management Journal \N^(1984) 22-33.

Bibliography

Section 1

Barber, L.R., and Gardner, W.E., "Effective Report Reading with Accuracy and Speed." *Business Accountability Journal* (1963), 298-315.

Jackson, B.L., "Preparing Output Reports for Effective Readability." *Accounting Journal* (1975), 35-98.

Section 2

James, K.P., and Lyons, P.J., "Classifying Input Data Files for Better Output Reports." *Accounting Journal* (1973), 110-135.

Michaels, L.A., "Using Input Efficiently." *American Business Journal* (1980), 5-55.

Section 3

Weston, S.M., "Holding Reporting to Efficient Minimums." *Computer Analyst Journal* (1979), 98-115.

Wesley, J.L., "Corporate Reporting on Mass Scale." *Database Management Journal* (1983), 205-231.

Section 4

Lasco, R.L., "Time and Efficiency in Reporting." *Accounting Journal* (1979), 45-62.

Johnson, R.R., "Timing for Batch Processing of Reports." *Database Management Journal* (1984) 22-33.

TWO COLUMN COVER

Format File

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\* Type Faces For Paragraphs \*

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\* Paragraph Definitions \*

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\PX03 TEXT=04 LM=0000 RM=5040 CM=FR LB=0240 LA=0000 \END \* P3 \*

