MCS, PowerView, and PowerPro

CG Network Operator's Manual

Part No. 202481-004 **January 1987**

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MCS PowerView 5/10, Series 3.0 Software Release, January 1987
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Introduction

Chapter A: CG Network Concepts

Chapter B: CG Network Setup

Chapter C: Daily Operations

Chapter D: PC on CG Network

Appendix: Installation Instructions for PC on CG Network

Introduction

What Is CG Network?

CG Network is a system that enables up to eight controllers to be connected by a cable. The eight controllers can be any combination of PowerView 5 or PowerView 10 workstations, MCS 10 or MCS 100 controllers, and IBM PCs; the eight controllers can control up to 15 workstations. Being connected by cable, the workstations can share the following capabilities and *resources*:

- Hard and floppy disk drives.
- Output devices, including typesetters and the EP 308 laser printer.
- Background composition of files.
- Translation tables.
- Files.
- Font access.
- Program loading capabilities.

CG Network, then, can be called a *resource-sharing computer network.*

What Is a Resource?

In CG Network terms, a resource is something that one network system has that another network system can also use. For example, the shared disk drives and the shared output device in the above examples can be considered resources.

What Is a Network?

In terms of PowerViews, MCSs, and PCs, a network is an interconnection of up to eight controllers that can share resources, talk to one another, and make requests across the cable. CG Network makes all of your systems more flexible and productive.

What You Will Find Here

This manual is divided into three chapters. They are:

- **CG Network Concepts**. This chapter describes your CG Network. It explains important concepts, describes network components and setup rules, and gives some resource naming conventions. You should read this chapter before continuing with your network setup.
- **CG Network Setup**. This chapter describes the tasks you need to do to complete the setup of your CG Network systems.
- **Daily Operations**. This chapter describes the procedures and functions you use to operate your CG Network PowerViews and MCSs on a daily basis.

Managing Is Important

CG Network is a means of making all of your systems more flexible and productive. One important aspect of a productive network is system planning. As your network is installed, you need to put some thought into its setup.

You can assist in the installation of your network hardware by doing the following:

- Think of *where* you want the pieces of equipment —output devices and systems—placed.
- Consider the *resource names* of each of your network components. The resource name of a component is how you address it when you want to use it during daily operations. The **CG Network Concepts** chapter of this manual explains the naming of your components and the importance of a resource name in getting the most out of your CG Network systems.

A Compugraphic Service Representative will come to install your equipment. Be a participant in locating the hardware and naming the resources. In this way you can become more knowledgeable in managing your network. The information on the following pages can help you.

If You Already Have an MCS or a PowerView

If you have an MCS 10 or 100 or a PowerView 5 or 10, and are familiar with its day-to-day operations, you'll find many similarities between your old and new systems. You may find some differences, too.

Similarities:

These daily operations remain the same:

- Composition and editing of files.
- All file management commands.
- All type commands.
- Queuing to an output device.

Differences:

You'll find a few differences between the daily operation of a stand-alone system and the same system on CG Network. These differences are designed to make your networked systems more flexible. You'll have:

- Extra input and processing capabilities, with up to eight controllers and fifteen workstations on the network.
- More productivity, provided by up to nine public output devices.
- Extra floppy disk storage with possible hard disk storage.
- Added flexibility in copying and moving files from one disk to another—across the network.
- Added flexibility in deleting files from a disk—across the network.
- If there is a hard disk anywhere on the network, you can have automatic font use—all fonts are called from the hard disk with no need for loading dress files.
- If there is a hard disk anywhere on the network, your PowerView(s) can load programs automatically from the hard disk into the controller(s).

If You Have an MCS on the Network

- Read **Chapter A: CG Network Concepts.**
- Follow the setup tasks as they are explained in **Chapter B: System Setup** here, in the MCS *Operator Training Manual,* and in the *MCS 10/100 Series H Software Release Information Manual.*
- For information on operating your CG Network MCS on a daily basis, refer to **Chapter C: Daily Operations** in this manual and to the MCS *Operator Training Manual.*

If You Have an IBM PC on the Network

- Read **Chapter A: CG Network Concepts.**
- Read **Chapter D: PC on CG Network.**
- Some information on operating your CG Network PC on a daily basis may be found in **Chapter C: Daily Operations.**

Words to Use

You will encounter the following terms as you continue reading about and working with CG Network. Become familiar with these terms, but don't feel you have to memorize them. They are used throughout this manual. Refer back to this section as you continue working with CG Network.

attached—a resource that is directly connected to a network controller. A resource can be attached to a controller with a hardware cable or a software program addition. An attached resource can be either public or private to the other systems on the network.

background composition table—the set of commands used by an output device to compose a file when you queue the file to be typeset. These are commands that you don't see, but that are read and composed by the system controller.

Backup and Restore Utility—*(BRU).* A PowerView *utility program* used to copy the entire contents of a PowerView's hard disk onto a streamer tape. This utility also restores the contents of a hard disk from a streamer tape if data on the hard disk is destroyed or damaged.

back-up streamer tape—see also *streamer tape.* A magnetic tape cartridge used to store the entire contents of a PowerView hard disk for back-up purposes. A back-up streamer tape is located in the left side of a PowerView *external data storage device.*

booting the system—also *boot, booting up.* Slang for turning on and programming your typesetting equipment. When you *boot up* a network system, you *load* its program into its controller. When you boot up a computer you are initializing it for use by automatically clearing the memory and loading the first few instructions, which call other instructions, which call other instructions, etc. This is all a computer needs to get itself started.

byte—a memory unit used to represent one character.

cable connector (ed)—male/female plugs necessary for connecting industry-standard cables.

coaxial cable—a transmission line that has an inner conductor and an outer shield conductor. It is popular for local area networks (LANs) and other forms of transmission.

cold start (load)—programming a network system by turning on the power or pressing a reset/load button. A load is *cold* either because there is no program in the controller (upon power up) or because the program in memory is deleted (upon pressing a load/reset button). You can do a cold start load from a hard disk or from floppy disks.

composition table—the set of typesetting commands that a particular output device uses to compose a file. The commands (and the values you can use in the commands) differ, depending upon which output device you are working with. The composition table is broken down into a foreground composition table and a background composition table.

configuration—the way a network system is put together; the arrangement of all of its parts.

controller—also *CPU: Central Processing Unit.* The controller is the brains of a CG Network system—monitoring disks, files, fonts, output device, the keyboard, and the screen. It processes all information going to or coming from these various components. With CG Network, the network controllers are connected to one another and communicate requests back and forth across the network. A network controller is sometimes called a *node* because it is a connecting point in the network.

default—a default is something a network system does on its own without any instructions from you. Defaults are programmed in through the system's user program.

default program—the PowerView program involved in a cold start load from a network hard disk. The default program is either the alphabetically first filename in a *program subindex,* or a program you specify with a keystroke system command. *(An MCS cannot have a default program.)*

Words to Use, *continued*

Disk Format Utility—a PowerView *utility program* which formats disks, copies disks, and copies files.

Disk Recovery Utility—*(DRU)*. An MCS and PowerView *utility program* which repairs disks that have lost data, have "protected" files, or have otherwise become unusable.

ethernet—a local area network (LAN). It is a standard component for such applications as office automation and distributed processing.

extension—a two-letter file code, seen on a disk index, that identifies the file's type. The extension is assigned to the file by the controller when the file is written onto a disk. Common extensions are:

- **TC**—Text Compose—a job file
- **PL**—Program Load—a program filename
- **FA**—Font Attribute—a font width file

external data storage device—a separate component you can attach to a PowerView, containing one or two storage *media*. One external data storage device can hold a 10 megabyte hard disk, a 30 megabyte hard disk, a backup streamer tape, or a combination of two. One PowerView can have two external data storage boxes attached to it.

external hard disk—a PowerView hard disk which is housed in an external data storage device. External hard disks have either a 10- or 30-megabyte capacity and can store files, programs and fonts.

floppy disk—a magnetically coated, thin plastic platter used for storing information.

first hard disk—the hard disk that is physically closest to a PowerView controller. The first hard disk can be either an internal hard disk or an external hard disk. In an external data storage device, the first hard disk is in the right side of the first connected device.

Font Width Utility—(also known as the *Font Attribute Librarian* or *FAL*). An MCS and PowerView *utility program* that transfers font information from a Master Font Width Disk to a User Font Width Disk and makes dress files of fonts stored on a User Font Width Disk. This utility also creates a font inventory file of all fonts stored on a hard disk.

foreground composition table—the set of commands used by an output device to compose a file when you are creating, editing, or composing the text on the screen. These are the commands that you use at the keyboard and see on a workstation's screen.

H1—the CG Network main hard disk. Regardless of how many hard disks you have and to which controller they are attached, you must have one hard disk that has the *network disk drive name* **H1**. **H1** contains all programs and all font widths. It is on **H1** that you perform most CG Network setup tasks.

hard disk—also *rigid disk*. A magnetic platter that stores information. Hard disks usually store much more information than floppy disks and cannot be removed from the cabinet they are housed in. Hard disks can be internal or external.

hardware—the physical components of a computer system: controller, memory, disk drives, screen, etc.

load—to place a program in a network controller's memory. You can load programs from floppy or hard disks.

local—a term that describes the *location* of a CG Network resource. A local resource is directly attached to a particular network controller. To use a local resource, no network operation is required. A local resource may be either *public* or *private* to the network.

local area network—also *LAN*. A system allowing several concentrations of computers and terminals within a local area to share resources such as output devices, disk drives, programs, or files.

Words to Use, *continued*

MB—abbreviation for *megabyte.*

MCS—in this manual, the name *MCS* refers to both the MCS 10 and the MCS 100, unless otherwise noted.

MPD—abbreviation for *Master Program Disk.*

Master Program Disk(s)—Master Program Disks contain information about an option or function a network system can do. You copy the information contained on Master Program Disks onto another disk or disks in order for the information to be used by the system. You do this copying procedure with the *System Generator Utility* program.

media—one of three types of storage components found in a PowerView *external data storage device.* The three types of media you might find there are: a 10 megabyte hard disk, a 30 megabyte hard disk, a back-up streamer tape. One external data storage device can contain a combination of two media.

megabyte—used to mean one million bytes (characters) of information; specifically, one megabyte is 1024 kilobytes, or 1024 × 1024 bytes.

memory—the area that stores information in a computer or typesetting system. Information may be stored permanently or temporarily.

menu—a program-generated series of choices.

network—an interconnection of controllers, used to share output devices, disk drives, files, and certain optional capabilities.

network disk drive name—the name you assign to each disk drive (hard and floppy) on each network system during the *System Generator Utility* procedure. You use the network disk drive names for file management and queuing during your daily CG Network operation. Hard disks may have network disk drive names **H1** to **H9**. Floppy disks may have the names **F1** to **F9**. A disk drive's network disk drive name is the same thing as its *resource name.*

node—a control point or connecting point in a network. See also *controller.*

online load—the opposite of a *cold start load.* On-line program loading loads a program from a hard disk directly into a PowerView controller without the use of floppy disks. During the on-line load, you specify the program name you want to load into the controller with a keystroke system command. *(An MCS cannot do an online load.)*

output device—the hardware component that sets type on a CG Network. CG Network output devices are the 8000, 8200, 8400, and 8600 typesetters, the 9600 Laser Imagesetter, and the EP 308 laser printer.

pathname—the name of a file or program stored in a subindex on a hard disk. A pathname consists of the filename plus the name(s) of any subindex(es) the file is stored under.

peripheral—an auxiliary device, such as a disk drive or output device, that is connected to a network controller.

PowerView—in this manual, the name *PowerView* refers to both the MCS PowerView 5 and the MCS PowerView 10, unless otherwise noted.

primary output device—1) the output device most often used by the network. The primary output device is always public and its resource name is **T1**; 2) the output device that is attached to port A at the back of a controller. Its parameters are used for background composition, including queuing and Background Compose.

private—a term that describes the *accessibility* of a CG Network resource. A private resource can be used only by the controller to which it is directly attached.

Production Control System—the CG Network system (either an MCS or PowerView) that is the focus of all network and production management. If the Production Control System has a hard disk, all font widths and programs for the entire network are stored there. The Production Control System is attached to the *primary output device,* that is, the one that has the resource name **T1**.

Words to Use, *continued*

program subindex—a special subindex that a Compugraphic Service Engineer creates on a PowerView's hard disk when he initializes (formats) it. You store only PowerView user programs and utilities in a program subindex. The first subindex, **LOAD**, is divided into subindexes called **PV10** and **PV05**. When you perform a PowerView on-line program load, you use the program's *pathname*—its filename plus the name of its program subindex. If you select the Remote Load Option for your network MCS, the program subindexes are created automataically on the MCS hard disk.

public—a term that describes the *accessibility* of a CG Network resource. A public resource can be used by all systems on a network; it can be either local or remote.

remote—a term that describes the *location* of a CG Network resource. A remote resource is attached to a system other than the one where you are working. Using a public remote resource requires network operation.

resource—an option or a peripheral on a network system. Resources can be either public or private; local or remote.

resource name—a two-character identifier given to a network resource during the *sysgen* procedure. Examples of resource names are **F1** for the first floppy disk drive, **T3** for an output device, **H5** for a hard disk. In this manual, resource names appear in boldface type.

resource table—a display you can call to the screen at any network workstation. The table displays the workstation's available resources and the proper resource names to use.

rigid disk—another name for a *hard disk*.

satellite system—any network system that is not the Production Control System.

software—instructions and programs that tell a computer what operations to perform.

streamer tape—*streaming*. A streamer tape is a magnetic tape used for backing up a Winchester disk drive system. *Streaming* eliminates the gaps and short-stops between data blocks often produced by other recording methods, thereby speeding data transfer. Streamer tapes are available for use on PowerViews only.

sysgen—see *System Generator Utility*.

system—a controller and the workstation(s) attached to it. A PowerView system is one workstation attached to a controller. An MCS 10 *system* can have up to two workstations attached to a controller. An MCS 100 *system* can have up to eight workstations attached to a controller. Network resources are attached to the system controller and are then available to each system workstation.

System Generator Utility—also *sysgen*. The setup procedure that creates each network controller's user program. The *System Generator Utility* is a program that copies master program information to another disk or disks (floppy or hard). This copied program, called the user program, is loaded into the network controller every time you boot up the network.

user program—an individual network controller's typesetting program. Created through the *sysgen* procedure, a user program is custom-made for that controller's combination of options and resources. You load the user program each time you turn on the controller to do typesetting. The user program can be written onto a hard disk, or onto a set of floppy disks called *UPDs—User Program Disks.*

utility disk drive name(s)—the names by which a network controller recognizes each *local* disk drive when the controller is programmed with a utility program. Utility disk drive names are based on the way the hardware has been installed. A utility disk drive name may or may not be the same as the *network disk drive name* or the *resource name*.

Words to Use, *continued*

utility program—a program that enables a PowerView or MCS to perform functions other than managing files and typesetting. A utility program is designed to carry out specific, vital functions necessary to the operation of the system. Think of them as "housekeeping programs." Some utility programs are:

- the PowerView *Disk Format Utility;*
- the *Font Width Utility* (also known as the *Font Attribute Librarian* or *FAL*);
- the *System Generator Utility (sysgen);*
- the *Disk Recovery Utility* (the *DRU*);
- the PowerView *Backup and Restore Utility* (the *BRU*).

You use the first three utilities to set up your CG Network systems. The *Disk Recovery Utility* is discussed in the PowerView *Setup and Utilities Manual* and the MCS *Operator's Training Manual*. The *Backup and Restore Utility* is discussed in the PowerView *Data Storage Devices Manual.*

Winchester disk—a type of hard disk drive system initially developed by IBM. It has a sealed nonremovable rigid magnetic oxide coated disk. A Winchester disk offers very short access time and high capacity storage as compared with cassette tapes or floppy disk drives.

workstation—A PowerView workstation is the screen/keyboard/controller combination that makes up every PowerView. The workstation is the entire PowerView configuration. An MCS workstation is the screen/keyboard combination that is attached to the system controller. An MCS 10 can have up to two workstations attached to the controller. An MCS 100 can have up to eight workstations attached to the controller.

Chapter A:
CG Network Concepts

CG Network Concepts

These concepts are important for a basic understanding of how CG Network works. The terms and ideas are used throughout this manual.

Resources

A *resource* is a feature or option used by or at a network workstation. Page I-1 of this manual lists the resources that your network systems can share across the network.

Resources are attached to the controller of one system, either physically with a cable or as part of the controller's user program. Since the controller is part of the network, the resources can be available to the other systems as well. For example, in the illustration below, the 8400 typesetter, the floppy disk drives and the hard disks are all considered *resources* of the network.

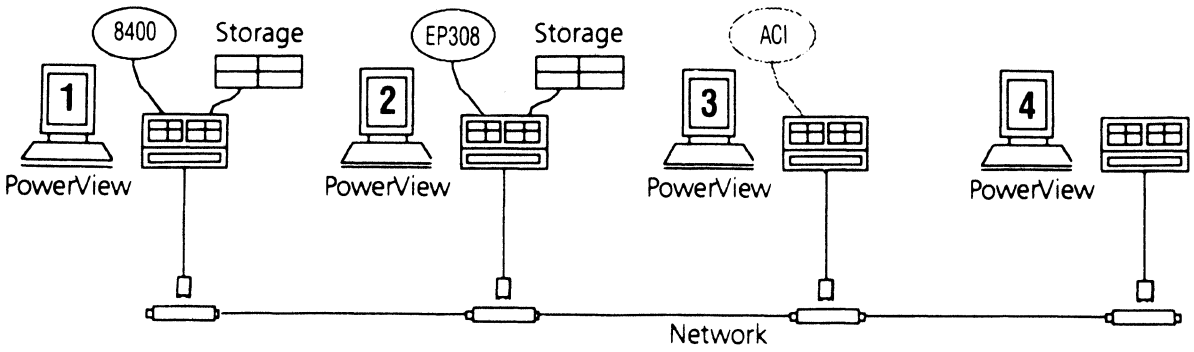
Public vs. Private Resources

Public and *private* are terms that describe how *accessible* a resource is in relation to the network as a whole. When your network is set up, you name your resources and decide whether will be are public or private.

A *public* resource can be used by all of the systems on the network. For example, in the illustrated network below, the 8400 at System 1 (**T1**) is a public output device. All of the systems are able to queue files to this output device.

A *private* resource can be used only by the system to which it is *directly* attached. No other systems on the network can use the resource. For instance, if the writer at System 3 works on confidential material, you can make his PowerView's floppy disk drives *private*. That way, the only operator who can store files on System 3's floppy disk drives is the writer working at System 3.

Later in this chapter, under the heading **Assigning Names and Attachments**, you can read about some rules that govern public and private resources. Right now, begin thinking about which of your CG Network resources you want all systems to use and which you want only one system to use.



Cg Network

Local vs. Remote Resources

Local and *remote* are terms that describe the *location* of a resource in relation to one particular system.

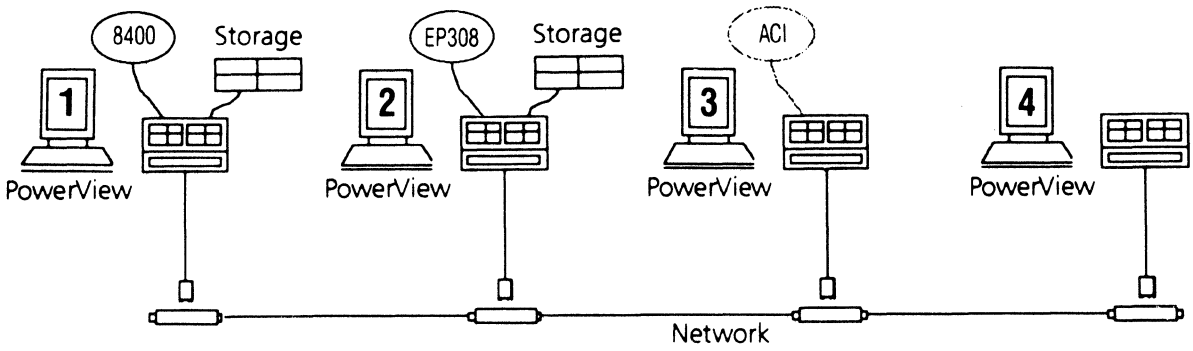
A resource that is *directly attached* to a system is that system's *local* resource. For example, all of the disk drives at System 2 in the illustrated network below are directly attached to that system's controller. Therefore, those disk drives are *local* to System 2.

A *remote* resource is one that is directly attached to another system—*not* the system where you are working. For example, in the illustrated network below, the EP 308 is a *local* resource in relation to System 2. The EP 308 is a *remote* resource in relation to Systems 1, 3, and 4 because it is attached to another controller.

Resource Combinations

CG Network resources can be a combination of public and private, local and remote. The combinations to know for daily operation are:

- *Local-Public*—a resource which is attached to the system where you are working and is available to every other system. For example, the 8400 (**T1**) in the illustrated network is a *Local-Public* resource to System 1 and is available to the entire network.
- *Local-Private*—a resource which is attached to the system where you are working and is available *only* to that system. For example, the left floppy disk drive at System 3 in the illustrated network would be *Local-Private* to System 3 if no other system on the network could use it.
- *Remote-Public*—a resource which is attached to a system other than the system where you are working and is available to every other system. For example, System 1 has hard disks which are public—they are *Remote-Public* resources of System 2.



Cg Network

CG Network Components and Resources

The following pieces of hardware make up the necessary components of CG Network.