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\ULSIZ 010

\* Hyphenation Definition \*

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\HYMA 03
\HYMC 02
\HYML 08

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TWO COLUMN COVER

Input File

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\PFMT twoclvvr.pfmt \END
\HD1 THE\NL^TELEPHONE\NL^NETWORK
\P1 A BASIC COURSE IN TELEPHONE MAINTENANCE
\P1 \HR 5040,60
\P2 PROVIDED BY BEAVERTON INC.
\P3 LAWLER-SNYDER PUBLICATIONS/NEW YORK\NL^
KUPEINET PUBLISHING/NEW YORK
\*\*
```

THE TELEPHONE NETWORK

A BASIC COURSE IN TELEPHONE MAINTENANCE

PROVIDED BY BEAVERTON INC.

**LAWLER-SNYDER PUBLICATIONS/NEW YORK
KUPEINET PUBLISHING/NEW YORK**

TWO COLUMN TABLE OF CONTENTS

Format File

* Format for Two Column Table Of Contents *

* Page Definition *

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\COLX03 MINX=0553 MAXX=5593 MINY=0723 MAXY=7216 LB=0000 \END * Full Page *

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* Type Faces For Paragraphs *

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* Paragraph Definitions *

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\PX02 TEXT=03 LM=0000 RM=2400 CM=FR LB=0000 LA=0000 \END * P2-Body *

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TWO COLUMN TABLE OF CONTENTS

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* Page Header Definitions *

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* Hyphenation Definition *

\HYMB 04
\HYMA 03
\HYMC 02
\HYML 08

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TWO COLUMN TABLE OF CONTENTS

Input File

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\PHED6 TN-MAINTENANCE\NL^02/02/86
\PN 1
\CD 3 \END
\HD1 Section 1\NL^
The Telephone Network
\CD 1, 2 \END
\P11 1.0 \END Introduction
\FILL^B^12-1
\P11 2.0 \END Feeder and Distribution Plant
\FILL^B^12-1
\P11 3.0 \END Multiple, Dedicated and \NL^
Interfaced Plant
\FILL^B^12-2
\P11 4.0 \END Distribution Network Design
\FILL^B^12-2
\P11 5.0 \END Carrier Serving Areas
\FILL^B^12-3
\P11 6.0 \END Loop Conditioning for Higher \NL^
Bandwidth Services
\FILL^B^12-3
\P11 7.0 \END Metallic Transmission Media
\FILL^B^12-3
\P11 Introduction
\FILL^B^12-3
\P11 Definitions and Terminology
\FILL^B^12-5
\P11 Survey Results
\FILL^B^12-5
\P12 Composite
\FILL^B^12-5
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TWO COLUMN TABLE OF CONTENTS

Input File (Continued)

\P12 Residence
\FILL^ B^12-10

\P12 Business
\FILL^ B^12-10

\NC^

\P11 8.0 \END Voice Frequency Channel \NL^
Terminating Equipment
\FILL^ B^12-10

\P11 9.0 \END Analog Loop Carrier
\FILL^ B^12-10

\P11 10.0 \END Digital Loop Carrier (DLC)
\FILL^ B^12-20

\P11 Current Deployment
\FILL^ B^12-22

\P11 Present System Capabilities
\FILL^ B^12-22

\P11 New Developments
\FILL^ B^12-22

\P11 11.0 \END Distribution Network \NL^
Physical Structures
\FILL^ B^12-22

\NC^

* *

Section 1 The Telephone Network

1.0	Introduction	12-1	8.0	Voice Frequency Channel	12-10
2.0	Feeder and Distribution Plant	12-1	9.0	Analog Loop Carrier	12-10
3.0	Multiple, Dedicated and Interfaced Plant	12-2	10.0	Digital Loop Carrier (DLC)	12-20
4.0	Distribution Network Design	12-2		Current Deployment	12-22
5.0	Carrier Serving Areas	12-3		Present System Capabilities	12-22
6.0	Loop Conditioning for Higher Bandwidth Services	12-3		New Developments	12-22
7.0	Metallic Transmission Media	12-3	11.0	Distribution Network Physical Structures	12-22
	Introduction	12-3			
	Definitions and Terminology	12-5			
	Survey Results	12-5			
	Composite	12-5			
	Residence	12-10			
	Business	12-10			

TWO COLUMN BODY

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\TXT02 STYLE=N HSIZE=0100 VSIZE=0100 LEAD=0120 \END \* P1,P11-P12,PHED1-6,PFUT1-6 \*

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\* Paragraph Definitions \*

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\* Page Header Definitions \*

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\PHEDX06 TEXT=02 LM=0553 RM=5593 CM=FR YPOS=7712 \END \* PHED6 \*

\* Page Feet Definitions \*

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\PFUTX06 TEXT=02 LM=0553 RM=5593 CM=FR YPOS=0240 \END \* PFUT6 \*

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TWO COLUMN BODY

Format File (Continued)

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\ULSIZ 010

* Hyphenation Definition *

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\HYMA 03
\HYMC 02
\HYML 08

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THREE COLUMN TABLE

Format File

* Format For Three Column Table *

* Tab Position Definitions *

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\TBX04 TEXT=02 LM=0000 RM=1680 CM=FL GUTL=0160 GUTR=0000 \END
\TBX05 TEXT=02 LM=1680 RM=3360 CM=FL GUTL=0160 GUTR=0000 \END
\TBX06 TEXT=02 LM=3360 RM=5040 CM=FL GUTL=0160 GUTR=0000 \END
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THREE COLUMN TABLE

Input File

* Three Column Table *

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\PFMT tbl.pfmt \END

\PFMT tbl3.pfmt \END

\HD1 CONNECT TIMING\NL^

CALLING PERSON HANGS UP, CALLED PERSON HOLDS

\TS1

\STPSV

#1 4

5

6

\STP

1

2

3

NUMBER OF SWITCHING SYSTEM	LOCATION	CONNECTING TIME
No. 1 left switch, red	Nashville, Tennessee	1 to 3 seconds, underground
No. 2 left switch, green	Oklahoma City, Oklahoma	4 to 7 seconds, underground
No. 3 left switch, yellow	Kansas City, Kansas	8 to 10 seconds, underground
No. 4 left switch, blue	Kansas City, Missouri	11 to 15 seconds, underground
No. 1 center switch, red	Nashville, Tennessee	1 to 3 seconds, underground
No. 2 center switch, green	Oklahoma City, Oklahoma	4 to 7 seconds, underground
No. 3 center switch, yellow	Kansas City, Kansas	8 to 10 seconds, underground
No. 4 center switch, blue	Kansas City, Missouri	11 to 15 seconds, underground

THREE COLUMN TABLE

Input File (*Continued*)

No. 1 right switch, red	|Nashville, Tennessee	|1 to 3 seconds, underground
No. 2 right switch, green	|Oklahoma City, Oklahoma	|4 to 7 seconds, underground
No. 3 right switch, yellow	|Kansas City, Kansas	|8 to 10 seconds, underground
No. 4 right switch, blue	|Kansas City, Missouri	|11 to 15 seconds, underground

\ETP
\TE
**

**CONNECT TIMING
CALLING PERSON HANGS UP, CALLED PERSON HOLDS**

NUMBER OF SWITCHING SYSTEM	LOCATION	CONNECTING TIME
No. 1 left switch, red	Nashville, Tennessee	1 to 3 seconds, underground
No. 2 left switch, green	Oklahoma City, Oklahoma	4 to 7 seconds, underground
No. 3 left switch, yellow	Kansas City, Kansas	8 to 10 seconds, underground
No. 4 left switch, blue	Kansas City, Missouri	11 to 15 seconds, underground
No. 1 center switch, red	Nashville, Tennessee	1 to 3 seconds, underground
No. 2 center switch, green	Oklahoma City, Oklahoma	4 to 7 seconds, underground
No. 3 center switch, yellow	Kansas City, Kansas	8 to 10 seconds, underground
No. 4 center switch, blue	Kansas City, Missouri	11 to 15 seconds, underground
No. 1 right switch, red	Nashville, Tennessee	1 to 3 seconds, underground
No. 2 right switch, green	Oklahoma City, Oklahoma	4 to 7 seconds, underground
No. 3 right switch, yellow	Kansas City, Kansas	8 to 10 seconds, underground
No. 4 right switch, blue	Kansas City, Missouri	11 to 15 seconds, underground

FOUR COLUMN TABLE

Format File

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* Tab Position Definitions *

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FOUR COLUMN TABLE

Input File

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\HD1 CONNECT TIMING\NL^

CALLING PERSON HANGS UP, CALLED PERSON HOLDS

\TS1

\STPSV

#1 5

6

7

8

\STP

1	2	3	4
NUMBER OF SWITCHING SYSTEM	LOCATION	CONNECT TIME	DISCONNECT TIME
No. 1 red switch	Nashville, TN	1 to 3 seconds	1 to 3 seconds
No. 2 green switch	Oklahoma City, OK	4 to 7 seconds	4 to 7 seconds
No. 3 yellow switch	Kansas City, KS	8 to 10 seconds	8 to 10 seconds
No. 4 blue switch	Kansas City, MO	11 to 15 seconds	11 to 15 seconds
No. 1 red switch	Nashville, TN	1 to 3 seconds	1 to 3 seconds
No. 2 green switch	Oklahoma City, OK	4 to 7 seconds	4 to 7 seconds
No. 3 yellow switch	Kansas City, KS	8 to 10 seconds	8 to 10 seconds

FOUR COLUMN TABLE

Input File (*Continued*)

No. 4 blue switch	Kansas City, MO	|11 to 15 seconds	|11 to 15 seconds
No. 1 red switch	Nashville, TN	|1 to 3 seconds	|1 to 3 seconds
No. 2 green switch	Oklahoma City, OK	|4 to 7 seconds	|4 to 7 seconds
No. 3 yellow switch	Kansas City, KS	|8 to 10 seconds	|8 to 10 seconds
No. 4 blue switch	Kansas City, MO	|11 to 15 seconds	|11 to 15 seconds

\ETP
\TE
**

**CONNECT TIMING
CALLING PERSON HANGS UP, CALLED PERSON HOLDS**

NUMBER OF SWITCHING SYSTEM	LOCATION	CONNECT TIME	DISCONNECT TIME
No. 1 red switch	Nashville, TN	1 to 3 seconds	1 to 3 seconds
No. 2 green switch	Oklahoma City, OK	4 to 7 seconds	4 to 7 seconds
No. 3 yellow switch	Kansas City, KS	8 to 10 seconds	8 to 10 seconds
No. 4 blue switch	Kansas City, MO	11 to 15 seconds	11 to 15 seconds
No. 1 red switch	Nashville, TN	1 to 3 seconds	1 to 3 seconds
No. 2 green switch	Oklahoma City, OK	4 to 7 seconds	4 to 7 seconds
No. 3 yellow switch	Kansas City, KS	8 to 10 seconds	8 to 10 seconds
No. 4 blue switch	Kansas City, MO	11 to 15 seconds	11 to 15 seconds
No. 1 red switch	Nashville, TN	1 to 3 seconds	1 to 3 seconds
No. 2 green switch	Oklahoma City, OK	4 to 7 seconds	4 to 7 seconds
No. 3 yellow switch	Kansas City, KS	8 to 10 seconds	8 to 10 seconds
No. 4 blue switch	Kansas City, MO	11 to 15 seconds	11 to 15 seconds

SIX COLUMN TABLE

Format File

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* Tab Position Definitions *

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\TBX05 TEXT=01 LM=3360 RM=4200 CM=CE GUTL=0000 GUTR=0000 \END
\TBX06 TEXT=01 LM=4200 RM=5040 CM=CE GUTL=0000 GUTR=0000 \END
\TBX07 TEXT=02 LM=0000 RM=0840 CM=CE GUTL=0000 GUTR=0000 \END
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\TBX09 TEXT=02 LM=1680 RM=2520 CM=CE GUTL=0000 GUTR=0000 \END
\TBX10 TEXT=02 LM=2520 RM=3360 CM=CE GUTL=0000 GUTR=0000 \END
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SIX COLUMN TABLE

Input File

* Six Column Table *

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\HD1 6COLUMNTABLE

\TS1

\STPSV

#1 7 8 9 10 11 12

\STP

	1	2	3	4	5	6
	OPEN	DIRECT	COPPER	CLOSED	ALTERNATE	ALUMINUM
1	No	|Yes	|No	|Yes	|No	|Yes
	Yes	|No	|Yes	|No	|Yes	|No
	No	|No	|No	|Yes	|Yes	|Yes
	Yes	|Yes	|No	|No	|No	|Yes
	Yes	|Yes	|Yes	|No	|No	|No
	No	|Yes	|No	|Yes	|No	|Yes
	Yes	|No	|Yes	|No	|Yes	|No
	No	|No	|No	|Yes	|Yes	|Yes
	Yes	|Yes	|Yes	|No	|No	|No

\ETP

\TE

**

6 COLUMN TABLE

OPEN	DIRECT	COPPER	CLOSED	ALTERNATE	ALUMINUM
No	Yes	No	Yes	No	Yes
Yes	No	Yes	No	Yes	No
No	No	No	Yes	Yes	Yes
Yes	Yes	No	No	No	Yes
Yes	Yes	Yes	No	No	No
No	Yes	No	Yes	No	Yes
Yes	No	Yes	No	Yes	No
No	No	No	Yes	Yes	Yes
Yes	Yes	Yes	No	No	No

SIX COLUMN TABLE A

Format File

* Format For Six Column Table with Centered Head *

* Tab Position Definitions *