Network Workstations: PowerViews, MCSs, IBM PCs

Your systems are the main components of CG Network. An MCS workstation is a keyboard and screen combination that is attached to one controller. The workstation/controller combination is seen as one network *system*. PowerView and PC (Personal Computer) workstations are made up of a keyboard, screen, controller and disk drives. The entire PowerView or PC configuration is also seen as one network *system*.

A CG Network can have as many as *15* workstations connected to eight *controllers* linked together by a cable. You can connect the controllers with a combined cable length of up to 1000 feet. When you set up your network, you decide which controller's resources you want to be public and which you want to be private.

Floppy Disk Drives

PowerView and PC floppy disk drives are part of the controller unit. Each PowerView and PC has one or two floppy disk drives.

MCS floppy disk drives are housed in boxes that are separate from the system controller. Each box can contain two floppy disk drives. One MCS controller can use up to two disk drive boxes, for a maximum of four floppy disk drives available.

One CG Network can have up to nine public floppy disk drives. During system setup, you can participate in deciding which floppy disk drives will be public, and which will be private. You also assign each floppy disk drive a resource name from **F1** through **F9**. During your daily operation, you use a floppy disk drive by addressing it by its particular resource name.

Output Devices

The output devices that a network system can use are the 8000, 8200, 8400, and 8600 typesetters, the 9600 Laser Imagesetter and the EP 308 laser printer. The output devices actually set the type.

You can have up to two output devices attached to every controller on your CG Network—with a maximum of nine public output devices for the entire network. Aside from the maximum of nine public output devices, there is no limit to the combination of types of output devices you can have.

At least one of your network output devices should be public—available to all the systems on the network. The other output devices can be either public or private. The resource names you use for both public and private output devices are **T1** through **T9**.

Optional Network Resources

The following resources are those that you may have purchased for your network systems. You can add these optional resources to your network at any time.

PowerView 10 and MCS Internal Hard Disks

A PowerView 10 *internal* hard disk is housed in the same cabinet as the controller. It takes the place of the second (right) floppy disk drive. A PowerView 10 internal hard disk is always a 10 *megabyte* disk, meaning that it can store about 10 million characters of information. A PowerView 10 with an internal 10 megabyte hard disk can have only one floppy disk drive.

An MCS can have one or two hard disks. They are housed in a component that looks like the controller cabinet. MCS hard disks do *not* take the place of a floppy disk drive. An MCS can use a 10 megabyte or a 30 megabyte disk that is *fixed* (permanent) in the hard disk cabinet, or a 5 megabyte disk that you can remove from the cabinet.

One CG Network can have up to nine public hard disks. During system setup, you can participate in deciding which hard disks will be public, and which will be private. You also assign each hard disk a resource name from **H1** through **H9**. The disk that is named **H1** is always public and always contains font widths.

Note: A PowerView 5 cannot have an internal hard disk.

PowerView External Data Storage Devices

An external data storage device is a separate component that can be attached to any PowerView. It is also called a *box* or an *external device*. Each external data storage device can contain up to two storage media (a *medium* is a type of storage), chosen from these three types:

- A 10 megabyte (MB) hard disk (approximately 10 million characters of storage).
- A 30 megabyte (MB) hard disk (approximately 30 million characters of storage).
- A back-up streamer tape used to store the entire contents of one hard disk.

Storage combinations in an external data storage device can be: a 10 MB disk and a 10 MB disk; a 10 MB disk and a 30 MB disk; a 10 MB disk and a streamer tape; a 30 MB disk and a streamer; a 30 MB disk and a 30 MB disk. *You will never have two streamer tapes in an external data storage device.*

One external data storage device might contain just one of the above media. For example, you might purchase an external data storage device that contains only a 10 MB disk or a back-up streamer tape.

Each PowerView on your network can be connected to two external data storage devices. One PowerView 10 can have a maximum of four hard disks (including internal and external hard disks). A single PowerView 5 can have a maximum of three hard disks (all external).

As you assist in planning your CG Network, you do three things with hard disks:

- Decide which external data storage devices (if you've ordered any) you want to attach to which PowerView.
- Decide which hard disks you want to be public, and which you want to be private.
- Assign each hard disk a resource name from **H1** through **H9**.

Advanced Communications Interface—ACI

The Advanced Communications Interface is a communications option that enables a network system to receive files from or send files to a personal computer, word processor, or mainframe computer. This is usually done through a modem. Files that are sent or received do not tie up the system's workstation(s) for other work you may be doing.

You should locate a system that has ACI near a phone line for a modem hookup.

The Advanced Communications Interface is always a private resource. The resource names used for this option are **RE** for ACI Receive and **SE** for ACI Send.

Multiple Search and Translate—MS&T

Multiple Search and Translate is a CG Network software resource. It comes automatically with ACI, although you can also buy it as a separate option. MS&T is usually used to change computer or word processing codes in a file into codes that a network PowerView or MCS can understand.

Because it is a background software resource, Multiple Search and Translate can be shared by more than one network system. Multiple Search and Translate can be either a public or private resource. The resource name is always **TR.**

Background Compose

Background Compose is another CG Network software resource. It comes as part of the Power Page Option and cannot be purchased separately. Background Compose enables files to be composed without tying up the system's workstation(s) for other work (that is what is meant by *background*). This capability is usually used with Power Page to break long text files into document pages.

Background Compose can be either a public or a private resource. The resource names for this option are **B1** through **B9**.

Assigning Names and Attachments

As part of the Setup Tasks that are presented in the next chapter of this manual, you assign names to network resources. You use these resource names to address your available network resources.

The names you assign now can be changed later after you are more familiar with CG Network. You should not, however, go through the Setup Tasks with the idea that the network you are creating is only temporary. Plan your system carefully now, and you may not have to complete the Setup Tasks a second time.

There are a few important rules to remember when you name resources.

- If you want to make two of the same type of resource public, do *not* give them the same resource name. For example, if you give hard disks attached to two separate controllers the resource name **H2**, each hard disk would be available only to the system to which it is directly attached.
- If you want to make one of the same type of resource public and another one private, do not give the resources the same resource name. If you do, the system that has the private resource attached to its controller will never be able to access the public resource.
- If you want to make two of the same type of resource private, you *can* give both of the resources the same resource name.

All CG Network systems have the following basic requirements:

- The most important system is System 1. System 1 is called the *Production Control System.*
- The Production Control System is always attached to your primary output device (**T1**).
- If there is one hard disk on the network, it should be attached to the Production Control System's controller. The hard disk is called **H1**. It is public and stores all font width information.
- If the Production Control System is a PowerView, the PowerView *cannot* have the Advanced Communications Interface (ACI) option as part of its user program.
- A system must be within 50 feet of an output device to which it is directly attached.

Hardware connections are made by the Compugraphic Service Engineer according to your specifications. Working with the Service Engineer, you should make several decisions:

- Where will each network system be located?
- Which room will hold the output device(s)?
- Which network controller will have an output device attached to it?
- Which PowerViews will have external data storage device(s) attached to them?

When you create the user program for each CG Network controller, you:

- Determine your software attachments (which options are included in which system's user program).
- Name the controller's resources.
- Determine which local resources will be public or private.

Things to Think About

- Find out how much equipment has been ordered and what kind of hardware you will have.
- Think about physical locations—which rooms (or offices) will hold what equipment.
- Think about who needs a workstation—for example: editors, writers, proofreaders.
- Think about office space and keyboard availability.

CG Network Review

Before continuing with your CG Network setup tasks, be sure you understand the following network concepts and terms:

- Local and remote.
- Public and private.
- Resource names.
- Network vs. utility disk drive names.
- Production Control System.
- Satellite system.
- Primary output device.
- *System Generator Utility* and user program.

These concepts were explained in the **Words to Use** section of the **Introduction**, and in this **CG Network Concepts** chapter. If you haven't done so already, read through the words and this chapter for a better understanding of your network. Then proceed to the next chapter, **CG Network Setup.**

Using the Next Chapter

This chapter of the *CG Network Manual* has introduced you to network concepts. Now you can start setting up your system, according to the tasks listed in the next chapter, **CG Network Setup.** A Compugraphic Service Representative will assist you as you plan and set up your CG Network.

Chapter B:
CG Network Setup

CG Network Setup

This chapter covers the setup tasks for your CG Network PowerViews and MCSs. Before you begin these procedures, you should have certain items.

Hardware

In addition to the workstations and output device(s) on your network, you should be sure the following items have been installed and/or connected by a Compugraphic Service Engineer:

- ESM boards inside the network controllers.
- Coaxial cable(s) up to 1000 feet to connect the controllers.
- A transceiver at each controller to send and receive messages across the network.
- Any PowerView external data storage devices purchased.
- The Advanced Communications Interface (ACI), if purchased, near a telephone hookup.

Software

Certain program disks come with CG Network. If you have both MCSs and PowerViews on your network, be sure to have the appropriate program disks for each type of controller. You should have:

- The PowerView *Disk Format Utility* program disk.
- Blank, dual-sided floppy disks for your PowerViews' user programs and job disks. You may also want to use some single-sided text disks to use in any MCSs on the network.
- The PowerView *Font Width Utility* program disk (the *FAL*).
- Master Font Width Disks purchased from Compugraphic containing font width information.
- The *System Generator Utility* (*sysgen*) program disks for both MCS and PowerView systems.
- Master Program Disks (MPDs), purchased from Compugraphic, for both MCS and PowerView systems.

Setup for Network with a Hard Disk on a PowerView

Perform the setup tasks on the following pages *if the only hard disk on your CG Network is on a PowerView.* That PowerView hard disk can be either an internal or an external hard disk, but it will have the resource name **H1**. It should be on the PowerView that is called the Production Control System. This PowerView should also have the primary output device (the one with the resource name **T1**) attached to its controller. You complete most of these setup tasks while sitting at the Production Control System.

► If the only hard disk on your CG Network is on an MCS, go now to the **Setup for Hard Disk on a Network MCS** chapter of this manual.

► If your CG Network has *no* hard disks on either a PowerView or an MCS, go now to the **Setup for Floppy Disk Network** section of this chapter.

Hard Disk PowerView Setup Goals

The setup tasks on the next pages take you through the final steps of getting your network up and running. Your overall goal in setting up your CG Network systems is to have a network with these features:

- Fonts stored on the Production Control System's hard disk **H1**. You accomplish this by transferring the fonts from Master Font Width Disks to a floppy User Font Width Disk and then copying the user font disk to **H1**.
- User programs (copied from UPDs) for all network PowerViews stored on the Production Control System's hard disk **H1**.
- Default programs established for each of your network PowerViews. A default program loads automatically when a PowerView is turned on or reset.
- An MCS user program created, *if you have an MCS on your network.*
- Back-up copies of user programs and User Font Width Disk for each network system.

Tasks for Network Setup

It is recommended that you follow the tasks in this section *exactly* in setting up your CG Network. Each task is explained on the following pages.

Task One: Format PowerView disks

In this task, you format floppy disks to serve as:

- Back-up User Program Disks.
- A back-up User Font Width Disk.
- Job disks.

Task Two: Create a PowerView User Font Width Disk

In this task, you transfer font width information from your Master Font Width Disks to a floppy disk. This *User Font Width Disk* should be kept in a safe place as a back-up for your hard disk.

Note: Even if you have a User Font Width Disk for a network MCS, you should recreate the disk for use on the network PowerViews. The new disk will contain *font attribute* information—characteristics that enable the PowerView's view window to display your fonts in a representative style. You can use these font widths in the MCS.

Task Three: Copy PowerView font disk onto H1

In this task, you transfer the fonts on the User Font Width Disk to the Production Control System's hard disk **H1** under the subindex name **font**. Once you do this, fonts will load automatically into each network controller (PowerView *and* MCS) during composition. The User Font Width Disk then serves as a back up for fonts stored on the hard disk.

Task Four: Create Production Control System user program on H1

In this task, you create an operating program for the Production Control System. You create this *user program* directly on the hard disk **H1**.

Task Five: Create each PowerView's user program on floppy disks

Even though you have already created a Production Control System user program on **H1**, it is important to create another Production Control System program on floppy disks. Then you create all satellite PowerViews' user programs on floppy disks. You can use each of these programs as back ups for the hard disk or as an alternate way of loading each PowerView.

Task Six: Copy user programs for satellite PowerViews onto H1

In this task, you copy the satellite PowerViews' user programs that you created in Task Five onto the Production Control System's hard disk **H1**. The procedure requires three steps:

- Load the Production Control System's user program from floppy disks.
- Find the filename of each user program file.
- Copy the program files onto **H1** with the user program's **Copy File** function.

Task Seven: Copy PowerView utility programs onto H1

You should store your PowerView utility programs on the Production Control System's hard disk **H1**. Loading a utility program is then faster and easier. You can store the utility program disks in a safe place.

Task Eight: Establish Production Control System default program

This task ensures that the correct program will load from **H1** into your Production Control System when you turn on or reset the controller.

Task Nine: Establish default programs for satellite PowerViews

This task ensures that the correct program will load from the Production Control System's hard disk **H1** into each satellite PowerView when you turn on or reset those controllers.

Task Ten: Create a font inventory file

(optional)

A font inventory file lists all fonts stored on **H1**. After it is typeset, it is a valuable source of information for each of your systems. This is an optional task. You can find information and instructions for this task in the ***Font Width Utility*: Other Functions** chapter of the PowerView *Setup and Utilities Manual*, under the heading **Function 5—Create Font Inventory File.**

Task Eleven: Create MCS User Program Disks

(if MCS is on network)

In this task, you create a new MCS user program with the MCS *System Generator Utility* and MCS Master Program Disks. For instructions and new *sysgen* questions, see the *MCS 10/100 Series H Software Release Information Manual*. If you do not have an MCS on your CG Network, skip this task.

IMPORTANT:

- Follow each of these network setup tasks in the exact order given.
- Use other manuals when requested. They are your best guides to setting up your network systems.
- You complete almost all of these setup tasks at the PowerView Production Control System. The only exceptions are establishing the satellite PowerViews' default programs (Task Nine), and creating the MCS user program (Task Eleven).
- During these setup tasks, you use the Production Control System's *utility disk drive names*. When any PowerView is programmed with a utility, the utility program recognizes the left floppy disk drive as **F1**; the right floppy disk drive as **F2**; and the first hard disk (internal or external) as **H1**.
- ***Do not perform these tasks if the only hard disk on the network is on an MCS.*** The steps for setting up a hard disk MCS CG Network begin on page B-14 of this manual.
- ***Do not perform these tasks if there are no hard disks anywhere on the network.*** The steps for setting up a floppy-disk-based CG Network begin on page B-24 of this manual.

Task One: Format Disks

The *Disk Format Utility* is one of three utility programs you use to set up your CG Network PowerViews. The other two utility programs you use are the *Font Width Utility* and the *System Generator Utility.*

The PowerView *Disk Format Utility* formats blank disks, reformats already-formatted disks, copies entire disks, and copies individual files.

Formatting a disk prepares it to receive information. Until you have properly formatted disks, you cannot build a user program, create User Font Width Disks, or typeset jobs. A PowerView uses:

- **Dual-Sided Program Disks**
  Dual-sided program disks store the user program for each of your CG Network PowerViews. You can use these disks as a back up to the user programs stored on your Production Control System's hard disk.
- **Dual-Sided Text Disks**
  Dual-sided text disks store jobs and font width information. They hold twice as much as regular single-sided disks used on other MCS products, such as the MCS 10 or MCS 100 you may have on your network. These double-sided text disks, along with any hard disks on the network, can store the jobs you create at your PowerViews.
- **Single-Sided Text Disks**
  You can also use single-sided text disks to store your jobs and font width information. If you have an MCS on the network, you may want to use this type of disk since it is compatible with the rest of the MCS product line. Jobs stored on single-sided text disks can be displayed and typeset from any MCS or PowerView.

You need:

- **Three dual-sided program disks per network PowerView** to make User Program Disks for each of those systems.
- **At least two dual-sided text disks**, one to make a User Font Width Disk; one to store jobs on.

You may want:

- **Some single-sided text disks** for files, if you have an MCS on your network—MCS 10s and 100s can use *only* single-sided disks.

How To Format Disks

For complete instructions on how to format floppy disks to use in your CG Network PowerViews, go to the PowerView *Setup and Utilities Manual,* under the heading **Task One: Format Floppy Disks.**

When you format a floppy disk, you assign that disk a name. For your network PowerViews' User Program Disks (UPDs), you should assign a disk name that tells you what is on the disk. The program disks should be named something like this:

- For your Production Control System, name your User Program Disks *sys1-1, sys1-2, sys1-3*. This lets you know the disks are for System 1, and represent the different volumes of the program.
- For your other PowerViews, name the disks according to system number and disk number, for example, *sys2-1, sys2-2, sys3-1, sys3-2*.

Task Two: Create a PowerView User Font Width Disk

All font widths are stored on Master Font Width Disks that you purchase from Compugraphic. In this task, you transfer the information on each of these disks to a User Font Width Disk (UFWD) with the *Font Width Utility*. In Task Three, you copy the information on your User Font Width Disk to the Production Control System's hard disk **H1**.

Once you store font information on **H1**, font widths load automatically into each network controller during file composition. Each font is known by its User Font Identification (UFID) number. Without font width information, network systems don't know how much room to allow for each character, and a PowerView doesn't know how to represent the character in the view window.

There are three steps to building a User Font Width Disk:

- **Organize fonts by establishing UFIDs.**
  You assign each font an identification number so you can tell the controller which font to use. You decide what number will represent each of your fonts.
- **Select fonts from a Master Font Width Disk and copy each font and UFID number into controller memory.**
  You received your fonts on one or more Master Font Width Disk(s). You copy font widths from the master disks and assign each font a UFID number. Controller memory is a temporary holding area for this information.
- **Transfer fonts and their UFIDs from controller memory to a UFWD.**
  This disk is your permanent copy of the fonts and their UFID numbers. The UFWD must be formatted as a single- or dual-sided text-formatted disk. This original User Font Width Disk can also serve as a back-up font disk should anything happen to the Production Control System's hard disk.

For complete information on creating a User Font Width Disk, go to the **Task Two: Creating a User Font Width Disk** section of the PowerView *Setup and Utilities Manual*. Begin with the heading **What to Do.** Because your fonts are going to be stored on **H1** eventually, you *do not* have to create dress files.

Once you have transferred all of your fonts to a User Font Width Disk, come back to this manual and continue with Task Three.

IMPORTANT:

- If one of your network output devices is an MCS "diskless" 8000 typesetter, refer to the *MCS 8000 Addendum* for instructions to set up fonts for it.
- Even if there is an MCS on your network, and you already have an MCS User Font Width Disk, you should take the time to complete this task. When you create a *PowerView* User Font Width Disk, you assign font attributes to your typefaces. These attributes enable a PowerView view window to display a representation of your fonts. You do not have font attribute information on your MCS User Font Width Disk.

Task Three: Copy PowerView Font Disk to H1

After you transfer all of your font widths to your User Font Width Disk, you need to copy the UFWD to your Production Control System's hard disk **H1**.

Copying the fonts to the hard disk provides all of your network systems with automatic font loading from **H1** when you create and typeset files. The User Font Width Disk you created in Task Two can serve as a back-up disk if the Production Control System's hard disk is unavailable.

To copy the User Font Width Disk onto **H1**, you reprogram the Production Control System with the *Disk Format Utility* program and use the **Copy Disk** function. For complete instructions on how to copy a disk with the *Disk Format Utility*, go to the ***Disk Format Utility*: Other Functions** section of the PowerView *Setup and Utilities Manual*.

To copy the font disk to H1:

When you fill in the *Copy Disk Program* menu:

- The **Master** disk drive (**D:**) should be **F1**. (This is the utility disk drive name you are copying *from*, and where the User Font Width Disk should be.)
- The **Copy** disk drive (**D:**) is **H1**.
- In the line next to the **Copy** disk drive field, type the word **f o n t**. This is the name of the subindex where you are going to copy the fonts.

When you copy the User Font Width Disk onto the hard disk, you copy it into a subindex called **font**. That subindex name probably does not exist on the PowerView hard disk at this time. If it doesn't exist, this message appears at the bottom of the screen:

Subindex does not exist.
Do you wish to create it? Y or N

Answer Yes to this question by typing **y** and pressing EXECUTE.

Task Four: Create Production Control System's User Program on H1

A PowerView cannot work until you *program* it, that is, give it instructions by loading its user program or a utility program. The user program is your basic typesetting program. It tells the PowerView how to display text and interpret typesetting commands.

On CG Network, a PowerView's user program also gives the PowerView its ability to use remote-public resources and to recognize different output devices. You need to load the user program into the PowerView each time you turn it on or reprogram it after using a utility.

Each network PowerView's user program is based on the PowerView's combination of resources and the names of those resources. You build the user program by using *Master Program Disks* (MPDs) and the *System Generator Utility (sysgen)*. If you store the user program on floppy disks, the disks are called *User Program Disks* (UPDs). When you create the Production Control System's user program directly on the hard disk, the information from the MPDs is copied onto the hard disk.

You store each PowerView's user program on floppy disks and on the Production Control System's hard disk **H1**. In this task, you create the Production Control System's user program directly on **H1**, in the PowerView's program subindex.

What you need to build the Production Control System's user program on H1:

- The Master Program Disks you purchased.
- The PowerView *System Generator Utility* program.
- The PowerView *System Generator Utility Handbook*.