```
\TBX01 TEXT=01 LM=0000 RM=0840 CM=CE GUTL=0000 GUTR=0000 \END
\TBX02 TEXT=01 LM=0840 RM=1680 CM=CE GUTL=0000 GUTR=0000 \END
\TBX03 TEXT=01 LM=1680 RM=2520 CM=CE GUTL=0000 GUTR=0000 \END
\TBX04 TEXT=01 LM=2520 RM=3360 CM=CE GUTL=0000 GUTR=0000 \END
\TBX05 TEXT=01 LM=3360 RM=4200 CM=CE GUTL=0000 GUTR=0000 \END
\TBX06 TEXT=01 LM=4200 RM=5040 CM=CE GUTL=0000 GUTR=0000 \END
\TBX07 TEXT=02 LM=0000 RM=0840 CM=CE GUTL=0000 GUTR=0000 \END
\TBX08 TEXT=02 LM=0840 RM=1680 CM=CE GUTL=0000 GUTR=0000 \END
\TBX09 TEXT=02 LM=1680 RM=2520 CM=CE GUTL=0000 GUTR=0000 \END
\TBX10 TEXT=02 LM=2520 RM=3360 CM=CE GUTL=0000 GUTR=0000 \END
\TBX11 TEXT=02 LM=3360 RM=4200 CM=CE GUTL=0000 GUTR=0000 \END
\TBX12 TEXT=02 LM=4200 RM=5040 CM=CE GUTL=0000 GUTR=0000 \END
\TBX13 TEXT=01 LM=0000 RM=5040 CM=CE GUTL=0000 GUTR=0000 \END
```

* Table Setup Definition *

```
\TSX1 COMP=LINE ROWDEPTH=VAR LB=0240 LA=0000 RULES=TBRL \END
```

SIX COLUMN TABLE A

Input File

* Six Column Table with Centered Head *

\PFMT geneva.pfmt \END

\PFMT tbl.pfmt \END

\PFMT tbl6a.pfmt \END

\HD1 6 COLUMN TABLE

\TS1

\STPSV

#1	1	2	3	4	5	6
----	---	---	---	---	---	---

\STPSV

#2	7	8	9	10	11	12
----	---	---	---	----	----	----

\STP

13

UNDERGROUND CABLE CHART TO DETERMINE TYPE

1	_OPEN	+DIRECT	+COPPER	+CLOSED	+ALTERNATE	+ALUMINUM
2	No	|Yes	|No	|Yes	|No	|Yes
	Yes	|No	|Yes	|No	|Yes	|No
	No	|No	|No	|Yes	|Yes	|Yes
	Yes	|Yes	|No	|No	|No	|Yes
	Yes	|Yes	|Yes	|No	|No	|No
	No	|Yes	|No	|Yes	|No	|Yes
	Yes	|No	|Yes	|No	|Yes	|No
	No	|No	|No	|Yes	|Yes	|Yes
	Yes	|No	|Yes	|No	|Yes	|No

\ETP

\TE

**

6 COLUMN TABLE

UNDERGROUND CABLE CHART TO DETERMINE TYPE					
OPEN	DIRECT	COPPER	CLOSED	ALTERNATE	ALUMINUM
No	Yes	No	Yes	No	Yes
Yes	No	Yes	No	Yes	No
No	No	No	Yes	Yes	Yes
Yes	Yes	No	No	No	Yes
Yes	Yes	Yes	No	No	No
No	Yes	No	Yes	No	Yes
Yes	No	Yes	No	Yes	No
No	No	No	Yes	Yes	Yes
Yes	Yes	Yes	No	No	No

SIX COLUMN TABLE B

Format File

* Format For Six Column Table with Additional Heads *

* Tab Position Definitions *

```
\TBX01 TEXT=01 LM=0000 RM=0840 CM=CE GUTL=0000 GUTR=0000 \END
\TBX02 TEXT=01 LM=0840 RM=1680 CM=CE GUTL=0000 GUTR=0000 \END
\TBX03 TEXT=01 LM=1680 RM=2520 CM=CE GUTL=0000 GUTR=0000 \END
\TBX04 TEXT=01 LM=2520 RM=3360 CM=CE GUTL=0000 GUTR=0000 \END
\TBX05 TEXT=01 LM=3360 RM=4200 CM=CE GUTL=0000 GUTR=0000 \END
\TBX06 TEXT=01 LM=4200 RM=5040 CM=CE GUTL=0000 GUTR=0000 \END
\TBX07 TEXT=02 LM=0000 RM=0840 CM=CE GUTL=0000 GUTR=0000 \END
\TBX08 TEXT=02 LM=0840 RM=1680 CM=CE GUTL=0000 GUTR=0000 \END
\TBX09 TEXT=02 LM=1680 RM=2520 CM=CE GUTL=0000 GUTR=0000 \END
\TBX10 TEXT=02 LM=2520 RM=3360 CM=CE GUTL=0000 GUTR=0000 \END
\TBX11 TEXT=02 LM=3360 RM=4200 CM=CE GUTL=0000 GUTR=0000 \END
\TBX12 TEXT=02 LM=4200 RM=5040 CM=CE GUTL=0000 GUTR=0000 \END
\TBX13 TEXT=01 LM=0000 RM=5040 CM=CE GUTL=0000 GUTR=0000 \END
\TBX14 TEXT=01 LM=0000 RM=2520 CM=CE GUTL=0000 GUTR=0000 \END
\TBX15 TEXT=01 LM=2520 RM=5040 CM=CE GUTL=0000 GUTR=0000 \END
```

* Table Setup Definition *

```
\TSX1 COMP=LINE ROWDEPTH=VAR LB=0240 LA=0000 RULES=TB LR \END
```

**

SIX COLUMN TABLE B

Input File

* Six Column Table with Additional Heads *

\PFMT geneva.pfmt \END

\PFMT tbl.pfmt \END

\PFMT tbl6b.pfmt \END

\HD1 6 COLUMNTABLE

\TS1

\STPSV

#1	1	2	3	4	5	6
----	---	---	---	---	---	---

\STPSV

#2	7	8	9	10	11	12
----	---	---	---	----	----	----

\STPSV

#3	14			15		
----	----	--	--	----	--	--

\STP

13

3 UNDERGROUND CABLE CHART TO DETERMINE TYPE

1 _CIRCUIT TYPE 1

+CIRCUIT TYPE 2

2	_OPEN	+DIRECT	+COPPER	+CLOSED	+ALTERNATE	+ALUMINUM
	No	|Yes	|No	|Yes	|No	|Yes
	Yes	|No	|Yes	|No	|Yes	|No
	No	|No	|No	|Yes	|Yes	|Yes
	Yes	|Yes	|No	|No	|No	|Yes
	Yes	|Yes	|Yes	|No	|No	|No
	No	|Yes	|No	|Yes	|No	|Yes
	Yes	|No	|Yes	|No	|Yes	|No
	No	|No	|No	|Yes	|Yes	|Yes
	Yes	|Yes	|No	|No	|No	|Yes

\ETP

\TE

**

6 COLUMN TABLE

UNDERGROUND CABLE CHART TO DETERMINE TYPE					
CIRCUIT TYPE 1			CIRCUIT TYPE 2		
OPEN	DIRECT	COPPER	CLOSED	ALTERNATE	ALUMINUM
No	Yes	No	Yes	No	Yes
Yes	No	Yes	No	Yes	No
No	No	No	Yes	Yes	Yes
Yes	Yes	No	No	No	Yes
Yes	Yes	Yes	No	No	No
No	Yes	No	Yes	No	Yes
Yes	No	Yes	No	Yes	No
No	No	No	Yes	Yes	Yes
Yes	Yes	Yes	No	No	No

SIX COLUMN TABLE C

Format File

* Format For Six Column Table - Adding Column *

* Tab Position Definitions *

```
\TBX01 TEXT=01 LM=0720 RM=1440 CM=CE GUTL=0000 GUTR=0000 \END
\TBX02 TEXT=01 LM=1440 RM=2160 CM=CE GUTL=0000 GUTR=0000 \END
\TBX03 TEXT=01 LM=2160 RM=2880 CM=CE GUTL=0000 GUTR=0000 \END
\TBX04 TEXT=01 LM=2880 RM=3600 CM=CE GUTL=0000 GUTR=0000 \END
\TBX05 TEXT=01 LM=3600 RM=4320 CM=CE GUTL=0000 GUTR=0000 \END
\TBX06 TEXT=01 LM=4320 RM=5040 CM=CE GUTL=0000 GUTR=0000 \END
\TBX07 TEXT=02 LM=0720 RM=1440 CM=CE GUTL=0000 GUTR=0000 \END
\TBX08 TEXT=02 LM=1440 RM=2160 CM=CE GUTL=0000 GUTR=0000 \END
\TBX09 TEXT=02 LM=2160 RM=2880 CM=CE GUTL=0000 GUTR=0000 \END
\TBX10 TEXT=02 LM=2880 RM=3600 CM=CE GUTL=0000 GUTR=0000 \END
\TBX11 TEXT=02 LM=3600 RM=4320 CM=CE GUTL=0000 GUTR=0000 \END
\TBX12 TEXT=02 LM=4320 RM=5040 CM=CE GUTL=0000 GUTR=0000 \END
\TBX13 TEXT=01 LM=0000 RM=5040 CM=CE GUTL=0000 GUTR=0000 \END
\TBX14 TEXT=01 LM=0720 RM=2880 CM=CE GUTL=0000 GUTR=0000 \END
\TBX15 TEXT=01 LM=2880 RM=5040 CM=CE GUTL=0000 GUTR=0000 \END
\TBX16 TEXT=01 LM=0000 RM=0720 CM=CE GUTL=0000 GUTR=0000 \END
\TBX17 TEXT=02 LM=0000 RM=0720 CM=CE GUTL=0000 GUTR=0000 \END
```

* Table Setup Definition *