In this task, the user program is built in three steps:

1. **Loading the *sysgen* program.**
   To build a user program, you need to reprogram the Production Control System with the *System Generator Utility* program. This program is called *sysgen* for short.
2. **Answering questions about the program.**
   You answer a series of questions on the screen about the options and resources on the Production Control System. You also assign names to some network resources. Type in your answers to the questions at the PowerView keyboard—the answers build the basic outline of the program.
3. **Copying information from the Master Program Disks (MPDs) to the hard disk.**
   After you have finished answering all the questions, a screen message requests, by name, the Master Program Disk that contains each option you have specified. When requested, insert each Master Program Disk into the disk drive. By copying the information from the MPD to the hard disk, *sysgen* builds your user program.

For step-by-step instructions, a complete list of *sysgen* questions, and explanations of the questions, consult the PowerView *System Generator Utility Handbook.* Follow the instructions for **Building the User Program on the Hard Disk**.

Hint:

- Before you go on to the *System Generator Utility Handbook,* make a list of all your options and resources. Then, when the *sysgen* asks if you have an option, you can refer quickly to your list and respond accurately.
  - ► See your order form to find out which options you should have.
  - ► Check the MPDs that came with your system.

Task Five: Create Each PowerView's User Program on Floppy Disks

Now that you have stored your Production Control System's user program on **H1**, you need to:

- **Create a Production Control System user program on floppy disks.**
  This program is identical to the Production Control System program already on **H1**. Its purpose is to serve as a back-up program that you can use to boot the Production Control System from floppy disks in the event of a hard disk failure.
- **Create floppy-disk user programs for all other network PowerViews.**
  You copy these user programs to **H1** in Task Six. You can use the floppy-disk user programs to boot the satellite PowerViews if the Production Control System is turned off for any reason.

To re-create the Production Control System's user program on floppy disks:

1. Place next to you three floppy disks that you formatted as dual-sided program disks. They should be labeled *Volume1, Volume2* and *Volume3,* or something similar. You should also identify them with the Production Control System's program name *sys1* .
2. If you completed Task Four successfully, the *System Generator Utility* should still be loaded in the Production Control System. The Production Control System displays this message:

   Please place base1 MPD in F1 and hit EXECUTE

3. Place the base1 disk for your type of PowerView in the Production Control System's left floppy disk drive and press EXECUTE.
4. Wait for the first *sysgen* question to appear on the screen and then answer the *sysgen* questions exactly as you answered them in Task Four. There are two exceptions:

?? What is sysgen output disk drive?
?? (F1, F2 or H1; default F2)

This question asks, "Where will you be placing your floppy UPDs?" If the Production Control System has one floppy disk drive, type **f 1** and press EXECUTE. If it has two floppy disk drives, take the default answer, **F2**.

?? Enter program file name.
?? (1-10 characters; default POWERVIEW)

The name of this program should be **sys1** .

5. After you have answered the *sysgen* questions, follow the instructions in the PowerView *System Generator Utility Handbook* for **Building the User Program on Floppy Disks.**

Building the Satellite PowerViews' User Programs

After you build your Production Control System's user program on floppy disks, you need to create the other network PowerViews' user programs on floppy disks. You create these user programs at the Production Control System using the *System Generator Utility* that is loaded there already.

In Task Six you copy the programs you create here onto the Production Control System's hard disk **H1**.

To build the satellite PowerViews' user programs on floppy disks:

1. One at a time, use the sets of dual-sided program disks labeled *Volume1, Volume2* and *Volume3*. You should also identify them with the program names *sys2, sys3,* etc.
2. Following the instructions on the screen, place your base1 Master Program Disk in the Production Control System's left floppy disk drive and press EXECUTE.
3. Answer the *sysgen* questions as they appear on the screen. Keep in mind the PowerView for which you are creating the program, and what that PowerView's resources are. Having this information written down for each PowerView would be very helpful.
4. When you have finished answering the questions, follow the instructions on the screen to insert Master and User Program Disks. If necessary, follow the specific instructions in the PowerView *System Generator Utility Handbook,* under the heading **Building the User Program on Floppy Disks.**

When you have created each satellite PowerView's user program on floppy disks, proceed to the next section, **Task Six: Copy Satellite PowerViews' User Programs onto H1.**

Task Six: Copy Satellite PowerViews' User Programs onto H1

You have just created your satellite PowerViews' user programs on floppy disks. Now, copy those user program *files* to the hard disk, **H1**.

Copying the user program files onto **H1** requires that you load the user program into the Production Control System. Using the **Copy File** function that is part of the user program, copy the PowerViews' user program *files* onto **H1** under a program subindex name created especially for your type of PowerView. (For more information on program subindexes, see the **Cold Start Loading** section of **Chapter C: Daily Operations** in this manual.)

- ► If the user program is for a **PowerView 10**, the program subindex name is **LOAD PV10**.
- ► If the user program is for a **PowerView 5**, the program subindex name is **LOAD PV05**.

(For more information on copying files, consult the PowerView *File Management and Typesetting Operator's Manual,* Chapter 22.)

Note: If the Production Control System's hard disk **H1** is an external hard disk, be sure to turn on the external data storage device before copying any information onto it. *Always* turn on any external data storage devices *before* turning on your network PowerViews.

Copying a User Program by Filename

To copy a user program file with the **Copy File** function, you need two things: the name of the user program file and its *extension*.

A file *extension* is a two-letter code that identifies the file's type. A system assigns an extension to any file when you write the file onto a disk.

You can see a file's extension on the disk index. The most common extension is **TC** (*Text Compose*), meaning a job file that you can call, edit, queue, etc. The user program files you copy in this task have the extension **PL** (*Program Load*).

There are four steps to copying a user program file onto **H1** using the **Copy File** function. The steps listed here have specific instructions outlined in other locations. The steps are:

1. Load the Production Control System's user program into its controller. Use the floppy program disks you created in Task Five. (Consult the **Daily Operations** chapter of this manual or page B-11. It is not necessary to load fonts at this time.)
2. Display the disk index of one of your network PowerView's User Program Disks. (Consult the **Displays** chapter of the PowerView *File Management and Typesetting Operator's Manual.*)
3. Look for the filename with a **PL** extension. This is the user program file you need to copy onto **H1**.
4. Using the **Copy File** function, copy the user program filename from the floppy disk to the hard disk **H1**.
   - The **Source** disk drive (**D:**) is the resource name of the Production Control System's left floppy disk drive. (This is the disk drive you are copying *from* and where the User Program Disks should be.)
   - **N:** is the filename of the user program file on the UPD in the drive; for example **sta1-3**.
   - The extension (**Ext:**) of the file should be **PL**.
   - The **Destination** disk drive (**D:**) is **H1**.
   - The second filename (**N:**) should be the same as the original filename. However, you need to type the program subindex name for the type of PowerView the user program is for—**LOAD PV10** *or* **LOAD PV05**—*before* you type the user program filename.
5. Repeat steps **2** through **4** for every PowerView User Program Disk.

When you have copied all of the user program files onto **H1**, proceed to the next section, **Task Seven: Copy PowerView Utility Programs onto H1**.

Task Seven: Copy PowerView Utility Programs onto H1

Just as you copied your PowerViews' user programs onto **H1**, you should copy all of your PowerView utility programs onto the hard disk. In this way, you can load the utility programs directly from the hard disk.

You benefit by needing fewer floppy disks—and gain the safety of having the original utility program disks put away in a secure place. If you have a PowerView 5, this also means you will be turning that system off and on less frequently.

Just as with copying the user programs in the previous task, copying the utility programs onto **H1** requires that the Production Control System be programmed with its user program. This user program should still be in the Production Control System's memory from the previous task. You also copy the utility programs onto **H1** under the program subindex for each type of PowerView on the network.

Follow these similar instructions to copy the PowerView utility program files onto **H1**:

1. The user program should still be loaded in the Production Control System.
2. Display the disk index of one of your network PowerView's utility program disks. These programs include the *Disk Format Utility*, the *Font Width Utility*, the *System Generator Utility*, the *Disk Recovery Utility*, and possibly the *Backup and Restore Utility*. (Consult the **Displays** chapter of the PowerView *File Management and Typesetting Operator's Manual*.)
3. Look for the filename with a **PL** extension. This is the utility program file you need to copy onto **H1**.
4. Using the **Copy File** function, copy the utility program filename from the floppy disk to the hard disk **H1**.
   - The **Source** disk drive (**D:**) is the resource name of the Production Control System's left floppy disk drive. (This is the disk drive you are copying *from* and where the utility program disks should be.)
   - **N:** is the filename of the utility program file on the UPD in the drive; for example **dskutl**.
   - The extension (**Ext:**) of the file should be **PL**.
   - The **Destination** disk drive (**D:**) is **H1**.
   - The second filename (**N:**) should be the same as the original filename. However, you need to type the program subindex name for the type of PowerView the utility program is for—**LOAD PV10** *or* **LOAD PV05**—*before* you type the utility program filename.
5. Repeat steps **2** through **4** for every PowerView utility program disk.

When you have copied all of the utility program files onto **H1** under your program subindex(es), proceed to the next section, **Task Eight: Establish Default Program for Production Control System.**

Task Eight: Establish Default Program for the Production Control System

After you have stored all of your network PowerViews' user and utility programs on **H1**, your next task is to establish a *default program* for the Production Control System. A default program is the one that loads into the Production Control System automatically when you turn on or reset the controller.

If you follow these instructions exactly, the correct user program will load into the Production Control System each time you turn it on. There are two procedures to follow to establish a default program for the Production Control System:

- First, load the Production Control System's floppy UPDs into the controller.
- Then perform *on-line program loading* to establish a default loading program.

To load the Production Control System's user program:

1. ► If the Production Control System is a **PowerView 10**, first make sure the controller's power is on. Insert the UPD labeled *Volume1* into the Production Control System's left floppy disk drive and press the reset button on the front of the controller. (Be sure you are using the correct set of User Program Disks.)

   ► If the Production Control System is a **PowerView 5**, turn on the workstation and insert the UPD labeled *Volume1* into the workstation's left floppy disk drive. (Be sure you are using the correct set of User Program Disks.)

   If your PowerView 5 Production Control System is on, turn it off and wait at least 10 seconds. Turn it on again, and insert the UPD labeled *Volume1* into the left floppy disk drive.

2. The machine diagnostics logo and a sketch of the PowerView appear on the screen. After a few seconds, the message **Loading Volume 1** appears.
3. After a short wait, the message **Insert Volume 2 and Hit EXECUTE** appears.
4. Remove the UPD labeled *Volume1* and insert the UPD labeled *Volume2*. Press EXECUTE.
5. The message **Loading Volume 2** appears on the screen.
6. If you have three User Program Disks, a message to load Volume 3 appears. Remove the disk labeled *Volume2*, insert the disk labeled *Volume3*, and press EXECUTE.
7. When the last UPD has been stored in the Production Control System's memory, the message **Program Load Completed** appears.
8. The sketch and message disappear. Three status lines and a timestamp appear at the bottom of the screen:

   ```
   Series X.X
   Enter Time  mo-da-yr  -  -      hr:mn  :
         SF:100%
   ```

9. Fill in the timestamp and press EXECUTE. Remember to use 24-hour clock time and leading zeros.
10. The lowest font number stored on the Production Control System's hard disk **H1** loads automatically. The default parameters appear on the second status line.
11. The Production Control System's user program is now loaded. Remove the last User Program Disk and store all UPDs in a safe place.

    ► **Go to the next part of this task immediately.**

To establish a default program for the Production Control System:

1. Press SYS CMD and type **l o a d**.

   Your top status line should look like this:

   ```
   SYS:LOAD   D:H1 N:LOAD PV10          CD:N
   ```

2. The top status line defaults to the subindex name for the type of PowerView that is establishing the default program. Your status line may show **LOAD PV05**. Make sure that **H1** is in the disk drive field.

3. Type the name of the Production Control System's program *after* the subindex name. (If you followed the instructions in Task Five, the name is **sys1**.)

   Your top status line should then look something like this:

   SYS:LOAD D:H1 N:LOAD PV10 sys1 CD:N

4. Press the cursor right key (→ on the left-hand keypad). The cursor should jump to the **CD:** field, which stands for *Change Default*. The letter **N** indicates *No*. The letter **Y** indicates *Yes*.

   Your top status line should now look something like this:

   SYS:LOAD D:H1 N:LOAD PV10 sys1 CD:N

5. Because you want to change the default program at this time, type **y** and press EXECUTE. Before you press EXECUTE, your top status line looks something like this:

   SYS:LOAD D:H1 N:LOAD PV10 sys1 CD:Y

   The screen goes blank and the user program once again loads into the Production Control System's controller. This time, the PowerView does *not* go through the machine diagnostics.

6. When the timestamp appears on the screen again, fill it in and press EXECUTE. You have successfully loaded the Production Control System's default program.

After you have followed these steps, the program called **sys1** will load into the Production Control System automatically each time you turn it on or reset it.

► **Leave the Production Control System on and proceed to Task Nine.**

Task Nine: Establish Default Programs for Satellite PowerViews

With the satellite PowerViews' user programs stored on the Production Control System's hard disk **H1**, you need to establish a *default program* for each satellite PowerView. These default programs load automatically into each PowerView every time you turn it on.

Designating a default program ensures that the correct program loads into each satellite PowerView when you turn it on or reset it. The more satellite PowerViews you have on your CG Network, the more important it is to establish default programs for them.

There are two procedures to follow to establish the default program for a satellite PowerView:

- First, load the PowerView's floppy User Program Disks into its controller.
- Then perform *on-line program loading* to establish a default loading program.

Perform this task once at each satellite PowerView. You go from PowerView to PowerView, following the steps on the next two pages for each satellite PowerView on your CG Network.

To load a satellite PowerView's user program:

1. Make sure the Production Control System is *on* and loaded with its user program.

2. Turn on one of your satellite PowerViews.

3. Insert *Volume1* of the PowerView's User Program Disks into the left floppy disk drive.

4. Beginning with step **2** on page B-11, load the user program from floppy disks. Be sure you use the correct set of User Program Disks for the PowerView. Check the disk labels to be sure.

5. After you fill in the timestamp and press EXECUTE, the lowest font number stored on **H1** loads automatically. The default parameters appear on the second status line.

   ► **Go to the next part of this task immediately.**

To establish a default program for a satellite PowerView:

1. Press SYS CMD and type **l o a d**.

   Your top status line should look something like this:

   SYS:LOAD D:H1 N:LOAD PV10 ▌ CD:N

2. The top status line defaults to the subindex name for the type of PowerView loading the program. Your status line may show **LOAD PV05**. Make sure that H1 is in the disk drive field.

3. Type the name of this satellite PowerView's user program *after* the subindex name. (If you followed the instructions in Task Five, the names are **sys2, sys3**, etc.)

   Your top status line should then look something like this:

   SYS:LOAD D:H1 N:LOAD PV10 sys2▌ CD:N

4. Press the cursor right key (→ on the left-hand keypad). The cursor should jump to the **CD:** field, which stands for *Change Default*. The letter **N** indicates *No*. The letter **Y** indicates *Yes*.

   Your top status line should now look something like this:

   SYS:LOAD D:H1 N:LOAD PV10 sys2 CD:N

5. Because you want to change the default program at this time, type **y** and press EXECUTE. Before you press EXECUTE, your top status line looks something like this:

   SYS:LOAD D:H1 N:LOAD PV10 sys2 CD:Y

   The screen goes blank goes blank and the user program once again loads into the satellite PowerView's controller. This time, the PowerView does *not* go through the machine diagnostics.

6. When the timestamp appears on the screen again, fill it in and press EXECUTE. You have successfully loaded the satellite PowerView's default program.

After you follow these steps for each one of your satellite PowerViews, the programs called **sys2, sys3,** etc., will load into the appropriate PowerView each time you turn it on or reset it. This *remote program loading* works only as long as the Production Control System is on and programmed.

For more information on CG Network program loading, see the **Program Loading** section of **Chapter C: Daily Operations** in this manual.

Task Eleven: Create Network MCS User Program

If an MCS is part of your CG Network, you need to create a new set of User Program Disks to include the network. For background information on creating a user program with the MCS *System Generator Utility*, refer to the **System Setup** chapter of the MCS *Operator Training Manual*. For more information and a complete list of new *sysgen* questions, go to the *MCS 10/100 Series H Software Release Information Manual.*

► If the MCS on your network has a hard disk, your setup tasks begin on the next page.

The Next Step

This concludes basic system setup for a CG Network that has a hard disk on a PowerView. For procedures on system startup and other daily operations, go to **Chapter C: Daily Operations**. To learn how to use your systems for typesetting, consult the PowerView *File Management and Typesetting Operator's Manual* and the MCS *Operator Training Manual.*

Setup for Network with a Hard Disk on an MCS

Perform the setup tasks on the following pages *if the only hard disk on your CG Network is on an MCS.* The hard disk will have the resource name **H1**. The MCS with the hard disk should also have the primary output device (the one with the resource name **T1**) attached to its controller. This system is called the Production Control System. You complete some of the following setup tasks while sitting at the MCS. You complete others while sitting at a network PowerView.

► If the only hard disk on your CG Network is on a PowerView, go now to the **Setup for Network with a Hard Disk on a PowerView** section of this chapter.

► If your CG Network has *no* hard disks on either a PowerView or an MCS, go now to the **Setup for Floppy Disk Network** section of this chapter.

Hard Disk MCS Setup Goals

The setup tasks on the next pages take you through the final steps of getting your network up and running. Your overall goal in setting up your CG Network systems is to have a network with these features:

- An MCS user program stored on the Production Control System's hard disk **H1**.
- PowerView fonts stored on the Production Control System's hard disk **H1**. You accomplish this by transferring the fonts from Master Font Width Disks to a floppy User Font Width Disk and then copying the user font disk to **H1**.
- User programs (copied from UPDs) for all network PowerViews stored on the Production Control System's hard disk **H1**.
- Default programs established for each of your network PowerViews. A default program loads automatically when each PowerView is turned on or reset every day.
- Back-up copies of User Program Disks and the User Font Width Disk for each network system.

Tasks for Network Setup

It is recommended that you follow the tasks in this section *exactly* in setting up your CG Network. Each task is explained on the following pages.

Task One: Create MCS User Program Disks

You need to create a new MCS user program that includes the network software. In this task, you create the MCS's User Program Disks (UPDs). You perform this task at the MCS.

Task Two: Place MCS user program on H1

In this task, you get the MCS user program on the hard disk **H1**. If you have already been using the MCS hard disk, you copy the UPDs you created in Task One onto **H1**. If the hard disk is a new part of your MCS, you recreate the user program directly on the hard disk. You perform this task at the MCS.

Task Three: Format PowerView disks *(if PowerView is on network)*

In this task, you format floppy disks to serve as:

- Back-up User Program Disks.
- A back-up User Font Width Disk.
- Job disks.

You perform this task at a network PowerView.

Task Four: Create a PowerView User Font Width Disk *(if PowerView is on network)*

Even if you have a User Font Width Disk for your network MCS, you should recreate the disk for use on the network PowerViews. The new disk will contain *font attribute* information—characteristics that enable the PowerView's view window to display your fonts in a representative style. You can use these fonts in the MCS. You perform this task at a network PowerView.

Task Five: Create network PowerViews' user programs on floppy disks *(if PowerView is on network)*

In this task, you create an operating program for each network PowerView. You can use each of these programs as back ups for the MCS hard disk or as an alternate way of loading each PowerView. You perform this task at a network PowerView.

Task Six: Copy PowerView font disk onto H1 *(if PowerView is on network)*

In this task, you transfer the fonts on the PowerView User Font Width Disk to the Production Control System's hard disk **H1** under the subindex name **font**. With the fonts stored on **H1**, they will load automatically into each network controller (PowerView *and* MCS) during composition. The User Font Width Disk then serves as a back up for fonts stored on the hard disk. You perform this task at *both* a network PowerView and the MCS.

Task Seven: Copy PowerViews' user programs onto H1 *(if PowerView is on network)*

► ***Perform this task only if you chose the Remote Load Option on your MCS's user program.***

In this task, you copy the PowerViews' user programs that you created in Task Five onto the Production Control System's hard disk **H1**. The procedure has four steps:

1. Load the Production Control System's user program.
2. Load a network PowerView's user program from floppy disks.
3. Display the disk index of each PowerView UPD and find the filename of each user program file.
4. Copy the program files across the network onto **H1** with the user program's **Copy File** function. You copy the program files into PowerView program subindex(es) that are on the MCS hard disk.

Task Eight: Copy PowerView utility programs onto H1 *(if PowerView is on network)*

► ***Perform this task only if you chose the Remote Load Option on your MCS's user program.***

You should store your PowerView utility programs on the Production Control System's hard disk **H1**. Loading a utility program is then faster and easier. You can store the utility program disks in a safe place. This task uses the same type of procedure you used in Tasks Six and Seven.

Task Nine: Establish default programs for network PowerViews *(if PowerView is on network)*

► ***Perform this task only if you chose the Remote Load Option on your MCS's user program.***

This task ensures that the correct program will load from the Production Control System's hard disk **H1** into each PowerView when you turn the PowerView on. You perform this task at the network PowerView(s).

Task Ten: Create a font inventory file *(optional)*

A font inventory file lists all fonts stored on **H1**. After it is typeset, it is a valuable source of information for each of your systems. This is an optional task. Information and instructions for this task can be found in the **System Setup** chapter of the MCS *Operator Training Manual*, on pages II-35, II-38, and II-39. You can also read the ***Font Width Utility*: Other Functions** chapter of the PowerView *Setup and Utilities Manual*, under the heading **Function 5—Create Font Inventory File.**

Task Eleven: Copy MCS utility programs onto H1

If you have not already done so, copy your MCS utility programs onto the hard disk **H1**. Loading a utility program is then faster and easier. You can store the utility program disks in a safe place. This task uses the same type of procedure you used in Tasks Six, Seven, and Eight above.