```
\TSX1 COMP=LINE ROWDEPTH=VAR LB=0240 LA=0000 RULES=TBRL \END
```

**

SIX COLUMN TABLE C

Input File

* Six Column Table with Additional Heads *

\PFMT geneva.pfmt \END
 \PFMT tbl.pfmt \END
 \PFMT tbl6c.pfmt \END

\HD1 ADDING A COLUMN TO THE 6 COLUMN TABLE

\TS1

\STPSV

#1	16	1	2	3	4	5	6
----	----	---	---	---	---	---	---

\STPSV

#2	17	7	8	9	10	11	12
----	----	---	---	---	----	----	----

\STPSV

#3	14			15			
----	----	--	--	----	--	--	--

\STP

13

UNDERGROUND CABLE CHART TO DETERMINE TYPE

3 _CIRCUIT TYPE 1

+CIRCUIT TYPE 2

1	_COLOR	+OPEN	+DIRECT	+COPPER	+CLOSED	+ALTERNATE	+ALUMINUM
2	RED	|No	|Yes	|No	|Yes	|No	|Yes
	GREEN	|Yes	|No	|Yes	|No	|Yes	|No
	BLUE	|No	|No	|No	|Yes	|Yes	|Yes
	YELLOW	|Yes	|Yes	|No	|No	|No	|Yes
	BLACK	|Yes	|Yes	|Yes	|No	|No	|No
	BROWN	|No	|Yes	|No	|Yes	|No	|Yes
	ORANGE	|Yes	|No	|Yes	|No	|Yes	|No
	PURPLE	|No	|No	|No	|Yes	|Yes	|Yes
	WHITE	|Yes	|Yes	|No	|No	|No	|Yes
	GRAY	|Yes	|Yes	|Yes	|No	|No	|No

\ETP

\TE

**

ADDING A COLUMN TO THE 6 COLUMN TABLE

UNDERGROUND CABLE CHART TO DETERMINE TYPE						
COLOR	CIRCUIT TYPE 1			CIRCUIT TYPE 2		
	OPEN	DIRECT	COPPER	CLOSED	ALTERNATE	ALUMINUM
RED	No	Yes	No	Yes	No	Yes
GREEN	Yes	No	Yes	No	Yes	No
BLUE	No	No	No	Yes	Yes	Yes
YELLOW	Yes	Yes	No	No	No	Yes
BLACK	Yes	Yes	Yes	No	No	No
BROWN	No	Yes	No	Yes	No	Yes
ORANGE	Yes	No	Yes	No	Yes	No
PURPLE	No	No	No	Yes	Yes	Yes
WHITE	Yes	Yes	Yes	No	No	No
GRAY	Yes	Yes	Yes	No	No	No

TWO COLUMN BODY

Input File

\PFMT geneva.pfmt \END

\PFMT twoclbdy.pfmt \END

\PHED1 TN-MAINTENANCE\NL^
02/02/86

\PHED6 TN-MAINTENANCE\NL^
02/02/86

\PFUT1 1- 10

\PFUT6 1- 10

\PN 1

\HD1 MAINTENANCE TESTS ON TELEPHONES

\P11 1.21 \END To properly maintain the telephone, test signals are periodically applied to the top at the connector. These tests occur on start and stop but not on DOD service.

\P1 The maximum positive voltage applied to the terminal equipment in the on-hook state can be up to a maximum of 202 volts dc between the tip and ring conductors. This maximum can also be between conductor and ground.

\P1 The maximum negative voltage, with respect to ground, that can be applied to the top with the equipment in the on-hook state is 165 volts. These telephone maintenance tests of both dc and ac signals are as follows.

\P12 1) \END AC signals of 10 volts RMS or less, 24 Hz superimposed in -70 to +70 volts dc, on tip (with ring grounded), on ring (with tip grounded), or on both tip and ring, with respect to ground.

\P12 2) \END DC voltages from 0 to $\sqrt{245}$ 202 volts, tip to ring, or on the tip with the ring grounded, or on the ring with the tip grounded, or on both tip and ring with respect to ground.

\P12 3) \END AC signals of 3 volts RMS or less, tip to ring, at any frequency from 1000 to 2000 Hz. It could be desirable that the customer premises equipment not respond to ac signals of 5 volts RMS or less, tip to ring, at any frequency from 1000 to 5000 Hz tip to ring or tip and ring to ground.

\P11 1.22 \END The conditions described in (1) through (3) above may be applied during mechanized maintenance procedures. Such tests are applied sequentially; the series of tests may last up to 12 seconds.

\HD1 TESTS MADE IN THE PROCESS OF CONNECTING OR DISCONNECTING A CALL

TWO COLUMN BODY

Input File (Continued)

\P11 1.23 \END There are three tests made in the process of connecting or disconnecting a call that cause a detectable condition outside the switching system. The tests discussed are for LLLD; not all PBXs use similar tests. The tests can occur on start and stop but not on DOD service.

\HD1 Power Cross Test

\P11 1.24 \END The power cross test is made before originating and terminating calls. The test detects ac or positive dc voltages of over 16 volts as a power cross on start lines or stop lines. To make this test, detectors are placed tip to ground and ring to ground on the line. The input resistance of each detector is about 18 kilohms on calls originating from the line. For calls terminating to the line, the ring detector resistance is also about 18 kilohms while the tip detector resistance is about 36 kilohms. The test lasts 50 to 100 milliseconds. The test has caused call failures on originating calls from ground-start lines where the terminal recognizes the 18-kilohm input resistance of the detector as a grounded tip and proceeds as if dial tone is present.

\HD1 Low Line Resistance Test

\P11 1.25 \END The low line resistance test is designed to prevent false charging where irregularities exist in the called line. A check is performed to ensure that the tip-to-ring resistance is not low enough to cause immediate ring trip upon application of ringing. The test is performed prior to ringing in the terminating call sequence. The low line resistance test is made by applying approximately a 250-ohm ground to the tip and approximately a 250-ohm battery to the ring on start lines. On stop lines, the battery and ground are reversed. In other systems, this test on ground-start lines is known as PBX start test. The PBX top test is discussed in more detail in parts 2.43 through 2.46. This test will see resistances below 6,300 ohms as a failure and may see resistances below 17,000 ohms as a failure.

\HD1 Restore and Verify Test

\P11 1.26 \END A restore and verify test is automatically performed on a line after the line is involved in a telephone connection and before it is idled. This test determines if supervision has been returned to the line and if the cutoff contact has been closed. The restore and verify test procedure differs for start lines and stop lines. The circuit places a 1000- or 2000-ohm resistor from the tip to the ring for a start line. The resistor is placed between the ring and ground for a stop line. The test takes about 50 to 100 milliseconds. With start service, the resistance of the line ferrrod being tested is approximately 660 ohms to battery on the side of the line, and 660 ohms to ground on the tip side of the line.

\NC^

*\^

MAINTENANCE TESTS ON TELEPHONES

1.21 To properly maintain the telephone, test signals are periodically applied to the top at the connector. These tests occur on start and stop but not on DOD service.

The maximum positive voltage applied to the terminal equipment in the on-hook state can be up to a maximum of 202 volts dc between the tip and ring conductors. This maximum can also be between conductor and ground.

The maximum negative voltage, with respect to ground, that can be applied to the top with the equipment in the on-hook state is 165 volts. These telephone maintenance tests of both dc and ac signals are as follows.

- 1) AC signals of 10 volts RMS or less, 24 Hz superimposed in -70 to +70 volts dc, on tip (with ring grounded), on ring (with tip grounded), or on both tip and ring, with respect to ground.
- 2) DC voltages from 0 to \pm 202 volts, tip to ring, or on the tip with the ring grounded, or on the ring with the tip grounded, or on both tip and ring with respect to ground.
- 3) AC signals of 3 volts RMS or less, tip to ring, at any frequency from 1000 to 2000 Hz. It could be desirable that the customer premises equipment not respond to ac signals of 5 volts RMS or less, tip to ring, at any frequency from 1000 to 5000 Hz tip to ring or tip and ring to ground.

1.22 The conditions described in (1) through (3) above may be applied during mechanized maintenance procedures. Such tests are applied sequentially; the series of tests may last up to 12 seconds.

TESTS MADE IN THE PROCESS OF CONNECTING OR DISCONNECTING A CALL

1.23 There are three tests made in the process of connecting or disconnecting a call that cause a detectable condition outside the switching system. The tests discussed are for LLLD; not all PBXs use similar tests. The tests can occur on start and stop but not on DOD service.

Power Cross Test

1.24 The power cross test is made before originating and terminating calls. The test detects ac or positive dc voltages of over 16 volts as a power cross on start lines or stop lines. To make this test, detectors are placed tip to ground and ring to ground on the line. The input resistance of each detector is about 18 kilohms on calls originating from the line. For calls terminating to the line, the ring detector resistance is also about 18 kilohms while the tip detector resistance is about 36 kilohms. The test lasts 50 to 100 milliseconds. The test has caused call failures on originating calls from ground-start lines where the terminal recognizes the 18-kilohm input resistance of the detector as a grounded tip and proceeds as if dial tone is present.

Low Line Resistance Test

1.25 The low line resistance test is designed to prevent false charging where irregularities exist in the called line. A check is performed to ensure that the tip-to-ring resistance is not low enough to cause immediate ring trip upon application of ringing. The test is performed prior to ringing in the terminating call sequence. The low line resistance test is made by applying approximately a 250-ohm ground to the tip and approximately a 250-ohm battery to the ring on start lines. On stop lines, the battery and ground are reversed. In other systems, this test on ground-start lines is known as PBX start test. The PBX top test is discussed in more detail in parts 2.43 through 2.46. This test will see resistances below 6,300 ohms as a failure and may see resistances below 17,000 ohms as a failure.

Restore and Verify Test

1.26 A restore and verify test is automatically performed on a line after the line is involved in a telephone connection and before it is idled. This test determines if supervision has been returned to the line and if the cutoff contact has been closed. The restore and verify test procedure differs for start lines and stop lines. The circuit places a 1000- or 2000-ohm resistor from the tip to the ring for a start line. The resistor is placed between the ring and ground for a stop line. The test takes about 50 to 100 milliseconds. With start service, the resistance of the line ferrod being tested is approximately 660 ohms to battery on the side of the line, and 660 ohms to ground on the tip side of the line.

TWO COLUMN INDEX

Format File