IMPORTANT:

- Follow each of these network setup tasks in the exact order given.
- Use other manuals when requested. They are your best guides to setting up your network systems.
- ***Do not perform these tasks if the only hard disk on the network is on a PowerView.*** The steps for setting up a hard disk PowerView CG Network begin on page B-2 of this manual.
- ***Do not perform these tasks if there are no hard disks anywhere on the network.*** The steps for setting up a floppy-disk-based CG Network begin on page B-24 of this manual.
- If there are no PowerViews on your CG Network, skip Tasks Three through Nine.

Task One: Create MCS User Program Disks

An MCS cannot work until you *program* it, that is, give it instructions by loading its user program or a utility program. The user program is your basic typesetting program. It tells the MCS how to interpret typesetting commands.

On CG Network, a MCS's user program also gives the MCS its ability to use remote-public resources and to recognize different output devices. You need to load the user program into the MCS each time you turn it on or reprogram it after using a utility.

Each network system's user program is based on the system's combination of resources and the names of those resources. You build the user program by using *Master Program Disks* (MPDs) and the *System Generator Utility (sysgen)*. If you store the user program on floppy disks, the disks are called *User Program Disks* (UPDs).

You need to create a new set of MCS User Program Disks to include the network capability. For background information on creating a user program with the MCS *System Generator Utility*, refer to the **System Setup** chapter of the MCS *Operator Training Manual*. For more information and a complete list of new *sysgen* questions, go to the *MCS 10/100 Series H Software Release Information Manual.*

Task Two: Place MCS User Program on Hard Disk H1

Storing the MCS's user program on the hard disk **H1** makes daily program loading much easier. Having the program on the hard disk means you do not have to use several floppy disks to load one program.

► If you have already been using the MCS hard disk, copy the UPDs you created in Task One onto **H1**. For instructions on how to copy disks, refer to the MCS *Operator Training Manual,* pages II-20 through II-22.

► If the hard disk is a new part of your MCS, you need to recreate the user program directly on the hard disk. Go through the *sysgen* procedure one more time, following the questions in the *MCS 10/100 Series H Software Release Information Manual* again if necessary. Answer the questions exactly as you did the first time, with these two exceptions:

?? What is sysgen output disk drive?
?? (F1, F2, H1, H2; default F2)

Because you are writing the program directly onto the hard disk, answer **H1**.

?? Enter program filename.
?? (1-10 characters; default MCS-H)

You must remember the name you type here. You use it every time you turn on the MCS to load its user program. Write down the program name and keep it near the controller.

Task Three: Format PowerView Disks

► You complete this task at a network PowerView. If there are no PowerViews on your CG Network, skip this task.

The *Disk Format Utility* is one of three utility programs you use to set up your CG Network PowerViews. The other two utility programs you use are the *Font Width Utility* and the *System Generator Utility.*

The PowerView *Disk Format Utility* formats blank disks, reformats already-formatted disks, copies entire disks, and copies individual files.

Formatting a disk prepares it to receive information. Until you have properly formatted disks, you cannot build a user program, create User Font Width Disks, or typeset jobs. A PowerView uses:

- **Dual-Sided Program Disks**
  Dual-sided program disks store the user program for each of your CG Network PowerViews. You can use these disks as a back up to the user programs stored on your Production Control System's hard disk. *You cannot use dual-sided program disks in an MCS disk drive.*
- **Dual-Sided Text Disks**
  Dual-sided text disks store jobs and font width information. They hold twice as much as regular single-sided disks used on your MCS. These double-sided text disks, along with any hard disks on the network, can store the jobs you create at your PowerViews. *You cannot use dual-sided text disks in an MCS disk drive.*
- **Single-Sided Text Disks**
  You can also use single-sided text disks to store your jobs and font width information. You may want to use this type of disk since it is compatible with the entire MCS product line. Jobs stored on single-sided text disks can be displayed and typeset from any MCS or PowerView.

You need:

- **Three dual-sided program disks per network PowerView** to make User Program Disks for each of those systems.
- **At least two dual-sided text disks**, one to make a User Font Width Disk; one to store jobs on.

You may want:

- **Some single-sided text disks** for files you create at the PowerView but want to edit from an MCS floppy disk drive.

How To Format Disks

For complete instructions on how to format floppy disks to use in your CG Network PowerViews, go to the PowerView *Setup and Utilities Manual*, under the heading **Task One: Format Floppy Disks.**

When you format a floppy disk, you assign that disk a name. For your network PowerViews' User Program Disks (UPDs), you should assign a disk name that tells you what is on the disk. The program disks should be named something like this:

- Name your PowerView User Program Disks according to system number and disk (volume) number, for example, *sys2-1, sys2-2, sys2-3,* etc. This lets you know the disks are for a certain system, and represent the different volumes of the program.

Task Four: Create a PowerView User Font Width Disk

► You complete this task at a network PowerView. If there are no PowerViews on your CG Network, skip this task.

All font widths are stored on Master Font Width Disks that you purchase from Compugraphic. In this task, you transfer the information on each of these disks to a User Font Width Disk (UFWD) with the *Font Width Utility*. In Task Seven, you copy the information on your User Font Width Disk to the Production Control System's hard disk **H1**.

Once you store font information on **H1**, font widths load automatically into each network controller during file composition. Each font is known by its User Font Identification (UFID) number. Without font width information, network systems don't know how much room to allow for each character. And a PowerView doesn't know how to represent the character in the view window.

There are three steps to building a User Font Width Disk:

- **Organize fonts by establishing UFIDs.**
  You assign each font an identification number so you can tell the controller which font to use. You decide what number will represent each of your fonts.
- **Select fonts from a Master Font Width Disk and copy each font and UFID number into controller memory.**
  You received your fonts on one or more Master Font Width Disks. You copy font widths from the master disks and assign each font a UFID number. Controller memory is a temporary holding area for this information.
- **Transfer fonts and their UFIDs from controller memory to a UFWD.**
  This disk is your permanent copy of the fonts and their UFID numbers. The UFWD must be formatted as a single- or dual-sided *text* disk. This original User Font Width Disk can also serve as a back-up font disk should anything happen to the Production Control System's hard disk.

For complete information on creating a PowerView User Font Width Disk, go to the **Task Two: Creating a User Font Width Disk** section of the PowerView *Setup and Utilities Manual*. Begin with the heading **What to Do**. Because your fonts are going to be stored on **H1** eventually, you *do not* have to create dress files.

Once you have transferred all of your fonts to a User Font Width Disk, come back to this manual and continue with Task Five.

IMPORTANT:

- If one of your network output devices is an MCS "diskless" 8000 typesetter, refer to the *MCS 8000 Addendum* for instructions to set up fonts for it.
- Even if you already have an MCS User Font Width Disk, you should take the time to complete this task. When you create a *PowerView* User Font Width Disk, you assign *font attributes* to your typefaces. These attributes enable a PowerView view window to display a representation of your fonts. You do not have font attribute information on your MCS User Font Width Disk.

Task Five: Create Network PowerViews' User Programs on Floppy Disks

► You complete this task at a network PowerView. If there are no PowerViews on your CG Network, skip this task.

A PowerView cannot work until you *program* it, that is, give it instructions by loading its user program or a utility program. The user program tells the PowerView how to display text and interpret typesetting commands.

On CG Network, a PowerView's user program also gives the PowerView its ability to use remote-public resources and to recognize different output devices. You need to load the user program into the PowerView each time you turn it on or reprogram it after using a utility.

Each network PowerView's user program is based on the PowerView's combination of resources and the names of those resources. You build the user program by using *Master Program Disks* (MPDs) and the *System Generator Utility (sysgen)*. If you store the user program on floppy disks, the disks are called *User Program Disks* (UPDs).

You store each network PowerView's user program both on floppy disks and on the Production Control System's hard disk **H1**. In this task, you create the PowerView user programs on floppy disks. You copy these user programs to **H1** in Task Seven. You can use the floppy disk user programs to boot the PowerViews if the Production Control System is turned off for any reason.

What you need to build a PowerView user program

- The Master Program Disks you purchased for your PowerView.
- Three blank, formatted, dual-sided program disks.
- The PowerView *System Generator Utility* program.
- The PowerView *System Generator Utility Handbook*.

In this task, the user program is built in three steps:

1. **Loading the *sysgen* program.**
   To build a user program, you need to program a PowerView with the *System Generator Utility* program. This program is called *sysgen* for short.
2. **Answering questions about the program.**
   You answer a series of questions on the screen about the options and resources on a network PowerView. You also assign names to some of the PowerView's resources. Type in your answers to the questions at the PowerView keyboard—the answers build the basic outline of the program.
3. **Copying information from the Master Program Disks (MPDs) to the User Program Disks.**
   After you have finished answering all the questions, a screen message requests, by name, the Master Program Disk that contains each option you have specified. When requested, insert each Master Program Disk into the disk drive. One at a time, you use the sets of dual-sided program disks labeled with the system number and UPD volume number. By copying the information from the MPD to the UPD, *sysgen* builds your user program.

For step-by-step instructions, a complete list of *sysgen* questions, and explanations of the questions, consult the PowerView *System Generator Utility Handbook*. After you have answered the *sysgen* questions, follow the instructions for **Building the User Program on Floppy Disks.**

Hint:

- Before you go on to the *System Generator Utility Handbook*, make a list of all your options and resources. Then, when the *sysgen* asks if you have an option, you can refer quickly to your list and respond accurately.
  - ► See your order form to find out which options you should have.
  - ► Check the MPDs that came with your system.

Task Six: Copy PowerView Font Disk onto H1

► Perform this task only if you completed Task Four.

In Task Four, you transferred all of your font widths to your PowerView User Font Width Disk. Now you need to copy the UFWD to your Production Control System's hard disk **H1**.

Copying the fonts to the hard disk provides all of your network systems with automatic font loading from **H1** when you create and typeset files. The User Font Width Disk you created in Task Four can serve as a back-up disk if the Production Control System's hard disk is unavailable.

To copy the User Font Width Disk onto **H1**, you program both the MCS and one of your network PowerViews with their respective user programs. Once the user programs are loaded, you can use the **Copy File** function that is part of the user program to transfer the font width information from the floppy disk to **H1** across the network.

When you copy the User Font Width Disk onto the hard disk, copy the entire floppy disk into a hard disk subindex called **font**.

► If that subindex does not exist on the hard disk, you need to create it. Refer to the MCS *Operator Training Manual*, page X-9, for instructions on how to create a subindex. When creating the subindex, type the name **f o n t**. Do this at the MCS.

► For information on how to copy a disk, refer to the MCS *Operator Training Manual*, page II-20 through page II-22, and the PowerView *File Management and Typesetting Operator's Manual*, Chapter 22.

Task Seven: Copy PowerViews' User Programs onto H1

► Perform this task only if you completed Task Five and chose the Remote Load Option on your MCS's user program.

In Task Five, you created your PowerViews' user programs on floppy disks. Now, copy those disks to the Production Control System's hard disk, **H1**.

Copying the User Program Disks onto **H1** requires that you again load the user programs into the Production Control System and one of the network PowerViews. Using the **Copy File** function that is part of the user program, copy the PowerViews' user program *files* onto **H1** under a program subindex name created especially for your type of PowerView. (For more information on program subindexes, see the **Cold Start Loading** section of **Chapter C: Daily Operations** in this manual.)

► If the user program is for a **PowerView 10**, the program subindex name is **LOAD PV10**.

► If the user program is for a **PowerView 5**, the program subindex name is **LOAD PV05**.

You may have to create the PowerView program subindexes at the MCS. Check the hard disk index to be sure. Once again, refer to the MCS *Operator Training Manual*, page X-9, for instructions on how to create a subindex. When creating the subindex, the first subindex name is **LOAD**. The second subindex names are **PV10** and **PV05**.

Copying a User Program by Filename

Before copying a user program file with the **Copy File** function, you need two things: the name of the program file and its *extension*.

A file *extension* is a two-letter code that identifies the file's type. A system assigns an extension to a file when you write the file onto a disk.

You can see a file's extension on the disk index. The most common extension is **TC** (*Text Compose*), meaning a job file that you can call, edit, queue, etc. The user program files you copy in this task have the extension **PL** (*Program Load*).

There are 5 steps to copying a user program file onto **H1**. The steps listed here have specific instructions outlined in other locations.

1. If you have not already done so, load the Production Control System's user program into its controller. Use the floppy program disks you created in Task One, or load the program from **H1**. (Consult the **Daily Operations** chapter of this manual.)
2. If you have not already done so, load one of your network PowerViews with its user program. Use the floppy program disks you created in Task Five. (Consult the **Daily Operations** chapter or page B-11 of this manual.)
3. At the *PowerView*, display the disk index of one of your network PowerView's User Program Disks. (Consult the **Displays** chapter of the PowerView *File Management and Typesetting Operator's Manual* or the MCS *Operator Training Manual*, page XII-3.)
4. Look for the filename with a **PL** extension. This is the program file you need to copy onto **H1**.
5. Using the **Copy File** function, copy the user program filename from the PowerView floppy disk to the MCS hard disk **H1**.
   - The **Source** disk drive (**D:**) is the resource name of the PowerView's left floppy disk drive. (This is the disk drive you are copying *from* and where the User Program Disks should be.)
   - **N:** is the filename of the user program file on the UPD in the drive; for example **sys1-3**.
   - The extension (**Ext:**) of the file should be **PL**.
   - The **Destination** disk drive (**D:**) is **H1**.
   - The second filename (**N:**) should be the same as the original filename. However, you need to type the program subindex name for the type of PowerView the user program is for—**LOAD PV10** *or* **LOAD PV05**—*before* you type the user program filename.

   For more information on copying files, consult the PowerView *File Management and Typesetting Operator's Manual*, Chapter 22, or the MCS *Operator Training Manual*, pages II-20 through II-22, and XIV-30 and XIV-31.
6. Repeat steps **3** through **5** for each network PowerView's set of UPDs.

When you have copied all of the user program files onto **H1** under your program subindex(es), proceed to the next section, **Task Eight: Copy PowerView Utility Programs onto H1**.

Task Eight: Copy PowerView Utility Programs onto H1

► Perform this task only if you have a PowerView on your CG Network and you chose the Remote Load Option on your MCS's user program.

Just as you copied your PowerViews' user programs onto **H1**, you should copy all of your PowerView utility programs onto the hard disk. In this way, you can load the utility programs directly from the hard disk.

You benefit by needing fewer floppy disks—and gain the safety of having the original utility program disks put away in a secure place. If you have a PowerView 5, this also means you will be turning that system off and on less frequently.

Just as with copying the user programs in the previous task, copying the utility programs onto **H1** requires that the Production Control System and one of the network PowerViews be programmed with their user programs. These user programs should still be in the systems' memories from the previous task. You also copy the utility programs onto **H1** under the program subindex for each type of PowerView on the network.

Follow these similar instructions to copy the PowerView utility program files onto the MCS hard disk **H1**:

1. The user program should still be loaded in the Production Control System and one of the network PowerViews.

2. At the PowerViews, display the disk index of one of your network PowerView's utility program disks. These programs include the *Disk Format Utility*, the *Font Width Utility*, the *System Generator Utility*, the *Disk Recovery Utility*, and possibly the *Backup and Restore Utility*. (Consult the **Displays** chapter of the PowerView *File Management and Typesetting Operator's Manual.*)
3. Look for the filename with a **PL** extension. This is the utility program file you need to copy onto **H1**.
4. Using the **Copy File** function, copy the utility program filename from the PowerView floppy disk to the MCS hard disk **H1**.
   - The **Source** disk drive (**D:**) is the resource name of the PowerView's left floppy disk drive. (This is the disk drive you are copying *from* and where the utility program disks should be.)
   - **N:** is the filename of the utility program file on the UPD in the drive; for example **dskutl**.
   - The extension (**Ext:**) of the file should be **PL**.
   - The **Destination** disk drive (**D:**) is the MCS hard disk **H1**.
   - The second filename (**N:**) should be the same as the original filename. However, you need to type the program subindex name for the type of PowerView the utility program is for—**LOAD PV10** *or* **LOAD PV05**—*before* you type the utility program filename.
5. Repeat steps **2** through **4** for every PowerView utility program disk.

When you have copied all of the utility program files onto **H1** under your program subindex(es), proceed to the next section, **Task Nine: Establish Default Programs for Network PowerViews.**

Task Nine: Establish Default Programs for Network PowerViews

► Perform this task only if you completed Task Seven and chose the Remote Load Option on your MCS's user program.

With the satellite PowerViews' user programs stored on the Production Control System's hard disk **H1** (copied there in Task Seven), you need to establish a *default program* for each network PowerView. These default programs load automatically into each PowerView every time you turn it on.

Designating a default program ensures that the correct program loads into each network PowerView when you turn it on or reset it. The more network PowerViews you have on your CG Network, the more important it is to establish default programs for them.

There are two procedures to follow to establish the default program for a satellite PowerView:

- First, load the PowerView's floppy User Program Disks into its controller.
- Then perform *on-line program loading* to establish a default loading program.

Perform this task once at each satellite PowerView on the CG Network. Go from PowerView to PowerView, following the steps on pages B-12 and B-13 in the **Setup for Network with a Hard Disk on a PowerView** section of this chapter.

Task Ten: Create a Font Inventory File

optional

A font inventory file lists all fonts stored on **H1**. After it is typeset, it is a valuable source of information for each of your systems. This is an optional task. Information and instructions for this task can be found in the **System Setup** chapter of the MCS *Operator Training Manual,* on pages II-35, II-38, and II-39. You can also read the ***Font Width Utility*: Other Functions** chapter of the PowerView *Setup and Utilities Manual,* under the heading **Function 5—Create Font Inventory File.**

You perform this task at the MCS that has **H1** attached to its controller.

Task Eleven: Copy MCS Utility Programs onto H1

If you have not already done so, copy your MCS utility programs onto the hard disk **H1**. Loading a utility program is then faster and easier. You can store the utility program disks in a safe place.

This task uses the same **Copy File** procedure you used in Tasks Six, Seven, and Eight on the previous pages. The only difference is that you perform this task solely at the MCS, copying the utility program files from an MCS floppy disk drive onto the MCS hard disk. You do not copy the utility program files into a program subindex. An MCS does not use program subindexes.

The Next Step

This concludes basic system setup for a CG Network that has a hard disk on an MCS. For procedures on system startup and other daily operations, go to **Chapter C: Daily Operations**. To learn how to use your systems for typesetting, consult the PowerView *File Management and Typesetting Operator's Manual* and the MCS *Operator Training Manual.*

Setup for Floppy Disk Network

Perform the following setup tasks if there are no hard disks on any of your CG Network systems. Setting up a CG Network on which the systems have floppy disks only has fewer tasks than those required for hard disk systems.

Floppy Disk Network Setup Goals

Your overall goal in setting up your floppy-disk CG Network is to have a network with these features:

- Fonts stored on a floppy User Font Width Disk (a *UFWD*). You transfer the fonts from your Master Font Width Disks to a User Font Width Disk; you need to make a copy of the UFWD for each network system.
- User programs for each network system created on floppy disks. You use these UPDs to program your network systems every day.
- Back-up User Program Disks for each network system; a back-up User Font Width Disk.

Tasks for Network Setup

You should follow the tasks in this order to set up your CG Network. You are referred to the appropriate manual for each task.

► If there are no PowerViews on your CG Network, skip Tasks One through Three.

► If there are no MCSs on your CG Network, skip Task Four.

Task One: Format PowerView Disks

In this task, you format floppy disks for:

- Each PowerView's User Program Disks. Make enough for every day and back-up use. A single set of PowerView User Program Disks takes two or three disks. Multiply the number of disks by the number of PowerViews on the network; double *that* number for your back-up sets.
- Your User Font Width Disks. You should have a copy of your UFWD for each system; this requires several text-formatted disks.
- Job disks. You should have many text-formatted job disks.

Note: Your best guide for formatting disks is the **Task One: Format Floppy Disks** section of the PowerView *Setup and Utilities Manual*. Be sure to format enough disks for every day and back-up needs.

Task Two: Create a PowerView User Font Width Disk

In this task, you transfer font width information from Master Font Width Disks (*MFWDs*) to a floppy disk. This User Font Width Disk (*UFWD*) becomes the source disk for the UFWD copies you make for each CG Network system. For this task, use the PowerView *Font Width Utility*.

This task has three main steps:

1. Organizing your fonts and choosing your UFIDs.
2. Transferring font width information from Master Font Width Disks to your User Font Width Disk.
3. Creating font dress files.

Even if you have a User Font Width Disk for your network MCS, you should recreate the disk for use on the network PowerViews. The new disk will contain *font attribute* information—characteristics that enable the PowerView's view window to display your fonts in a representative style. You can use these font widths in a network MCS.

Note: Your best guide for creating a PowerView User Font Width Disk and the dress files on it is the **Task Two: Create a User Font Width Disk** section of the PowerView *Setup and Utilities Manual*.

Task Three: Create PowerView User Programs

In this task, you create a user program for each of your network PowerViews. You store this user program on floppy disks.

Note: Your best guide for creating a PowerView user program is the *System Generator Utility Handbook*. Follow the instructions for **Building the User Program on Floppy Disks**.

Task Four: Create MCS User Program(s) on Floppy Disks

In this task, you create a user program for each MCS on the network. You store this user program on floppy disks, also.

Note: Your best guides for creating an MCS user program are the MCS *Operator Training Manual*, **System Setup** chapter, and the *MCS 10/100 Series H Software Release Information Manual.*

Task Five: Make Copies of Your Disks

Make copies of your disks for back-up purposes. On the PowerView, you can use either the **Copy Disk** function of the *Disk Format Utility* program, or the wildcard **Copy File** function that is part of the user program. On the MCS, use the wildcard **Copy File** function that is part of user program. You should make:

- One copy of each volume of each user program. Keep the sets of UPDs together and clearly labeled.
- A copy of your User Font Width Disk for each network system. You should use each copy during the daily operation of your CG Network. Keep the original UFWD in a safe location.

Note: ► Your best guide for copying disks with the PowerView *Disk Format Utility* is the ***Disk Format Utility:* Other Functions** chapter of the PowerView *Setup and Utilities Manual.*

► Your best guide for copying disks with the wildcard **Copy File** function of the user program is the **Disk Management** chapter of the PowerView *File Management and Typesetting Operator's Manual*, or the MCS *Operator Training Manual*, pages II-20 through II-22.

After performing these setup tasks, you should be ready to start using your network on a daily basis.

Chapter C:
Daily Operations

Daily Operations

This chapter tells you about the things you need to know to operate the MCSs and PowerViews on your network on a daily basis. The first thing you have to do is get the network systems programmed with their user programs.

System Startup: Hard Disk on PowerView

If you followed the tasks in the **Setup for Hard Disk on a Network PowerView** section exactly, starting up your CG Network every day will be very easy.

To program the network from a PowerView hard disk:

1. Turn on any PowerView external data storage devices.
2. Turn on the Production Control System. The default program you established in Task Eight loads into the Production Control System's controller from its own hard disk **H1**.
3. When the program is loaded, fill in the timestamp and press EXECUTE.
4. Once the timestamp line appears at the Production Control System, you can turn on the satellite PowerView workstations. The default programs you established in Task Nine load into each PowerView controller from the Production Control System's hard disk **H1**.
5. When a satellite PowerView's program has finished loading, that system also needs a timestamp and EXECUTE to complete the procedure.
6. A floppy-disk-based MCS on the network is programmed individually from UPDs. Follow the instructions on page C-3 to load the user program into the network MCS.

Once the user programs are loaded into the controllers, you do not need to load fonts from floppy disks. Any fonts you request in a file are pulled from **H1** into the requesting network controller. This is true of the Production Control System *and* the satellite systems. When you display any workstation's fonts with the DISP **f t** EXECUTE command, the font display shows the *last* 16 fonts that controller has used.

You also don't have to worry about font widths when you queue a file to any output device. All fonts are available from the Production Control System's hard disk, **H1**, no matter which output device you are using. This is true of public and private output devices.

Remember

- The first network hard disk should be attached to the Production Control System.
- A satellite system has access to all fonts, programs, and files stored on the Production Control System's hard disk, **H1**.
- A satellite system also has access to format files, exception dictionaries and translation tables on **H1**.
- Check the resource table at each network system to see what resources are available, and what the proper resource names are. For more information on resource tables, see the section called **Resource Table** later in this chapter.
- The Production Control System's default program must be loaded at least as far as the timestamp before you can load a satellite PowerView system's default program.
- You may program the Production Control System without a satellite system's being programmed or turned on.
- You can boot any CG Network controller from floppy disks at any time.
- Check the PowerView *File Management and Typesetting Operator's Manual* and *Options Manual*, and the MCS *Operator Training Manual* and *Options Training Manual* for your daily typesetting needs.

System Startup: Hard Disk on MCS

Follow these steps if:

- The only hard disk on the network is on an MCS.
- You have selected the *Remote Load Option* for the MCS during the MCS *sysgen* procedure. The Remote Load Option enables you to load your network PowerViews' user and utility programs from the MCS hard disk.

To program the network from the MCS hard disk:

1. Turn on the MCS hard disk controller.
2. Turn on the MCS controller.
3. After the controller checks the MCS's floppy disk drives, this message appears on the primary MCS screen (you may see **H2** substituted for **H1**):

   Loading from H1

   Enter Filename for Volume 1, Then Hit Execute

   D:H1 N:

4. At this point you must remember the name you assigned your MCS user program when you went through the *System Generator Utility* questions. Type the program name exactly as you did at that time and press EXECUTE.
5. This message then appears on the screen (with your filename represented by the **x**'s; you may see **H2** here also):

   Loading Volume 1

   D:H1 N:xxxxxxxxxx

6. When the program has loaded, fill in the timestamp and press EXECUTE.
7. Once the timestamp line appears at the MCS, you can turn on the satellite PowerView workstations. The default programs you established in Task Nine load into each PowerView controller from the MCS's hard disk **H1**.
8. When a satellite PowerView's program has finished loading, that system also needs a timestamp and EXECUTE to complete the procedure.

Once you have loaded the user programs into all network controllers, you do not need to load fonts from floppy disks. Any fonts you request in a file are pulled from **H1** into the requesting network controller. This is true of the MCS *and* the satellite PowerView. When you display any workstation's fonts with the DISP **f t** EXECUTE command, the font display shows the *last* 16 fonts that controller has used.

You also don't have to worry about font widths when you queue a file to any output device. All fonts are available from the MCS's hard disk, **H1**, no matter which output device you are using. This is true of public and private output devices.

For more details on the MCS hard disk program loading procedure, read pages VI-2 through VI-13 in the MCS *Operator Training Manual*. If your MCS also has a Preview, your program loading procedure has some extra steps. Consult the MCS *Operator Training Manual* and the *Options Training Manual* for complete instructions.

System Startup: Floppy Disk CG Network

If your network systems have only floppy disk drives, follow these steps:

- For PowerViews, follow the steps found in the **Everyday Use** section of the PowerView *Setup and Utilities Manual* to start up each workstation.
- For MCSs, follow the steps found in the MCS *Operator Training Manual*, pages VI-3 through VI-5 and VI-8, to start up each system.

Here is a shortened version of those steps. They are the same for the Production Control System and all satellite systems.

1. Turn on the network systems.
2. Place each system's Volume 1 UPD in the appropriate left floppy disk drive.
3. Follow the screen messages to load Volume 2 and (if there is one) Volume 3 of the UPDs.
4. Enter the values for each timestamp and press EXECUTE.
5. Load fonts into each network controller, either individually or from dress files.

The systems are ready for typesetting after you load the user programs and fonts into each controller. Each network system can use the public resources of the other systems. Display each system's resource table to see what resources are available and what the proper resource names are.

Remember

- On a floppy-disk-based CG Network, it doesn't matter which system is programmed first.
- You can program the Production Control System without a satellite system, or a satellite system without the Production Control System.
- If you program a satellite system without the Production Control System, you cannot use any of the Production Control System's public resources, including the primary output device.
- Check the resource table at each network system to see what resources are available, and what the proper resource names are. For more information on resource tables, see the section called **Resource Table** later in this chapter.
- You cannot load one system's UPDs from another system's floppy disk drives.
- Load fonts into each network system from your User Font Width Disk. You can use dress files or load the fonts individually.
- You can load fonts from any public floppy disk drive.
- Be sure the fonts in a system directly attached to an output device match the fonts in the file(s) you are queuing from a satellite system; if the fonts don't match, you will see the message **Data Error** on your typesetter display.
- Check the PowerView *File Management and Typesetting Operator's Manual* and *Options Manual*, and the MCS *Operator Training Manual* and *Options Training Manual* for your daily typesetting needs.

Font Access

As shown in the following sections, you can load font widths into a CG Network controller from both hard and floppy disks.

Floppy-Disk-Based CG Network

On a floppy-disk-based CG Network, you always have to load fonts from a User Font Width Disk. You may load dress files or individual fonts; you may load the fonts from any public disk drive. You cannot, however, load fonts into a controller across the network—you must load the fonts into each individual controller.

You can delete fonts from controller memory, but you cannot delete fonts across the network; you must delete them from each controller individually.

For network PowerViews, refer to the **Everyday Use** chapter of the PowerView *Setup and Utilities Manual* for the procedures to load fonts. You can find information on deleting fonts in the PowerView *File Management and Typesetting Operator's Manual.*

For network MCSs, refer to the *Operator Training Manual,* pages VI-4 and VI-5, for the procedures to load and delete fonts.

Hard-Disk CG Network

With a hard disk on your CG Network, you can load fonts either directly from **H1** or from a floppy User Font Width Disk.

Loading Fonts From H1

After you initially boot up your hard disk CG Network, all network controllers pull fonts from **H1** when you request them in a file. There is no need to load dress files or fonts.

You can view the fonts in each controller's memory with the **Font Display** command. To call this display to the screen, press DISP, type **f t** and press EXECUTE. The display shows you the *last* 16 fonts that particular controller used.

As you call fonts from the hard disk, they are added to the font index at the controller. When you call the seventeenth font, one font's name and information in controller memory is replaced by the new font you just called.

Because the font display shows the 16 fonts in memory and not the entire font library on **H1**, you should take a few minutes to create a *font inventory file* for your network. A font inventory file is a comprehensive list of all fonts in the **font** subindex. You can find step-by-step instructions for creating a font inventory file in the ***Font Width Utility*: Other Functions** chapter of the PowerView *Setup and Utilities Manual,* under the heading **Function 5—Create Font Inventory File.** In the MCS *Operator Training Manual,* see pages II-38 and II-39.

Loading Fonts From Floppy Disks

Even if you have fonts stored on **H1**, you may find it necessary to load fonts manually from a floppy User Font Width Disk. All network systems have floppy-disk font loading and deleting capabilities. Refer to the **Everyday Use** chapter of the PowerView *Setup and Utilities Manual,* or pages VI-4 and VI-5 in the MCS *Operator Training Manual* for font loading and deleting instructions.

You can use the SYS CMD **d r e s s** and SYS CMD **l f n t** commands to load fonts into a CG Network controller. When you use these commands to load fonts, the controller has a 16-font capacity—the size of one dress file. If the next font you request is on **H1**, the controller pulls that font from the hard disk automatically.

You can also delete fonts manually from controller memory. The SYS CMD **d f n t** and SYS CMD **c f m e m** commands are also explained at the beginning of the PowerView *File Management and Typesetting Operator's Manual.*

To load or delete fonts manually, you must be in edit mode. If you are not in edit mode, the message **Ft Protected** appears on the middle status line.

You cannot delete the controller's default font. The default font is the first font loaded into the controller or the font at the top of the font display.

Resource Names

By now you know that disk drives and output devices are among the *resources* on your CG Network. You also know that if the resources are public, you must give them unique names within the network. The unique names ensure that when you request a certain resource, either for file management or queuing functions, the controller gives you the proper one.

If two public resources on the network have the same name, the network systems are able to use only *one* of those resources. If one of the public resources is local to the system where you are working, you are able to use that resource only.

If both of the public resources that have the same name are remote from the system where you are working, you are able to use only the *first* resource with the repeated name. The "first" resource is the first one that the network software finds when you make your request. This situation also occurs when one private and one public resource have the same name.

The sysgen program assigns some resource names; you assign others. Some resource names appeared when you answered *sysgen* questions about certain resources (for instance, private floppy disk drives). You were asked to name other resources (for instance, public hard disks). Upon the creation of your user programs, the *System Generator Utility* assigned these names to the appropriate resources; the names are now a permanent part of your CG Network programs.

You can find any CG Network system's available resources (and the proper resource names) by displaying the system's *resource table* (discussed in the next column). The resource names that are available to every CG Network configuration are as follows:

	PUBLIC	PRIVATE
Output Devices	**T1–T9**	**T8,T9**
Left Floppy Drive	**F3–F9**	**F1**
Right Floppy Drive	**F3–F9**	**F2**
Multiple Search and Translate	**TR**	**TR**
Background Compose	**B1–B9**	**B9**
Hard Disk	**H1–H9**	**H2–H9**
External Hard Disk(s)	**H1*–H9**	**H2–H9**
ACI (local-private only)	**N/A**	**SE, RE**

*A PowerView external hard disk can be H1 only if there is no internal hard disk.

Resource Table

A resource table is a display, stored in each CG Network system, that shows what resources are available to that system. It also shows the proper resource names to use for file management and queuing functions. To call a resource table to the screen, press DISP, type **r t** and press EXECUTE.

A resource table shows:

- The **Name** of the resource (assigned during the *sysgen* procedure).
- The **Description** of the resource (what it really is).
- The **Location** of the resource. These are the locations you might see:
  - —*Local-Private* resources are attached to the system where you are working and can be used by that system only.
  - —*Local-Public* resources are attached to the system where you are working and can be used by all other systems on the network.
  - —*Remote-Public* resources are attached to a system other than the one where you are working and can be used by all systems on the network.

One location that never appears on a resource table is *Remote-Private*. A remote-private resource is attached to a system other than the one where you are working; you cannot use it. Because you cannot use it, there is no need for it to be on your resource table.

Other important points about your CG Network resource tables:

- If the resource table is long enough, you can scroll the table up and down by using the SCRL UP and SCRL DOWN keys on the editing keypad. These keys enable you to see the entire list of resources available to the workstation where you are working.
- Resources are listed on the resource table in alphabetical order according to the resource *name.*
- If resources are currently unavailable (such as when you turn off or reprogram a system), they appear on a *PowerView* resource table with lines drawn through them. Unavailable resources on an *MCS* resource table appear in half-intensity.
- If two resources have the same name (for instance, two Multiple Search and Translate Options), they appear reversed (with a white background) on the resource table.

The next column shows three sample resource tables. The first one is of a satellite system's table. The second one shows what a resource table with repeated resource names looks like. The third example is of a satellite system's resource table with the Production Control System turned off.

Satellite System Resource Table:

Name	Description	Location
B1	Background Compose	Remote-Public
B9	Background Compose	Local-Private
F1	Floppy Disk #1	Local-Private
F2	Floppy Disk #2	Local-Private
F3	Floppy Disk #3	Remote-Public
H1	Hard Disk #1	Remote-Public
RE	ACI Receive	Local-Private
SE	ACI Send	Local-Private
T1	Typesetter	Remote-Public
TR	Multi-Search & Translate	Local-Private

Resource Table with Repeated Names:

Name	Description	Location
B1	Background Compose	Remote-Public
F1	Floppy Disk #1	Local-Private
F2	Floppy Disk #2	Local-Private
F3	Floppy Disk #3	Remote-Public
F6	Floppy Disk #4	Remote-Public
H1	Hard Disk #1	Remote-Public
H2	Hard Disk #2	Remote-Public
H9	Hard Disk #3	Local-Private
RE	ACI Receive	Local-Private
SE	ACI Send	Local-Private
T1	Typesetter	Remote-Public
TR	Multi-Search & Translate	Local-Private
TR	Multi-Search & Translate	Remote-Public

Resource Table with Unavailable Resources*:

Name	Description	Location
~~B1~~	~~Background Compose~~	~~Remote-Public~~
F1	Floppy Disk #1	Local-Private
~~F3~~	~~Floppy Disk #3~~	~~Remote-Public~~
~~H1~~	~~Hard Disk #1~~	~~Remote-Public~~
H2	Hard Disk #2	Local-Public
RE	ACI Receive	Local-Private
SE	ACI Send	Local-Private
~~T1~~	~~Typesetter~~	~~Remote-Public~~
TR	Multi-Search & Translate	Local-Private

**An MCS resource table would show the lines as half-intensity.*

System Command TY

With CG Network, you are able to queue to more than one *type* of output device. You are also able to have two output devices attached to one network controller. The different types of output devices you may have on your CG Network are:

- 8000 typesetters
- 8200 series typesetters
- 8400 typesetters
- 8600 typesetters
- EP 308 laser printers
- 9600 Laser Imagesetters
- the CG6000M

A problem arises if your network uses two or more different *types* of output devices. You may not be able to work on a file created for one type of output device at a system programmed for another type of output device. If the system has two output devices attached to its controller, you may not be able to work on a file created for your *secondary* output device.

For example, you might not be able to compose a file containing 8400 typesetting codes on a network system that is programmed to work with an EP 308 as the primary output device. Composing a file means to create, edit, or even move your cursor through the file while in compose mode.

This problem arises because all types of output devices accept a different set of typesetting commands, both when you create a file at a system programmed for that type of output device and when you queue a file to that output device.

Output Device Composition Tables

The set of typesetting commands that a particular output device uses to compose a file is called the output device's *composition table.* The typesetting commands (and the variables within the commands) differ, depending upon which output device you are working with. In the example above, the EP 308 system could not accept a file created with 8400 typesetting codes because the composition tables for the output devices are different.

Foreground Composition Table

When you are creating or composing a file for a certain output device, you are using the output device's *foreground composition table.* The foreground composition table contains the commands you use at the workstation's keyboard and see on the workstation's screen. These are the commands that the controller uses to compose the typesetting commands you type while creating, editing, or composing a file.

When you first boot up a network system, the foreground composition table matches that system's primary output device—the output device attached to port A at the back of the controller. If that system has no output device attached to it, the foreground composition table matches the output device you chose during the *System Generator Utility.*

Background Composition Table

When you queue a file to an output device, you are using the output device's *background composition table.* The background composition table contains commands that you don't see, but that are read and composed by the controller. These are the commands that the output device recognizes when you queue a file to it. When you first boot up a network system, the foreground and background composition tables match—they are for the same output device.

The Background Composition Table and the Background Compose Option

(Power Page users only)

When you queue a file using the Background Compose Option, the controller uses the *background* composition table to compose the file. This is true regardless of which *foreground* composition table the queuing workstation is using at the time.

The Background Compose Option is "tied to" the background composition table of the output device attached to port A at the back of the network controller, *or* the device you chose during *sysgen.* "Tied to" means that you cannot change the commands, used by Background Compose, to an output device other than the primary output device.

Changing the Foreground Composition Table

Each output device queue uses its own background composition table, which you cannot change. You cannot change the background composition table to that of another output device. However, you can change a network workstation's *foreground* composition table to enable you to work on a file for a different type of output device.

To change a workstation's foreground composition table, you use a keyboard system command—SYS CMD **t y**. This command enables you to change a workstation's foreground composition table from the output device it was programmed for to another type of output device.

By changing a workstation's foreground composition table, you can create a file at that workstation for another type of output device. In the example on the previous page, you could use this command to change the workstation's foreground composition table from the EP 308's to the 8400's in order to create an 8400 file.

Using SYS CMD **t y** changes a workstation's foreground composition table without having to reprogram the entire system to work with another output device. You can change foreground composition tables as often as necessary and to as many different types of output devices as necessary. This is because each network workstation's foreground composition table is independent of the others.

Changing a *workstation's* foreground composition table does not affect or change the *output device's* background composition table. Because changing the foreground composition table does not affect the background composition table, you can change a workstation's foreground composition table, and still queue files to any other type of output device. And, other network systems can queue to your output device even if you have changed a workstation's foreground composition table.

Using System Command TY

Note: If your network has only one output device, or one *type* of output device, you should *not* use this command.

You can use SYS CMD **t y** to change one workstation's foreground composition table to match any of your network output device's background composition table. You can also use SYS CMD **t y** to change a foreground composition table when you are creating a file at a workstation that is programmed for an output device that is different from the output device that you are going to queue the file to. Your foreground composition table should match the output device to which you will queue the file.

Using SYS CMD **t y** to change a foreground composition table has no effect on background queuing. That is, the workstation can queue files to any network output device regardless of the foreground composition table that is in effect. You do *not* have to change the foreground composition table when you are just queuing a file to another type of output device. This is because each output device has its own independent background composition table that does not change.

To change the foreground composition table:

1. At the workstation where you want to change the foreground composition table, press SYS CMD and type **t y**.
2. Your top status line shows the primary output device for which the system was programmed. This is either the output device attached to port A at the back of the controller or the output device chosen during *sysgen*. The status line should look something like this:

   SYS:TY N: 8400

3. Type in the name of the output device whose foreground composition table you want to use: **8000, 8200, 8400, 8600, 9600** or **P308**.
   - ► If the output device is a CG6000M attached to an 8600, type **6086**.
   - ► If the output device is a CG6000M, attached to a 9600, type **6096**.

   Your status line should then look something like this:

   SYS:TY N: 8600

4. Press EXECUTE.

When you press EXECUTE, the workstation beeps twice and goes into edit mode automatically. This forces you to press COMPOSE and EXECUTE to recompose the page according to the new foreground composition table. The new foreground composition table remains in effect until you change it again, turn off the system, or reprogram the system.

Remember

- Do not use this command if your network has only one output device, or one *type* of output device.
- The background composition of files is not affected when you use System Command TY. You do not need to change a foreground composition table just to queue a file to a different output device.
- You can use System Command TY to find out which foreground composition table is in effect at a particular time. Press SYS CMD and type **t y**. The status line shows which foreground composition table is in effect. You can then press ABORT to continue using that composition table, or type in the name of another type of output device and press EXECUTE.

Program Loading

Network program loads can be *cold start* or *on-line*.

Cold Start Loading

A *cold start load* happens when you turn on a network system or press the reset/load button on the front of the controller (on PowerView 10s and MCSs only). The load is "cold" either because the controller has no program in memory (upon power up) or because the program in memory has been deleted (upon pressing the reset/load button on a PowerView 10 or MCS).

Cold start loading differs if you have a floppy-disk-based network or if there is a hard disk on a network MCS or PowerView.