```

\* Format for Two Column Index \*

\* Page Definition \*

\PDFWIDTH=6146 DEPTH=7953 LM=0000 ORN=0 DUPLEX=Y\END

\* Column Definitions \*

\COLX01 MINX=0553 MAXX=2953 MINY=0723 MAXY=7216 LB=0360 \END \* Left Col. \*
\COLX02 MINX=3193 MAXX=5593 MINY=0723 MAXY=7216 LB=0360 \END \* Right Col. \*
\COLX03 MINX=0553 MAXX=5593 MINY=0723 MAXY=7216 LB=0000 \END \* Full Page \*

\* Start Out In Full Page Mode \*

\CD 3 \END

\* Type Faces For Paragraphs \*

\TXT01 STYLE=B HSIZE=0240 VSIZE=0240 LEAD=0240 \END \* P1 \*
\TXT02 STYLE=N HSIZE=0100 VSIZE=0100 LEAD=0160 \END \* P2 \*

\* Type Faces For Page Heads \*

\TXT03 STYLE=B HSIZE=0100 VSIZE=0100 LEAD=0140 \END \* PHED1-6 \*

\* Header Definitions \*

\HDX01 TEXT=01 LM=0000 RM=5040 CM=FL LB=0240 LA=0000 \END \* HD1 \*
\HDX02 TEXT=01 LM=0000 RM=5040 CM=FL LB=0080 LA=0000 \END \* HD2 \*
\HDX03 TEXT=01 LM=0420 RM=2400 CM=FL LB=0600 LA=0000 \END \* HD3 \*

\* Paragraph Definition \*

\PX01 TEXT=02 LM=0420 RM=2400 CM=FL LB=0180 LA=0000 \END \* P1-Body \*

\* Page Header Definitions \*

\PHDX01 TEXT=03 LM=0553 RM=5593 CM=FL YPOS=7712 \END \* PHED1 \*
\PHDX06 TEXT=03 LM=0553 RM=5593 CM=FR YPOS=7712 \END \* PHED6 \*

\* Underline Definition \*

\ULPOS -25
\ULSIZ 010

```

TWO COLUMN INDEX

Format File (Continued)

* Hyphenation Definition *

\HYMB 04

\HYMA 03

\HYMC 02

\HYML 08

* *

TWO COLUMN INDEX

Input File

\PFMT geneva.pfmt \END

\PFMT twocliidx.pfmt \END

\PHED1 TN-MAINTENANCE\NL^
02/02/86

\PHED6 TN-MAINTENANCE\NL^
02/02/86

\HD1 Index

\HD2 \HR 5040,5

\CD 1, 2 \END

\HD3 A

\P1 Accessing, 8, 9, 12, 14

\P1 Advising, 1, 2, 4,

\P1 Alternate routeways, 5, 8, 11, 20

\P1 Analyzing Phases

\HD3 B

\P1 Billing, 1, 3, 4, 7

\P1 Branch offices, 25, 26, 27

\P1 Bypassing, 10, 15, 23, 24

\HD3 C

\P1 Conductors, 12, 15, 17,

\P1 Criteria, 30

\P1 Cross wiring, 20, 21, 22,

\P1 Cross Referencing Material, 29, 30

\P1 CRT, 27, 28

\HD3 D

\P1 Damages, 25, 26, 27

\P1 Dialing, 1, 3, 4, 7

\P1 Dial tone, 1, 2, 3,

\P1 DOD service, 27, 28, 29

TWO COLUMN INDEX

Input File (Continued)

\HD3 E

\P1 Express calling, 23, 24, 25

\NC^

\HD3 F

\P1 Facsimile, 2,

\P1 Follow up, 27, 28

\P1 Forwarding calls, 16, 18

\NC^

Index

A

Accessing, 8, 9, 12, 14
Advising, 1, 2, 4,
Alternate routeways, 5, 8, 11, 20
Analyzing phases, 10, 15

B

Billing, 1, 3, 4, 7
Branch offices, 25, 26, 27
Bypassing, 10, 15, 23, 24

C

Conductors, 12, 15, 17,
Criteria, 30
Cross wiring, 20, 21, 22,
Cross referencing material, 29, 30
CRT, 27, 28

D

Damages, 25, 26, 27
Dialing, 1, 3, 4, 7
Dial tone, 1, 2, 3,
DOD service, 27, 28, 29

E

Express calling, 23, 24, 25

F

Facsimile, 2,
Follow up, 27, 28
Forwarding calls, 16, 18

TABLE BASE

Format File

* Format For Table Base *

* Page Definition *

\PDEF WIDTH=6146 DEPTH=7953 LM=0000 DUPLEX=N ORN=0 \END

* Column Definition *

\COLX01 MINX=0553 MAXX=5593 MINY=0736 MAXY=7216 LB=0000 \END

* Start Out In Full Page Mode *

\CD 1 \END

* Type Faces For Table *

\TXT01 STYLE=B HSIZE=0080 VSIZE=0080 LEAD=0100 \END * Table Head *

\TXT02 STYLE=N HSIZE=0100 VSIZE=0100 LEAD=0120 \END * Body Copy *

* Type Face For Header *

\TXT03 STYLE=B HSIZE=0100 VSIZE=0100 LEAD=0120 \END * HD1 *

* Header Definition *

\HDX01 TEXT=03 LM=0240 RM=5040 CM=CE LB=0240 LA=0000 \END

* Underline Definition *

\ULPOS -20

\ULSIZ 010

TWO COLUMN TABLE

Format File

* Format For Two Column Table *

* Tab Position Definitions *

```
\TBX01 TEXT=01 LM=0000 RM=2520 CM=CE GUTL=0000 GUTR=0000 \END  
\TBX02 TEXT=01 LM=2520 RM=5040 CM=CE GUTL=0000 GUTR=0000 \END  
\TBX03 TEXT=02 LM=0000 RM=2520 CM=FL GUTL=0160 GUTR=0000 \END  
\TBX04 TEXT=02 LM=2520 RM=5040 CM=FL GUTL=0160 GUTR=0000 \END
```

* Table Setup Definition *

```
\TSX1 COMP=LINE ROWDEPTH=VAR LB=0240 LA=0000 RULES=TBLR \END
```

TWO COLUMN TABLE

Input File

* Two Column Table *

\PFMT geneva.pfmt \END

\PFMT tbl.pfmt \END

\PFMT tbl2.pfmt \END

\HD1 CONNECT TIMING\NL^

CALLING PERSON HANGS UP, CALLED PERSON HOLDS

\TS1

\STPSV

#1 3

4

\STP

1

2

	CONNECTING MAIN OFFICE SWITCHING SYSTEM	|TIMED DELAY IN DISCONNECTING |MAIN OFFICE FROM INCOMING CALL |TO RESTORAL OF CALLED |LINE TO IDLE STATE
1	No. 1 left switch at junction 1	|1 to 3 seconds, underground cable
	No. 2 left switch at junction 2	|4 to 7 seconds, underground cable
	No. 3 left switch at junction 3	|8 to 10 seconds, underground cable
	No. 4 left switch at junction 1	|11 to 15 seconds, underground cable
	No. 1 center switch at junction 1	|1 to 3 seconds, underground cable
	No. 2 center switch at junction 2	|4 to 7 seconds, underground cable
	No. 3 center switch at junction 3	|8 to 10 seconds, underground cable
	No. 4 center switch at junction 4	|11 to 15 seconds, underground cable

TWO COLUMN TABLE

Input File (*Continued*)

No. 1 right switch at junction 1	| 1 to 3 seconds, underground cable
No. 2 right switch at junction 2	| 4 to 7 seconds, underground cable
No. 3 right switch at junction 3	| 8 to 10 seconds, underground cable
No. 4 right switch at junction 4	| 11 to 15 seconds, underground cable

\ETP

\TE

**

**CONNECT TIMING
CALLING PERSON HANGS UP, CALLED PERSON HOLDS**

CONNECTING MAIN OFFICE SWITCHING SYSTEM	TIMED DELAY IN DISCONNECTING MAIN OFFICE FROM INCOMING CALL TO RESTORAL OF CALLED LINE TO IDLE STATE
No. 1 left switch at junction 1	1 to 3 seconds, underground cable
No. 2 left switch at junction 2	4 to 7 seconds, underground cable
No. 3 left switch at junction 3	8 to 10 seconds, underground cable
No. 4 left switch at junction 1	11 to 15 seconds, underground cable
No. 1 center switch at junction 1	1 to 3 seconds, underground cable
No. 2 center switch at junction 2	4 to 7 seconds, underground cable
No. 3 center switch at junction 3	8 to 10 seconds, underground cable
No. 4 center switch at junction 4	11 to 15 seconds, underground cable
No. 1 right switch at junction 1	1 to 3 seconds, underground cable
No. 2 right switch at junction 2	4 to 7 seconds, underground cable
No. 3 right switch at junction 3	8 to 10 seconds, underground cable
No. 4 right switch at junction 4	11 to 15 seconds, underground cable

TWO COLUMN TABLE A

Format File

* Format For Two Column Table w/Centered Head *

* Tab Position Definitions *

```
\TBX01 TEXT=01 LM=0000 RM=2520 CM=CE GUTL=0000 GUTR=0000 \END
\TBX02 TEXT=01 LM=2520 RM=5040 CM=CE GUTL=0000 GUTR=0000 \END
\TBX03 TEXT=02 LM=0000 RM=2520 CM=FL GUTL=0160 GUTR=0000 \END
\TBX04 TEXT=02 LM=2520 RM=5040 CM=FL GUTL=0160 GUTR=0000 \END
\TBX05 TEXT=01 LM=0000 RM=5040 CM=CE GUTL=0000 GUTR=0000 \END
```

* Table Setup Definition *