Floppy-Disk-Based CG Network

Cold start loading of a floppy-disk-based CG Network system requires a program disk in one of the floppy disk drives of the system you are starting up. If you are turning on the system for the first time of the day, the program disk in the floppy disk drive loads automatically after the controller goes through its diagnostic procedure. This type of cold start program loading works on any network system. *Remember to place the program disk in the drive* after *you have turned on the power.*

If you are loading UPDs, messages appear on the screen telling you to insert successive volumes of your user program as they are needed. The steps listed in the **System Startup: Floppy Disk CG Network** section of this chapter are the steps you go through to cold start load your CG Network systems every day.

Reprogramming a Floppy Disk System

If you are *reprogramming* a floppy disk CG Network system during the day (for instance, to add fonts with the *Font Width Utility*), the cold start load procedure differs slightly if you are reprogramming an MCS or PowerView 10, or a PowerView 5.

- ► To reprogram an MCS or a **PowerView 10**, place a program disk in the left floppy disk drive and press the load/reset button on the front of the controller.
- ► To reprogram a **PowerView 5**, first turn off the terminal. After waiting at least 10 seconds, turn the terminal on again. Then place a program disk in the left floppy disk drive.

The above reprogramming procedures work with any network system. In both instances, the system goes through the same sequence it does when you first turn it on. The controller conducts its type of machine diagnostics, a message tells you the controller is loading Volume 1, and then a program menu or timestamp appears on the screen.

Hard Disk on an MCS

When you first turn on a hard disk MCS, the controller checks the floppy disk drives for a program disk. If it doesn't find a program disk, the controller checks the hard disk(s) for the system's program loading capability. You have to then type in the program name and press EXECUTE.

The procedure that you went through in the **System Startup: Hard Disk on MCS** section of this chapter are the steps you use to program a hard disk MCS when you first turn it on.

To *reprogram* a hard disk MCS in the middle of the day (for instance, to run the *Disk Recovery Utility*), press the load button on the front of the *MCS* controller only. This deletes the existing program from memory and begins a procedure exactly like the one described above. A message appears requesting a program filename; type in the desired program name and press EXECUTE.

For more information on programming and reprogramming a hard disk MCS, see the **System Startup** chapter of the *Operator Training Manual*. If your hard disk MCS has a Preview, see the MCS *Options Training Manual* for instructions on programming the MCS with the Preview.

Hard Disk on a PowerView

When you first turn on a PowerView that is part of a hard disk CG Network, its controller checks the floppy disk drives for a program disk. If the controller doesn't find a program disk, the network software checks the Production Control System's hard disk **H1** for the workstation's default program. The default program then loads automatically into the PowerView controller across the network.

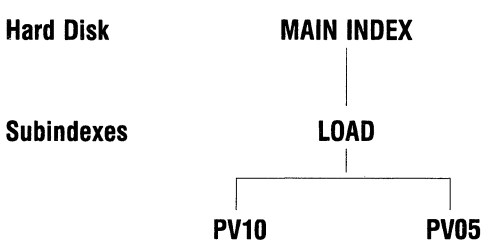
Note: If your Production Control System's hard disk **H1** is located in an external data storage device, you must turn on the storage device before you turn on the Production Control System. Press the green on/off button on the right side of the external data storage device. The button will light up when the storage device is on.

At the end of the day, turn off the Production Control System, then the storage device.

Unless changed, a PowerView's default program is the first program filename alphabetically in the hard disk program subindex. On a PowerView hard disk, these subindexes are created when the hard disk is initialized by a Compugraphic Service Engineer. On an MCS hard disk, you would have to create the program subindexes first (see page B-20).

You can write a PowerView's user program directly into the appropriate program subindex when you use the *System Generator Utility* routine, when you copy a program file with the *Disk Format Utility*, or when you use the **Copy File** function that is part of the user program.

Program Subindexes



For a CG Network PowerView to do a cold start load from the Production Control System's hard disk, load the Production Control System with its user program first. As long as the Production Control System remains on, any satellite PowerView has access to **H1** and can find its default program filename.

Once you boot a hard disk network PowerView with its user program, you can reprogram the PowerView or change its default program name. These procedures require *on-line program loading*, described on this and the following page.

PowerView On-line Program Loading

PowerView On-line program loading requires a hard disk on the CG Network. ***Floppy-disk-based networks cannot do this procedure. MCSs cannot do this procedure.*** However, a network PowerView can perform on-line program loading from an MCS hard disk if you chose the Remote Load Option on the MCS's user program.

On-line program loading is the way you reprogram a network PowerView without using a floppy program disk. On-line program loading can boot any network PowerView from programs stored on any network hard disk. On-line program loading is a *keyboard system command* that takes the place of pressing the PowerView 10's reset button or turning off the PowerView 5 and turning it on again.

The on-line program load procedure also enables you to change a PowerView's default program. Changing the default program changes it for *all successive* cold start loads. The default program loads automatically when you turn on or reset a PowerView controller.

By changing the default program with an on-line load, you are saying that you no longer want the alphabetically first program filename to load automatically. At the end of the **Setup for Network with a Hard Disk on a PowerView** section, you did on-line loads to establish each network PowerView's default user program.

To do an on-line program load:

1. At the PowerView where you want to load the new program, press [SYS CMD] and type: **l o a d** .

   Your top status line should look like this:

   SYS:LOAD D:H1 N:LOAD PV10 CD:N

   The status line defaults to drive **H1** and the subindex for the type of PowerView loading the program. The example above shows a PowerView 10 subindex name.

2. Type in the filename of the program you want to load. A program filename is any file with a **PL** extension.

3. If necessary, cursor left and change the hard disk resource name.

4. Decide whether you want to change the default program (**CD:**) to the program you are loading now. The default for this field is **N** for *No.*

   ► If you are temporarily reprogramming the PowerView with a utility program, you *do not* want to change the default program.

5. ► If you do not want to change your default program, go to step 6 below.

   ► If you *do* want to change your default program, cursor right and type a **y** in the **CD:** field. (If you change the default program, the program name you type in will always load when you turn on or reset the PowerView.)

6. Press [EXECUTE].

After you press [EXECUTE], the PowerView loads the program without going through the machine diagnostics. The program filename appears at the bottom of the screen. An asterisk (*) after the filename indicates that the program is the default for the workstation. Sample screen messages appear at the top of the next column.

PROGRAM LOAD: H1 LOAD PV10 sys3 **PL (*)**

PROGRAM LOAD: H1 LOAD PV05 dskutl **PL**

You can change the default program only if the PowerView's user program is loaded into the workstation. You need the use of the [SYS CMD] key for the on-line program load procedure to work.

Remember:

- On-line program loading requires a hard disk.
- An MCS cannot do an on-line load; however, network PowerViews can do on-line program loading from an MCS hard disk.
- To be able to do an on-line program load from an MCS hard disk, you must say Yes to the Remote Load Option when you create the MCS's user program.
- Be sure all files on the workstation are closed before you do an on-line program load.
- Changing the default program changes it for *all successive* cold start loads on that workstation.
- You can change the default program again as long as the user program is loaded into the PowerView.
- If necessary, you can boot up your network PowerViews with floppy program disks.

Error Recovery

If the Production Control System is not operating:

- You can still use the satellite systems as network systems; you can still use the network.
- You cannot use the Production Control System's public resources; for example, the primary output device or H1.
- Each satellite system can still use the other satellite systems' public resources.
- Check each workstation's resource table to see what its available resources are.
- If the Production Control System has a hard disk, each satellite needs to use a floppy disk copy of the User Font Width Disk to load fonts.

If a satellite system is not operating:

- You can still use the Production Control System and its public resources.
- The remaining satellite systems can still use their own resources plus the public resources of all the other satellite systems; the network is available.
- Check each workstation's resource table to see what its available resources are.

If the network hardware fails:

- You can use each network system as a stand-alone system.
- Only *local* resources are available to each system.
- There is no communication between the network systems, i.e., public resources are not be available across the network.
- Check each workstation's resource table to see what its available resources are.
- The message **Network Error** appears at all network workstations.

Status Messages

Network Busy—at the moment, the network cannot handle the function you have requested. Try the function (queuing a file, calling a font, calling a file) again.

Network Error—this could mean network hardware failure; *or* the Production Control System (or a satellite system) is being reprogrammed; *or* the Production Control System (or a satellite system) was turned off. Check the network connections, the cable, and the transceiver. Check the other network systems.

Option Error—you have requested an optional resource (such as ACI or Background Compose) that is not available on the network. Display the resource table at the system receiving the error to see what resources are available to it.

No Device—you have requested hardware (a disk drive or output device) that is not available on the network. If the resource was previously available, check the network connections and cable. The system where the resource is attached may have been turned off or reprogrammed.

Display the resource table at the system requesting the resource to see what resources are available to it. If the disk drive or output device was available and is not now, the entry in the resource table will have a line through it (or appear in half-intensity).

Net Ready—this message appears on each network screen when the network systems are first powered up. This just says that everything is in working order.

Using Software Options

Your use of certain software options is affected by CG Network. These options are the Advanced Communications Interface (ACI), Multiple Search and Translate (MS&T), Exception Dictionary, and Power Page.

ACI

If your CG Network has the Advanced Communications Interface (ACI):

- ACI is always a *private* resource.
- ACI resource names are **RE** for ACI Receive, and **SE** for ACI Send.
- You can put ACI at every system *except* the Production Control System.
- You can prepare menus only at the system(s) that have ACI.
- You can start and stop communications only at the system(s) that have ACI.
- ACI systems can store menus on or call menus from any public disk (either floppy or hard).
- You can store the files you receive through ACI on any public disk (either floppy or hard).
- If you store the received files on a public disk, all network systems have access to the files.
- For more information on ACI, see the PowerView *Options Manual* and the MCS *Options Training Manual.*

Multiple Search and Translate

Multiple Search and Translate comes as part of ACI, or you can purchase it separately. Multiple Search and Translate can be a public or private network resource. In either case, the resource name is **TR**. If Multiple Search and Translate is a public resource, you can translate files from any public disk drive on the network.

► If you have Multiple Search and Translate on your network because you also have ACI, it is recommended that you include Multiple Search and Translate on the system that has the most available memory. Make it a public resource so every other network system can use it.

► If you have Multiple Search and Translate on your network because you purchased it as a separate option, it is recommended that you include it on the system that has the most available memory. Make it a public resource so every other network system can use it.

For more information on Multiple Search and Translate, see the PowerView *Options Manual* and the MCS *Options Training Manual.*

Exception Dictionary

Each CG Network system can load and use its own exception dictionary. Because of this, satellite systems do not have to rely on the Production Control System's having the proper dictionary loaded while they are composing files.

Be careful when you queue files from a network system to a public output device. The controller attached to that output device must have the matching exception dictionary in memory (especially if the queued files contain **Dictionary Lock** commands). If the exception dictionaries do not match, the files may not have the correct hyphenation and justification.

For more information on exception dictionaries and the Enhanced Hyphenation Option, see the PowerView *Options Manual* and the MCS *Options Training Manual.*

Power Page

The Background Compose Option and format files are two elements of the Power Page Option that are affected by the CG Network.

Background Compose

You can have the Background Compose Option on your network only if you have purchased Power Page. The option can be a public or private resource.

You assign the resource name for Background Compose when you create a system's user program with the *System Generator Utility*. Public Background Compose can have the resource names **B1** through **B9**. Private Background Compose uses the resource name **B9**.

If Background Compose is a public resource, you can perform the background composition of files (background paging) from any public disk drive on the network.

It is recommended that you make Background Compose public at the network system that has the most available memory. You might consider putting the public Background Compose on the network system that is configured to work with the most-often-used output device. This is because Background Compose uses the background composition table of the network's primary output device (see page C-7).

If your network uses more than one *type* of output device, you might consider putting public Background Compose Options on the network systems where the different output devices are attached. In this way, the Background Compose Options at those systems can use the background composition tables of those output devices.

Format Files

- You can store Power Page format files in three different locations:
  - — On the Production Control System's public hard disk **H1**.
  - — On a private left floppy disk drive **F1**.
  - — On the same disk as the text file, regardless of the disk drive's resource name.
- A PowerView format file can contain 2,000, 8,000 or 16,000 characters. You choose the value when you create the PowerView's user program. An MCS format file can contain 2,000 characters; you cannot choose a different value.
- A PowerView can load more than one format file into a text file; an MCS cannot.

Other Power Page Features

- A PowerView can have up to 30 linked compartments; an MCS can have up to 10.
- You can buy the Composition Programming Language (CPL) for your network PowerView(s). CPL uses special formats and format definitions. An MCS cannot use CPL.

Because of the differences in PowerView and MCS Power Page capabilities, you should be careful if you want to work on a PowerView Power Page file at an MCS. The files and the codes in the files may not be compatible.

For more information on the Power Page Option, see the PowerView and MCS *Power Page Applications Manual(s)*.

Other Daily Operations Features

Copy File—You can copy files across the network to and from any public disk drive. Except for track-by-track copying, all modes, wildcard features, and file extensions are available. You cannot do a track-by-track copy across the network.

Move File—You can move files across the network to and from any public disk drive. Except for track-by-track moving, all modes, wildcard features, and file extensions are available. You cannot do a track-by-track move across the network.

Delete File—You can delete files across the network from any public disk drive. All modes and wildcard features are available.

Erase/Format Disk—You cannot erase/format floppy disks across the network. You can use the SYS CMD **e d s k** command on *local* floppy disk drives only.

Chapter D:
PC on CG Network

Introduction

IBM PC on CG Network

The CG Network works with IBM Personal Computers (PCs) as well as with PowerViews and MCSs. All public resources on a CG Network are available to any PC workstation. However, any PC is private—no other workstation has access to a PC resource.

A PC can interact with *public* network resources in the following ways. It can:

- Copy files (PC to network and network to PC).
- Delete files.
- Display files or access files through many word processors.
- Execute DOS file and directory commands.
- Typeset files.
- Use the Background Compose and Multiple Search and Translate functions.

Note: All interaction between the PC and the network is controlled through the PC. You cannot gain access to PC files from a PowerView or MCS.

Since the PC operates in DOS (*Disk Operating System*), the network must translate PC files before the MCS or PowerView can use them.

You can translate files *on-line* (as they are being transferred between the PC and the network), or *off-line* (after they have come to the PC). Use the system's default translation tables or create your own.

What You Need

To run the PC on the CG Network, you need:

- An IBM PC, XT, or AT, with;
  - ► DOS version 3.1 or higher.
  - ► 256K of Random Access Memory (128K above standard).
  - ► at least two floppy disk drives, or one floppy disk drive and a hard disk.
- CG Network software on the PowerView (version 3.0 or higher or MCS (Series H or higher).

Components

The PC on the CG Network includes the following:

- A 13½-inch *interface board*, which you install in your PC.
- A coaxial Local Area Network (LAN) *cable*, which connects the PowerView or MCS with the PC.
- A BNC *T-Connector* with a *Terminator*, which you will put on the LAN cable;
- A 5¼-inch DOS-formatted floppy disk containing the *CG Network software for the PC.*
- A DOS floppy disk with *translation tables.*
- This *CG Network Manual.*
- A DOS floppy disk containing *Diagnostic Tests.*

Before You Begin

- Read the preceding chapters of this manual, so that you understand CG Network functions.
- Install the board in the PC (read *Appendix A: Installation Instructions*).

What This Chapter Covers

This chapter of the *CG Network Manual* teaches you how to use the PC on the CG Network.

- The **Typical Uses** section introduces you to using the PC on the CG Network by giving you an example to work through.
- The **DOS Commands** section is a primer on DOS commands and how they work in the CG Network environment.
- The **Using Remote Resources** section explains how the PC uses the resources of the CG Network (output devices, Background Compose, disk drives).
- The **Translation** section describes the translation tables that enable DOS files to be used by the network, and network files to be used by the PC. It tells how to translate files and how to create or customize existing translation tables.

Typical Uses

You can use the PC on the network in the following ways:

Typical Use #1: You *keystroke text* into a word processor on your PC. You copy the file to the network. Then you add typesetting codes and output the file.

Typical Use #2: You create and compose files on your PC, using the *PTS Composer.* You can output the files on an output device attached to the network.

Typical Use #3: To save disk space on your PC, you *archive files* on a network hard disk. You copy files to the network as DOS files.

Note: Pure text files, without typesetting codes, are easiest to work with. You need to develop translation tables to handle jobs that contain typesetting codes.

Exercise

This exercise shows you how to copy a word processed file from your PC to a network disk drive, then typeset it.

1. Turn on your PC and your other network systems. For MCS and PowerView startup procedures, see **Chapter C: Daily Operations.**
2. On the PC, load the network program.

   cgnet [RETURN]

3. Create a file named **jones.tc** with the word processor on your PC. (Follow the usual procedure for your word processor, using your word processor manual.)
4. Load the translation table by typing this command on your PC:

   cgtrload gp-in.tbl gp-out.tbl [RETURN]

5. Copy the file to the first public hard disk on your network.

   copy jones.tc d: [RETURN]

   The translation occurs automatically.
6. Call the *Remote Devices Menu.*

   cgdev [RETURN]

7. Display the available devices: Press [F9].
8. Display the directory of the first network hard disk drive: Press [F8] then type **d:** [RETURN]. The file **JONES** will appear, with a **TC** extension. (Notice that it is capitalized.)
9. Go to an MCS or PowerView workstation on the network. Edit the **JONES** file. Insert typesetting codes and compose the file.
10. Go back to your PC. At the *Remote Devices Menu* still on the screen, queue your file to your output device: Press the [F4] function key and type **d:jones.tc** [RETURN].
11. Display the queue: Press [F5].

The file will typeset.

Note: The letter for the hard disk drive (**d:**) may vary, depending on your configuration. Look at page D-3, **PC—Network Interaction.**

PC-Network Interaction

PC Names for Network Disk Drives

The CG Network assigns alphanumeric resource names to floppy disk drives (**F1**, **F2**, . . . **F9**) and to hard disk drives (**H1**, **H2**, . . . **H9**).

The IBM PC assigns letters to floppy disk drives (**A**, **B**, . . .) and to hard disk drives (**C**, **D**, . . .).

If your PC has *one or two floppy drives*, they are drives **A** and **B**. Your first PC hard disk drive is **C**. If your PC has *three or four floppy drives*, they are drives **A**, **B**, **C**, and **D**. Your first PC hard disk drive is **E**.

The next *nine* letters are reserved for the network's hard disk drives (regardless of how many the network has). The next *nine* letters after that are reserved for the network's floppy disk drives.

The PC always allots nine letters to the network hard disk drives and nine letters to the floppy disk drives, even if the network has fewer than nine of each type of disk drive.

THE LETTERING SEQUENCE

PC Floppy Drives	PC Hard Drives	Network Hard Drives (9)	Network Floppy Drives (9)
The first 2 or 4 letters	The next available letters	The next nine letters	The next nine letters

Displaying Your Resources

To display the names your system gives your disk drives:

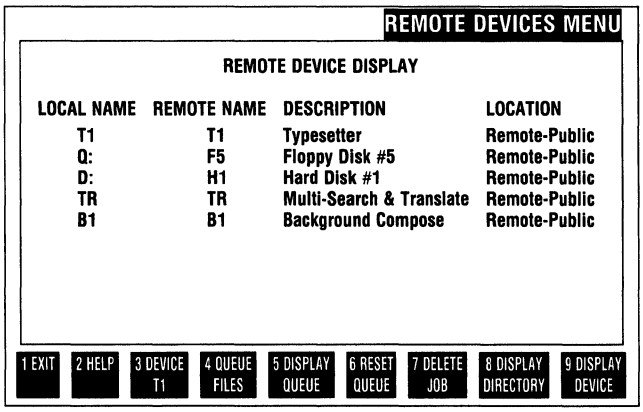
1. At the system prompt, enter the network. Type:

   cgnet RETURN

2. Display the *Remote Devices Menu*.

   cgdev RETURN

3. When the *Remote Devices Menu* appears, press F9 to display the devices.



Look at the chart below to see how the PC letters the disk drives on your network:

PC	Network Hard Disks	Network Floppy Disks
A B C	H1 H2 H3 H4 H5 H6 H7 H8 H9	F1 F2 F3 F4 F5 F6 F7 F8 F9
A B C	D E F G H I J K L	M N O P Q R S T U

PC Disk Drive References

If your PC has more than three floppy disk drives and hard disk drives (**A**, **B** and **C**), slide the top line (**H1**–**H9** and **F1**–**F9**) to the right by the number of extra PC drives. Remember to allot nine letters for both hard disks and floppy disks, even if you do not use them all.

Example: Network drive **H1** is PC drive **D**. To log on to network hard disk drive **H1**, type **d:** RETURN.

Private Disk Drives

Private disk drives—those which the PC and other workstations cannot access—still take up a letter on the PC alignment. The private disk drives do not appear on the resource table (see page D-11).

Example: Even if floppy disk drives **F1** and **F2** on the network are private, they would be drives **M** and **N** on the PC, and floppy disk drive **F3** would appear on the resource table as drive **O**.

Note: PC disk drives are remote-private resources to the network. Network MCSs and PowerViews cannot gain access to the PC disk drives.

DOS Commands

This is a review of some of the DOS commands that apply to a PC on the network. For a full guide to DOS commands, read your *DOS Users Manual.*

Note: DOS commands and programs cannot be executed from a network MCS or PowerView.

Entering the Network

You must enter the network before you gain access to any network resources. Type:

c g n e t [RETURN]

Logging On

Logging on gives you access to all the files on a disk drive. You can log onto any public network disk drive.