```
\TSX1 COMP=LINE ROWDEPTH=VAR LB=0240 LA=0000 RULES=TBLR \END
```

TWO COLUMN TABLE A

Input File

* Two Column Table A *

\PFMT geneva.pfmt \END

\PFMT tbl.pfmt \END

\PFMT tbl2a.pfmt \END

\HD1 CONNECT TIMING\NL^

CALLING PERSON HANGS UP, CALLED PERSON HOLDS

\TS1

\STPSV

#1 3 4

\STPSV

#2 1 2

\STP

5

— CONNECTING AND DISCONNECTING SWITCHES

2

	TIMED DELAY IN DISCONNECTING
	MAIN OFFICE FROM INCOMING CALL
	TO RESTORAL OF CALLED
	LINE TO IDLE STATE

—

1

CONNECTING MAIN OFFICE	
SWITCHING SYSTEM	
No. 1 left switch at junction 1	| 1 to 3 seconds, underground cable
No. 2 left switch at junction 2	| 4 to 7 seconds, underground cable
No. 3 left switch at junction 3	| 8 to 10 seconds, underground cable
No. 4 left switch at junction 1	| 11 to 15 seconds, underground cable
No. 1 center switch at junction 1	| 1 to 3 seconds, underground cable
No. 2 center switch at junction 2	| 4 to 7 seconds, underground cable
No. 3 center switch at junction 3	| 8 to 10 seconds, underground cable
No. 4 center switch at junction 4	| 11 to 15 seconds, underground cable

TWO COLUMN TABLE A

Input File (*Continued*)

No. 1 right switch at junction 1	| 1 to 3 seconds, underground cable
No. 2 right switch at junction 2	| 4 to 7 seconds, underground cable
No. 3 right switch at junction 3	| 8 to 10 seconds, underground cable
No. 4 right switch at junction 4	| 11 to 15 seconds, underground cable

\ETP

\TE

**

**CONNECT TIMING
CALLING PERSON HANGS UP, CALLED PERSON HOLDS**

CONNECTING AND DISCONNECTING SWITCHES	
CONNECTING MAIN OFFICE SWITCHING SYSTEM	TIMED DELAY IN DISCONNECTING MAIN OFFICE FROM INCOMING CALL TO RESTORAL OF CALLED LINE TO IDLE STATE
No. 1 left switch at junction 1	1 to 3 seconds, underground cable
No. 2 left switch at junction 2	4 to 7 seconds, underground cable
No. 3 left switch at junction 3	8 to 10 seconds, underground cable
No. 4 left switch at junction 1	11 to 15 seconds, underground cable
No. 1 center switch at junction 1	1 to 3 seconds, underground cable
No. 2 center switch at junction 2	4 to 7 seconds, underground cable
No. 3 center switch at junction 3	8 to 10 seconds, underground cable
No. 4 center switch at junction 4	11 to 15 seconds, underground cable
No. 1 right switch at junction 1	1 to 3 seconds, underground cable
No. 2 right switch at junction 2	4 to 7 seconds, underground cable
No. 3 right switch at junction 3	8 to 10 seconds, underground cable
No. 4 right switch at junction 4	11 to 15 seconds, underground cable

TWO COLUMN TABLE B

Format File

* Format For Two Column Table w/Centered Head and Footnote *

* Type Face For Footnotes *

\TXT04 STYLE=N HSIZE=0060 VSIZE=0060 LEAD=0070 \END

* Tab Position Definitions *

\TBX01 TEXT=01 LM=0000 RM=2520 CM=CE GUTL=0000 GUTR=0000 \END

\TBX02 TEXT=01 LM=2520 RM=5040 CM=CE GUTL=0000 GUTR=0000 \END

\TBX03 TEXT=02 LM=0000 RM=2520 CM=FL GUTL=0160 GUTR=0000 \END

\TBX04 TEXT=02 LM=2520 RM=5040 CM=FL GUTL=0160 GUTR=0000 \END

\TBX05 TEXT=01 LM=0000 RM=5040 CM=CE GUTL=0000 GUTR=0000 \END

\TBX06 TEXT=04 LM=0000 RM=5040 CM=FL GUTL=0080 GUTR=0000 \END

* Table Setup Definition *

\TSX1 COMP=LINE ROWDEPTH=VAR LB=0240 LA=0000 RULES=TBLR \END

TWO COLUMN TABLE B

Input File

* Two Column Table A *

\PFMT geneva.pfmt \END

\PFMT tbl.pfmt \END

\PFMT tbl2b.pfmt \END

\HD1 CONNECT TIMING\NL^

CALLING PERSON HANGS UP, CALLED PERSON HOLDS

\TS1

\STPSV

#1 3 4

\STPSV

#2 1 2

\STPSV

#3 6

\STP

5

— 2 CONNECTING AND DISCONNECTING SWITCHES

		|TIMED DELAY IN DISCONNECTING
		|MAIN OFFICE FROM INCOMING CALL
		|TO RESTORAL OF CALLED
		|LINE TO IDLE STATE
— 1	CONNECTING MAIN OFFICE	
	SWITCHING SYSTEM	
	No. 1 left switch at junction 1	|1 to 3 seconds, underground cable
	No. 2 left switch at junction 2	|4 to 7 seconds, underground cable
	No. 3 left switch at junction 3	|8 to 10 seconds, underground cable
	No. 4 left switch at junction 1	|11 to 15 seconds, underground cable
	No. 1 center switch at junction 1	|1 to 3 seconds, underground cable
	No. 2 center switch at junction 2	|4 to 7 seconds, underground cable
	No. 3 center switch at junction 3	|8 to 10 seconds, underground cable
	No. 4 center switch at junction 4	|11 to 15 seconds, underground cable

TWO COLUMN TABLE B

Input File (*Continued*)

No. 1 right switch at junction 1	| 1 to 3 seconds, underground cable
No. 2 right switch at junction 2	| 4 to 7 seconds, underground cable
No. 3 right switch at junction 3	| 8 to 10 seconds, underground cable
No. 4 right switch at junction 4	| 11 to 15 seconds, underground cable
3 NOTE: Seconds may vary from 2 to 3 seconds depending on which junction is being used.	

\ETP

\TE

**

**CONNECT TIMING
CALLING PERSON HANGS UP, CALLED PERSON HOLDS**

CONNECTING AND DISCONNECTING SWITCHES	
CONNECTING MAIN OFFICE SWITCHING SYSTEM	TIMED DELAY IN DISCONNECTING MAIN OFFICE FROM INCOMING CALL TO RESTORAL OF CALLED LINE TO IDLE STATE
No. 1 left switch at junction 1	1 to 3 seconds, underground cable
No. 2 left switch at junction 2	4 to 7 seconds, underground cable
No. 3 left switch at junction 3	8 to 10 seconds, underground cable
No. 4 left switch at junction 1	11 to 15 seconds, underground cable
No. 1 center switch at junction 1	1 to 3 seconds, underground cable
No. 2 center switch at junction 2	4 to 7 seconds, underground cable
No. 3 center switch at junction 3	8 to 10 seconds, underground cable
No. 4 center switch at junction 4	11 to 15 seconds, underground cable
No. 1 right switch at junction 1	1 to 3 seconds, underground cable
No. 2 right switch at junction 2	4 to 7 seconds, underground cable
No. 3 right switch at junction 3	8 to 10 seconds, underground cable
No. 4 right switch at junction 4	11 to 15 seconds, underground cable
NOTE: Seconds may vary from 2 to 3 seconds depending on which junction is being used.	