To log onto a network disk drive, type the disk drive *letter,* then a colon, and press [RETURN].

For example: To log onto drive **D** (network drive **H1** in the configuration on the previous page), type:

d : [RETURN]

Note: You can gain access to network files without logging off the PC drive. For instance, to display a directory of files on drive **D** (with the **DIR** command), type:

d i r d : [RETURN]

Upper-case/Lower-case

DOS commands are not case-sensitive; You can log onto drive **D** by typing **D :** or **d :**. However, a file you copy to a network disk appears in upper-case letters.

Filenames

All filenames and subindex names on a network disk drive must be uppercase and no more than eight characters for the PC to use them. A PC will not call up a network file that has a lowercase name.

PC filenames are limited to eight characters, with a three-character extension. Network filenames can be up to 12 characters long. The PC will not copy or access any network file longer than eight characters.

DIR (Directory)

The **DIR** command displays the filenames of all files stored on any public disk in the network.

Similar MCS command: [DISP] **d i** [EXECUTE]

To display an index of your present disk, type:

d i r [RETURN]

```
D:\> dir
  Volume in drive D is ONE
 Directory of D:>
   CGSPY    TC       18000     11-11-87    1:37pm
   CGNET    TC      123000     11-11-87    1:58pm
   CGDEV    TC       24000     11-11-87    2:12pm
   CGDEV    TC        3000     11-11-87    2:54pm
   CGDEV    TC        6000     11-11-87    2:56pm
   CGDUMP   TC        6000     11-11-87    3:20pm
       6 File(s)     3129344 bytes free
D:\>
```

To display the directory of a disk which you are not logged onto, type the disk drive *letter* after the **DIR** command.

d i r d : [RETURN]

This displays the filename and the size (number of records) of each file, along with its creation date.

Note: The PC estimates the size of network TC files; each page is 6K.

To display a wide directory, type:

d i r / w [RETURN]

```
D:\> dir/w

CGSPY  TC      CGNET  TC      CGDEV  TC      CGDEV  TC
CGDEV  TC      CGDUMP  TC


6 File(s)     3129344 bytes free
D:\>
```

This displays just the filenames, without the size or creation dates.

COPY

The **COPY** command copies a file from one disk drive to another.

Similar MCS command: SYS CMD **C O P F** EXECUTE

This copies **jones** from PC drive **A** to network drive **M**:

```
copy a:jones m:
```

This copies **jones** from network drive **M** to PC drive **C**:

```
copy m:jones c:
```

Note: You can be logged onto any disk when you copy files.

Storing Files on a Network Disk Drive

You can store PC files on a network disk drive in one of two ways: as a *MCS text file,* which the other network workstations can access; or as a *DOS file,* accessible only by a PC (even though the file resides on a PowerView or MCS disk).

Storing DOS files on a network disk drive gives you more room on your PC.

An MCS text file:

- Is copied with a PC extension of **.TC**.
- Is translated (via user-defined translation tables—see the **Translation** section).
- Is stored on the network with a **TC** extension.
- Can be called up by any workstation.

A DOS file:

- Is copied with a PC extension *other than* **.TC**.
- Is *not* translated.
- Is stored on the network with an **RT** extension.
- Can be called up *only by a PC* workstation.

A DOS (**RT**) file is kept on the network solely for storage. An MCS or PowerView cannot use it. Only a PC (any PC) can gain access to it.

Note: The Disk Recovery Utility does not recognize an **RT** file. Always back up these files on your PC before running the DRU.

Copying a DOS File

To copy a DOS (PC-only) file:

1. A translation table *need not* be loaded.
2. For this example, copy the file to the network floppy drive **F1** (if you have drive **F1**):

   ```
   copy a:jack.one o:
   ```
   RETURN

3. Go to a network MCS or PowerView workstation and display the index of **F1**:

   DISP **d i f 1** EXECUTE

```
Filename    Ex   Sz
JACK.ONE    RT   001
```

Notice that the file you copied has an extension of **RT**.

Copying a Text File

To copy a text file (that non-PC devices can read):

1. Load the translation table for your system.

   ```
   cgtrload gp-in.tbl gp-out.tbl
   ```
   RETURN

2. Copy the file to the network floppy drive **F1**, adding an extension of **.tc** on the *destination* filename:

   ```
   copy a:jones.one m:jones.tc
   ```
   RETURN

3. On a network MCS or PowerView, display the index of the disk drive:

   DISP **d i** EXECUTE

```
Filename    Ex   Sz
JONES       TC   001
```

Notice that the file **JONES** appears in the network directory with an extension of **TC**.

TYPE (Display File)

The PC allows you to display a file on the screen. This lets you see—but not edit—a file. You cannot make changes in the file.

Similar MCS command: SEC FILE | CALL PAGE | EXECUTE

To see a file, type the word **type**, followed by the filename.

type jones RETURN

The file will scroll onto the screen. You can stop it by pressing Ctrl and **s**. Press any key to resume scrolling.

Wildcards

You can access more than one file at a time, using asterisk *wildcards*.

Use wildcards in copying files, deleting files, or displaying directories of files.

An asterisk can take the place of any number of characters. For instance, **TMP.*** calls all files that have a first name of **TMP**. The phrase ***.TMP** calls all files that have an extension of **.TMP**.

This command:	*Will access:*
dir a:tmp.*	**tmp.one** **tmp.2** **tmp.**
del a:*.tmp d:	**wildcard.tmp** **2.tmp** **.tmp**
copy a:*.* d:	*All files*

Editing Files with a Word Processor

With most DOS-compatible word processors, you can edit files that reside on your network disk drives.

Your word processor can gain access to files on a network disk drive either by setting a path to the word processing program, or by designating the drive location along with the filename when you call the file.

Restrictions: Your word processor will work if the file it creates is a string of linear characters, obeys the standard DOS conventions, and does not randomly access the file.

To set a path to your word processor:

A path forces the PC to look at a specified drive for your word processor. Then log on to your network drive, and call up your word processor. Type:

path c:	*to set the path to drive C.*

Then type:

d:	*to log on to drive D.*

Then type:

[wp command]	*loads word processor.*

To designate drive location:

When you call the file from your word processor, you can precede the filename with the letter of the disk drive which contains the file.

The PTS-Composer, as an example, asks you to enter a filename after the *Edit/Compose* screen appears. At the **Initialize Input File–Output File:** prompt, type:

d:jones.tc RETURN

This calls the file from drive **D**.

Directories

Like an MCS or PowerView hard disk, a PC hard disk or floppy disk can be divided into subdirectories (subindexes). You can create subdirectories, copy files to these subdirectories, or remove them. You can use subdirectories on the PC and on other network MCSs or PowerViews.

Creating Subdirectories

This command creates a subdirectory on an MCS or PowerView hard disk, or on a PC disk.

MCS or PowerView hard disk subindex names can have 1—4 characters.

Similar MCS command: SYS CMD **C R S I** EXECUTE

The **MD** command creates a subdirectory. This command created subdirectory **sub1**:

m d d : s u b 1 RETURN

Changing Subdirectories

To gain access to a file that is in a subdirectory, the PC must move to the file's subdirectory. You do that with the **cd** command.

This command would change your access from the root (main) directory to the **sub1** subdirectory.

c d d : s u b 1 RETURN

Removing Subdirectories

The **rd** command removes, or deletes, a subdirectory.

Similar MCS command: SYS CMD **D L S I** EXECUTE

This command would remove the **sub1** subdirectory:

r d d : s u b 1 RETURN

A subdirectory must be empty before you remove it.

DOS Programs on Network Disk Drives

You can store DOS programs on a network disk drive. Then you can call up the DOS program on the MCS or PowerView, while saving space on your PC disk.

For instance, if you stored the Personal Typography System (PTS) on your network hard disk, you could call it up from the PC:

d : p t s RETURN

Using Remote Resources

A PC can use any public resource of the CG Network:

- Output device
- Multiple Search and Translate
- Background Compose
- Floppy and hard disk drives

The **cgdev** command displays the available resources, and makes them accessible to you.

Entering the Network

You must always use the **cgnet** command to enter the network from the PC. If you reboot or turn off your PC, you must type the command again:

c g n e t RETURN

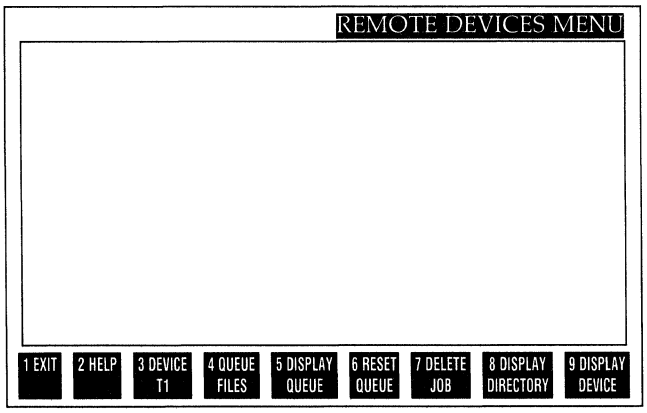
Note: You cannot boot the PC from another network device. You must boot the PC from itself.

The CGDEV Command

The **cgdev** command calls the *Remote Devices Menu* to the screen.

To call the *Remote Devices Menu* to the screen, type:

c g d e v RETURN



The *Remote Devices Menu* contains the following functions:

- **F1 EXIT.**
  Takes you out of the *Remote Devices Menu* and back to DOS (where you type commands). Use this command when you have finished with this menu.
- **F2 HELP.**
  Displays a *Help Screen*, which contains brief descriptions of all the functions in the *Remote Devices Menu*.
- **F3 DEVICE.**
  Selects the device you want to queue to (output device, Multiple Search and Translate, or Background Compose).
- **F4 QUEUE FILES.**
  Sends files to the selected device.
- **F5 DISPLAY QUEUE.**
  Displays on the screen a list of the files that are being sent to the selected device, and their status.
- **F6 RESET QUEUE.**
  Resets the selected device, removing all files from the queue.
- **F7 DELETE JOB.**
  Removes a job from the queue *provided it has not started to process.*
- **F8 DISPLAY DIRECTORY.**
  Displays a list of files in the directory of your current disk.
- **F9 DISPLAY DEVICES.**
  Displays a list of the resources available at your PC on the network.

The Functions

F1 EXIT

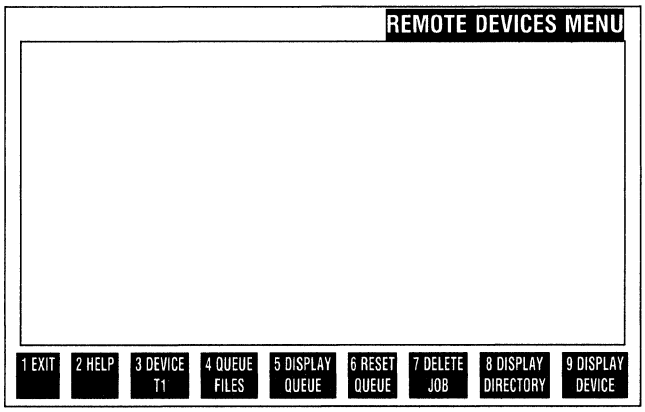
This function moves the system out of the *Remote Devices Menu* and into DOS.

Press [F1]. The *Remote Devices Menu* disappears. In its place, the DOS screen prompt appears.

F2 HELP

This function displays a brief description of the choices on the *Remote Devices Menu.*

Press [F2] to call the *Help Screen.*



F3 DEVICE

This function selects the device to which you to queue files.

Press [F3]. The device listed in the **F3** box will toggle to another choice.

You can choose an output device (**T1—T9**), Background Compose (**B1—B9**, or Multiple Search and Translate (**TR**).

F4 QUEUE FILES

This function sends files to the selected device.

Similar MCS command: [QUEUE] **[t 1, b 1, t r]** [EXECUTE]

Press [F4]. This prompt appears:

Enter source file name ([d:][path]name[.ext])

Type the name of the file you are queuing and press [RETURN]. This prompt appears:

Job priority (1-7):

Press [RETURN] unless you want to start the job before others already in the queue. To re-prioritize, type a number lower than seven, and press [RETURN].

The system prompts you for the appropriate parameters, depending on your output device.

When you have entered all the filenames, press [RETURN]
at the next **Enter source file** prompt.

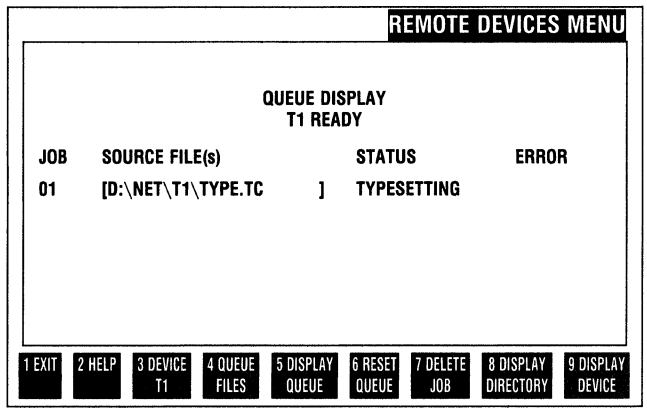
Note: See the **Configuration Table** section for notes on choosing your output device.

F5 DISPLAY QUEUE

This function displays the files that are being processed by the selected device. It shows the status of each job that you queued with function **F4**.

Similar MCS command: [DISP] **[t 1, b 1, t r]** [EXECUTE]

Press [F5]. The queue displays:



F6 RESET QUEUE

This function removes all jobs in the selected queue *even if they have started processing* (see **Delete Job**) and clears the selected device queue.

Similar MCS command: SYS CMD **r e s** EXECUTE

Press F6. The queue resets. If you display the queue now (F5 **Display Queue**) you will see it contains no files.

F7 DELETE JOB

This function removes a single job from the queue of the selected device.

Note: This function does not remove a job already in progress, only jobs that are waiting in the queue.

Similar MCS command: SYS CMD **d j o b** EXECUTE

Before you delete a job, display the queue to see the job numbers and status. (See F5 **Display Queue.**)

Press F7. This prompt appears:

Enter job number:

Type the number of the job you are deleting, and press RETURN.

The job no longer appears in the queue display.

F8 DISPLAY DIRECTORY

This function displays a list of files on the disk on which you are logged. (See the DOS command **DIR**, page D-4.)

Similar MCS command: DISP **d i** EXECUTE

Press F8. This prompt appears:

Enter directory name ([d:][path]name[.ext])

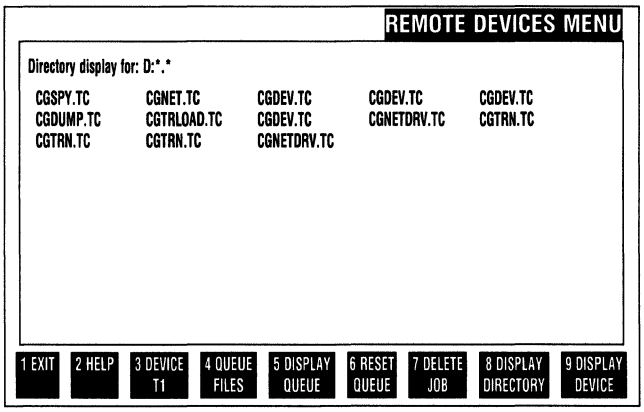
If you want to display the directory of your current disk and subindex, press RETURN.

If you want to display the directory of another disk or subindex, type the disk drive (followed by a colon) and the subindex (preceded by a *backslash*). For example, typing this would display the **TEMP** subdirectory on drive **D**:

D:\TEMP RETURN

Remember to type the names of subindexes in uppercase letters.

A directory of filenames appears.



You can go on to use any function on the menu now.

Note: You cannot use wildcards to display specific groups of files. You must display the entire disk or subdirectory.

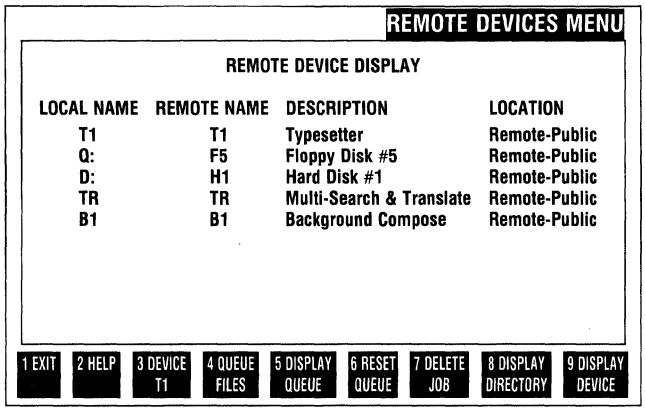
If the directory fills the entire screen, and the directory contains more files, press PgUp to see the other files, or press Esc to exit the screen.

F9 DISPLAY DEVICES

This function displays the public network resources available to the PC.

Similar MCS command: DISP **r t** EXECUTE

Press F9. The public resources (disk drives, output devices, Background Compose, and Multiple Search and Translate) appear on the screen.



Changing the Configuration

The configuration file contains descriptions of the output devices attached to your network. The entries in this file determine the prompts for outputting.

The configuration file is called **cgdev.cfg**. You can display the configuration file with the **type** command:

t y p e c g d e v . c f g RETURN

The file will appear on your screen:

```
C:\> type cgdev.cfg
T1    8000
T2    8200
T3    8400
T4    8600
T5    EP308
T6    9600
T7    P400
T8
T9
TY
```

You can change the output devices by editing the configuration file in a word processor. Call up the **cgdev.cfg** file and change the appropriate line.

Translation

The PC on the CG Network comes with a translation capability. This enables you to translate files either before or during their transfer between a PC and a PowerView or an MCS workstation.

Note: The CG Network can translate only files which use the American Standard Code for Information Interchange (ASCII).

Why You Translate

Translation changes word processing commands into codes that the network can convert to MCS codes.

Each word processor or text-handling system uses different commands to assemble text, such as line endings (returns), tabs, boldface or underlining. Word processing commands are not recognized by the MCS and instead are represented on the MCS or PowerView by alphanumeric codes.

For example: a file input using XYWrite would not, when communicated without translation to an MCS or PowerView, have returns where they had been entered in the original file. Instead there would be the figures □¶ *wherever a return had been entered in the original XYWrite file.* See the "MCS Code Chart" on page D-21 of this chapter.

Word processors also use codes that are not allowed in an MCS terminal.

For example, a word processor may use spaces to center a line or create tabs. The MCS does not allow more than one spaceband consecutively. Any file sent to the MCS containing multiple spacebands needs to be either translated into an MCS **TAB** *command or into one fixed space (*em*).*

When the CG Network translates a file, it can change ASCII codes to MCS codes. Conversely, when you transfer a file from the MCS to a PC, MCS typesetting commands must either be removed or translated into commands that are compatible with the PC program.

Translation Tables

To translate, you run a file through a *translation table.* Each translation table has a series of equations, with a search (left) side and a replace (right) side. The table looks for the code on the left. If it sees the code, the table translates it into the code on the right. The codes used in translation tables are not entered as normal text characters. Instead, these equations are entered in Hex codes which signify word processing commands that are not usually visible on the PC screen.

A Translation Example

This is an example of a typical word processing file before translation.

Owner's Manual

Please read this Owner's Manual carefully before you try anything with your equipment. Start with the section entitled 'Read Me First.'

In this section you will find general information about this product.

Notice the following:

- *Spaces* are translated in several ways. One space simply remains one space. Two to five spaces are usually input as a paragraph indent and therefore translate to an EM space. More than five spaces automatically translate to a tab command because that is how tabs are positioned in a word processed document.
- *Single returns* are translated to a space because line endings, when the text is typeset, do not necessarily match the line endings input on the PC.
- *Double returns* are translated into Quad Left, Tab Return, Plus Linespace because PC operators usually type two returns at the end of a paragraph. Paragraph endings should be preserved when transferring text from one machine to another.
- The *quote mark* (') is translated to double quotes (" and ").

After translation, the file would look much like this (at a PowerView or MCS work station):

```
Owner's Manual←
<PLS>□ Please read this Owner's Manual carefully
before you try anything with your equipment. Start with
the section entitled "Read Me First."←
<PLS>□ In this section you will find general information
about this product.←
<PLS>
```

The command translations shown on the previous page are already present in the general purpose translation table (**gp-out.tbl**) included in your network option. You may change or delete these entries or create others to customize the table to suit your production needs. For information about customizing translation tables see the **Editing Translation Tables** section of this chapter.

Two Ways of Translation

You can translate using one of two methods: *on-line* or *off-line*.

On-Line (Background) Translation

Using on-line translation, any file with a **TC** extension that is transferred to or from the PC is automatically translated by means of tables selected by the PC operator. When you copy a file to the MCS or PowerView, or call up a file from a network disk drive onto the PC, the translation table translates the file in the background (as you copy the file).

Loading a Background Translation Table

To load a translation table in the background, use the **cgtrload** command.

c g t r l o a d [mcstable] [pctable] RETURN

- The first table (**mcstable**) is the table that translates files from the MCS or PowerView to the PC.
- The second table (**pctable**) translates files going the other way, from the PC to the MCS or PowerView.

The table translates automatically.

For example, this would load two tables: **gp-in.tbl** translates files going from the MCS/PowerView to the PC; **gp-out.tbl** translates files going from the PC to the MCS/PowerView.

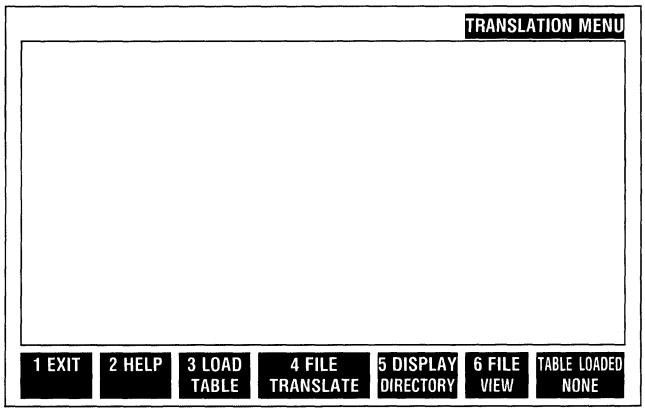
c g t r l o a d g p - i n . t b l g p - o u t . t b l RETURN

Off-line (Using the *Translation Menu*)

You can also translate files that reside on the PC without actually transferring them to another network disk drive. To do this, use the **cgtrn** command and the *Translation Menu*.

To call the *Translation Menu* to the screen, type:

c g t r n RETURN



The *Translation Menu* contains the following functions:

- **F1–EXIT**. Brings you out of the *Translation Menu* back to the Disk Operating System (DOS). Use this function when you have finished with this menu.
- **F2–HELP**. Displays a *Help Screen*, which contains brief descriptions of all the functions in the *Translation Menu*.
- **F3–LOAD TABLE**. Loads a translation table. Do this before translating.
- **F4–FILE TRANSLATE**. Translates a file, once a table is loaded.
- **F5–DISPLAY DIRECTORY**. Displays a list of files in your current directory or disk drive.
- **F6–FILE VIEW**. Displays a file on the screen. This is helpful for checking translated files.

The Translation Process—Off-line

To translate a file, you do this:

1. Load a translation table (unless the appropriate table is already loaded).
2. Translate the file.

Step One: Load a Translation Table

To load a translation table:

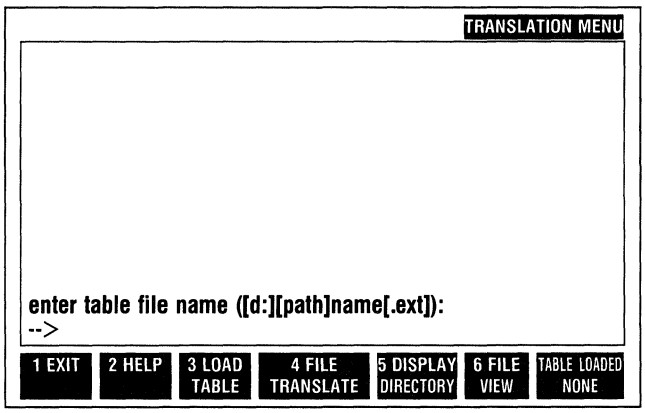
1. At the DOS system prompt, type:

   c g t r n [RETURN]

   The *Translation Menu* appears.

2. In the *Translation Menu,* press [F3] (**Load Table**).

   A screen prompt appears:



3. Type the name of the table (all tables have a **.tbl** extension) and press [RETURN] to load the table. The message **table file read completed** appears. Now you can translate files.

Note: If you do not know the name of the table you want to load, press [F5] (**Display Directory**). The directory appears. Note the name of the table, press [Esc], then [F3] (**Load table**) and type the name of the table after the prompt appears.

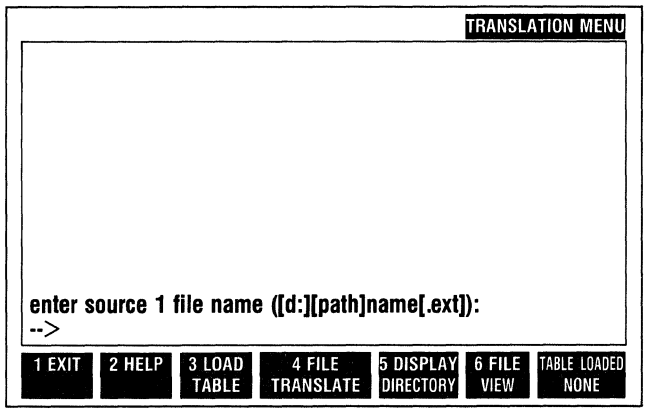
Step Two: Translating a File

Before you translate a file, make sure you have loaded a translation table (with Function F3, **Load Table**) .

Note: The **cgtrload** command does not load tables for Off-line translation. Also, a table loaded with the *Translation Menu* does not load tables for On Line translation.

1. In the *Translation Menu,* press F4 (**File Translate**).

   A screen prompt appears:



2. Type the name of the file you want to translate and press [RETURN].
3. At the **destination 1 file name** prompt enter the name you want to give the translated file and press [RETURN]. If you do not want to translate any other files at this time, press [RETURN] again. Your screen displays the status of the translation process.

Other *Translation Menu* Features

You can also display the directory to which you are assigned (**Display Directory**) or a file (**File View**) with the *Translation Menu*.

Display Directory

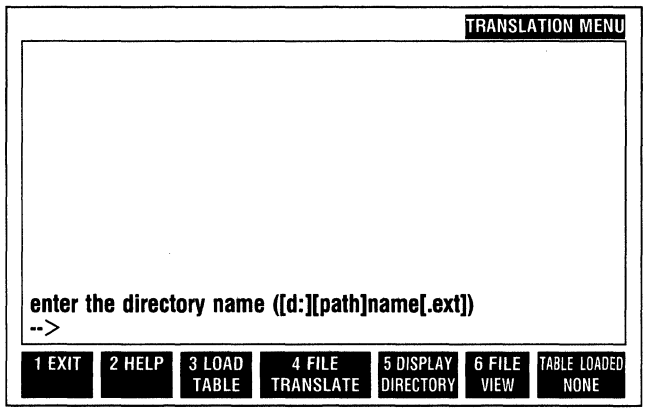
To display the directory of your current disk or the sub-directory of the hard disk to which you are assigned:

1. Call the *Translation Menu* if it is not already on the screen.

   c g t r n [RETURN]

2. In the *Translation Menu*, press [F5] (**Display Directory**).

3. A screen prompt appears:



4. If you want to access the directory of the drive you are currently assigned to, simply press [RETURN]. Otherwise type in the appropriate directory name and press [RETURN]. A directory of the files contained on your current disk drive or directory appears.

Note: To access other *Translation Menu* functions when a directory is on your screen, press [Esc] and then the Function key.

File View

This function allows you to view a file on the PC; you cannot edit a file with *File View*.

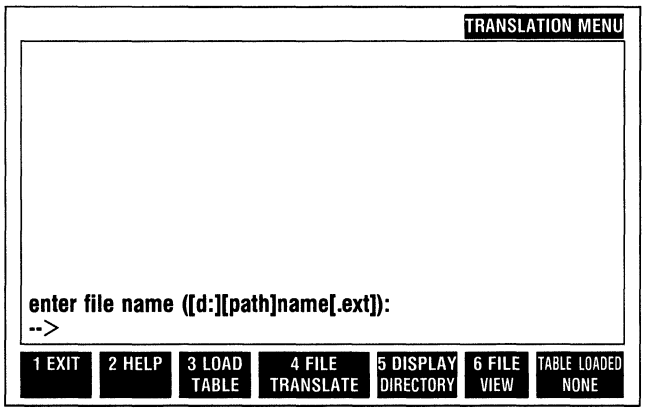
To view a file on the PC:

1. Call the *Translation Menu* if it is not already on the screen.

   c g t r n [RETURN]

2. In the *Translation Menu*, press [F6] (**File View**).

   A screen prompt appears:



3. Type the name of the file you want to look at and press [RETURN].
   - The first screen of your file appears.
   - Hit any key to view the next screen.
   - Hit [ESC] to exit **File View.**

Editing Translation Tables

The PC on the CG Network comes with two translation tables (**gp-in.tbl**, **gp-out.tbl**, and **exam.tbl**). They are on a DOS floppy disk, labeled (**PC to CG NETWORK TRANSLATION TABLES**) which you installed in the **Setup** section. The General Purpose table may work for your word processing program without any modifications, or you may customize it by modifying or adding entries.

Why You Would Edit Translation Tables

First of all, the General Purpose table may not translate all word processing commands in all word processing software packages. For this reason it may be necessary to edit the General Purpose table to translate particular codes not currently included.

For example, you may find extraneous characters such as nonsense letters and numbers embedded in the text of a file after it has been translated with the General Purpose table. The presence of such characters could mean that some word processing commands are present in the PC document that are not included in the General Purpose table.

You can, through a series of steps that are outlined in the section of this chapter titled **Troubleshooting Translation Problems**, add or modify entries on the table to eliminate or translate these commands.

Another reason you may edit the General Purpose table is to customize it for your company's typesetting needs.

For example, a return in a document file is usually translated into a space to provide for the rejustification of text based on the typesetting parameters. If your company is producing a publication that is primarily flush left (rag right) you may want to change the translation table entry affecting single returns so that it translates **every** *return to* **Quad Left/Return**. *This preserves the line endings as they were entered in the original document.*

Translation Table Syntax and Codes

Translation table entries are written as equations. The translation function searches for information on the left side of the equation, and replaces it with information on the right side.

Translation Code Structure

Every line in a translation table must contain the following:

-;	**Opening delimiter:** Hyphen and semi-colon start each line.
#	**Hex indicator:** Pound marks go before and after each *hexadecimal* character.
;	**Separator:** A semi-colon goes between the *search string* and the *replace string.*
;-	**Closing delimiter:** A semi-colon and hyphen end each statment.

The following is a typical translation table entry:

-;#0d##0a##0d##0a#;#d4##c4##d6#PLS#d8#;-

This entry searches for two consecutive returns (hex code **#0d##0a**) and replaces them with a quad left (**#d4**) and tab return (**#c4#**), followed by a <PLS> command (**#d6#PLS#d8#**).

The opening delimiter (-;) starts the string. The closing delimiter (;-) ends the string. *Opening and closing delimiters must be present at the beginning and end of every translation string.*

The translator searches for the characters between the delimiter and the separator (;). It replaces that string with the characters between the separator and the closing delimiter.

To search for or replace a semi-colon, hyphen, or colon, use a colon before the character. For example:

:; or :- or ::

Hexadecimal Codes

Many translation table entries translate commands which, although present in a word processing file, are not visible to you. These invisible commands are called *transparent*. Translation strings which address these commands must use *hexadecimal* codes because the MCS or PowerView keyboard may not have comparable commands.

You can find hexadecimal codes for word processing commands by checking the ASCII code chart on page D-20. These codes are used on the search side of the translation entry.

Hexadecimal codes for MCS or PowerView commands can be found on the MCS code chart on page D-21. These codes are used to refer to MCS or PowerView commands on the replace side of the entry.

-;#0d##0a##0d##0a#;#d4##c4##d6#PLS#d8#;-

Hexadecimal codes consist of two characters. In the example above and on page **D-16**, **0d** is the hexadecimal code for a carriage return in a word processing document. The code **0a** is the hexadecimal code for a line feed. The code **d4** is the MCS hexadecimal code for a **Quad Left** command, **c4** is the MCS hex code for a **Tab Return**, **d6** is the MCS hex code for a **Type Command On** bracket (<), and **d8** is the MCS hex code for a **Type Command Off** bracket (>).

A pound symbol (#) must be entered on both sides of each hexadecimal code to distinguish these characters from normal letters and numbers such as the **PLS** on the replace side of this entry.

Advanced Translation Functions

The PC on the CG Network has a powerful translation capability. In order to shorten the length of the tables, use *advanced translation functions*. These functions eliminate the need to write separate entries for every variation of similiar search strings. For example, if you want to search for 1980, 1981, 1982, 1983, 1984, 1985, 1987, 1988, and 1989 in order to replace all of these dates with 1986, you would *not* need to write separate entries for each of the dates that you wish to search. Instead, through the use of a *wildcard*, one entry would suffice for this translation. The entry would read as follows:

-; 198? ; 1986 ;-

The question mark is a wildcard which signifies that *any* character in that position qualifies for the search and replace.

Note: If you want to actually search for a question mark, you must escape its wildcard function by preceding it with a colon.

The other advanced translation functions are listed below with sample entries and explanations of each function and it's role in the entry.

- **Range Statement { }** **-; 198{04} ; 1986 ;-**
  This function enables you to search for several variations of a search string at once. This entry states: search for a space, followed by 198, followed by **any number from 0 to 4** followed by a space and replace with a space, followed by 1986, followed by a space. In other words, 1980, 1981, 1982, 1983, and 1984 are *all* replaced with 1986. In this example the *range* of numbers from 0 to 4 qualifies for the search. The range statement can search for numbers 0 to 9 ({09}) or alphabetical ranges from A to Z. Alphabetical ranges must be uppercase ({AZ}) or lowercase ({az}) specific.

- **Or Statement** [ ] **-; 198[35] ; 1986 ;-**
  This function enables you to search only specific characters which might not be in numerical or alphabetical sequence. The entry above reads: search for a space followed by 198, followed by **either a 3 or a 5**, followed by a space, and replace with a space followed by 1986 followed by a space. This entry would translate 1983 and 1985 to 1986. It would **not** translate 1980, 1981, 1984, 1986, 1987, 1988, or 1989.

- **Nor Statement** [!] **-; 198[!5] ; 1986 ;-**
  The nor statement enables you to exclude characters from an otherwise open ended search string. In the example above, the entry reads: look for a space, followed by 198, followed by any character **except a 5**, followed by a space and replace with a space followed by 1986, followed by a space. So this entry would translate 1980, 1981, 1982, 1983, 1984, 1986, 1987, 1988, and 1989 to 1986. 1985 would **not** translate.

- **Quantity Identifier** * * **-;*2-5* ; ^M ;-**
  This function enables you to search for consecutive occurrences of the same character. The entry above reads: search for 2 to 5 (*2-5*) consecutive spaces, and replace with **one** EM space. The maximum quantity of consecutive occurrences that can be searched for is 127 (*1-127*).

- **Groups** ( ) **-;September (1986);(1) December;-**
  This function enables you to save part of a search string on the replace side or to change the order of information in a file. The entry reads: search for September followed by a **group consisting of 1986** and replace with the same **group (1986)** followed by December.

Note: Hex codes (i.e. **#0d#**) may not be entered within **Range**, **Or Statement**, **Nor Statement**, **Quantity** or **Group** functions. However, you may use extended characters (instead of hex codes) if your word processing package supports the extended character set. The extended characters may be entered within Range:, Or Statement, Nor Statement:, Quantity or Group functions.

Combining Advanced Translation Functions

You can combine advanced translation functions in almost any way. The combinations may be as simple or as complex as you want to make them.

The following string is the last string in the General Purpose Table and is used to strip out extraneous characters (not letters or numbers) that are not removed or translated by the other entries in the table. This string combines several advanced translation functions. Below the string is an explanation of the way in which these functions interact.

-;[!{az}{AZ}{09}];;-

Note: This entry must be positioned at the end of the table or it could cause other characters to translate incorrectly.

The above entry begins with a **Nor Statement** ([!) that reads: search for *any character except*. This is followed by several **Range Statements** that read: any lowercase letter **a** to **z** (**{az}**), *or* any uppercase letter from **A** to **Z** (**{AZ}**), *or* any number from **0** to **9** (**{09}**). So the search side of the string reads as follows: search for any character except any lowercase letter from a to z, or any uppercase letter from A to Z, or any number 0 to 9. The replace side has no characters and reads: replace with nothing. In other words, delete. This string deletes everything not already translated by other entries except letters and numbers.

Note: When searching or replacing asterisks, exclamation points, parentheses, braces, brackets, question marks, or any other character used with advanced translation functions, you must precede the character with a colon to escape its translation function.

Using advanced translation functions, you can eliminate redundant entries in your translation tables, thereby shortening both the tables and the time it takes to run a file through them.

Troubleshooting Translation Problems

Non-ASCII Files

Although the General Purpose translation table has been tested with many word processing software packages, occasionally you may find that a file contains extraneous characters (nonsense letters and numbers) after translation. These characters are embedded in a file during translation if commands are present in the original document which are not dealt with in the General Purpose table.

When extraneous characters are grouped at the beginning or end of the translated document, this means that the original document was not saved as a straight ASCII file. The extraneous characters represent text management commands that cannot be translated.

In this situation you should *not* edit the General Purpose table. Instead, you should convert the word processed document to ASCII *before* translating it. Converting the file to ASCII removes the text management commands at the beginning of the document. You can accomplish this using a utility function within the word processing program (i.e., convert to ASCII, convert to disk, print to disk, etc.). If you are uncertain which utility function to use, you should call the manufacturer of the word processing software.

However, if extraneous characters appear within the text after translation you may need to modify the General Purpose table. *If you are going to make any changes in the General Purpose table you should always copy it first so you can fall back on the original table should your changes not work out.*

Using the EXAM.TBL Table

You must first find out what commands are present in the original file which are appearing in the translated document as extraneous characters. Because many of these commands are transparent, and therefore not visible to the operator, you may need to translate the original file through a special translation table in order to make them visible. The table you need for this procedure is called **Exam.tbl**. It embeds hexadecimal codes in the file for the transparent commands. Use the *Offline Translation* procedure outlined on pages D-13 and D-14 of this chapter.

Once you translate a file using the **Exam.tbl** table, use the **File View** function to view the file. You will be able to see the codes that you need to be included in the General Purpose table. You can then add entries with these codes to the General Purpose table or modify the entries affecting them.

Once you have edited the General Purpose table and are ready to translate the document again, you should translate the *original* document, not the version resulting from the **Exam.tbl** translation.

ASCII Code Set

First Hex digit is in the top row; Second Hex digit is in the left side row.

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	NUL	DLE	SPACE	0	@	P	`	p								
1	SOH	DC1	!	1	A	Q	a	q								
2	STX	DC2	"	2	B	R	b	r								
3	ETX	DC3	#	3	C	S	c	s								
4	EOT	DC4	$	4	D	T	d	t								
5	ENQ	NAK	%	5	E	U	e	u								
6	ACK	SYN	&	6	F	V	f	v								
7	BEL	ETB	'	7	G	W	g	w								
8	BS	CAN	(	8	H	X	h	x								
9	HT	EM	)	9	I	Y	i	y								
A	LF	SUB	*	:	J	Z	j	z								
B	VT	ESC	+	;	K	[	k	{								
C	FF	FS	,	<	L	\	l	¦								
D	CR	GS	-	=	M	]	m	}								
E	SO	RS	.	>	N	^	n	~								
F	SI	US	/	?	O	_	o	DEL								

ACK: Acknowledge
BEL: Bell
BS: Backspace
CAN: Cancel
CR: Carriage Return
DC1: Device Control 1
DC2: Device Control 2
DC3: Device Control 3
DC4: Device Control 4
DEL: Delete
DLE: Data Link Escape
EM: End of Medium
ENQ: Enquire
EOT: End of Transmission
ESC: Escape
ETB: End of Transmission Block
ETX: End of Text
FF: Form Feed
FS: Field Separator
GS: Group Separator
HT: Horizontal Tab
LF: Line Feed
NAK: Neg.Acknowledgement
NUL: Meaningless Character
RS: Record Separator
SI: Shift In
SO: Shift Out
SOH: Start of Header
STX: Start of Text
SUB: Start of Special Sequence
SW: Switch
SYN: Sync
US: Unit Separator
VT: Vertical Tab

MCS Hex Code Set (501 Layout)

First Hex digit is in the top row; Second Hex digit is in the left side row.
Italic characters are half-intensity on an MCS or PowerView screen.

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	″	►	SP	0	¼	P		p						*IC*	*PLo*	
1	BLR	%	°	1	A	Q	a	q							*PUo*	
2	☆	′	–	2	B	R	b	r							*PLg*	
3	★	EM●	±	3	C	S	c	s					RT	*QR*	*PUg*	
4	{	$	÷	4	D	T	d	t					TR	*QL*	*PLn*	
5	✓	+	×	5	E	U	e	u					EL	*QC*		
6	}	EN-	=	6	F	V	f	v					CR	*CMO*		
7	#	*	†	7	G	W	g	w						*Cmo*		
8	|	)	‡	8	H	X	h	x					*Rt*	*CMX*		
9	®	(	§	9	I	Y	i	y					*SP Rt*	*Dh*		
A	¶	!	@	:	J	Z	j	z						HYP		
B	©	EN•	[	;	K	&	k							*PLa*		
C	■	]	,	⅔	L	¾	l							*PLq*		
D	□		HYP	′	M	½	m	TH								
E	◄	EM–	.	‘	N	/	n	EN					*TB*	*PLr*	DH	
F	EN•		⅓	?	O		o	EM					*CT*	*PUr*	ⓓ	

Appendix:
Installation Instructions

Installation Instructions

PC on the Network

You have in this kit a *PC communications board*. You must install the communications board in your PC to run the PC on the CG Network.

Installation requires five steps:

- Setting the *switches* on the board to accommodate your particular PC (as shown below).
- Plugging the board into a slot in your PC.
- Plugging the cable into the board.
- Running diagnostic tests on the board.
- Installing the software.

These *Installation Instructions* describe all five operations. After you have completed the instructions, read the *CG Network Manual* to install the PC network software and learn how to use the PC on the network.

Note to PTS users: The communications board in the CG Network kit is *not* the same as the board you install for the Personal Typography System™ (PTS). If you have the PTS, use *both* boards.

Step One: Changing Switch Settings

First, change the switch settings on your PC communications board.

Look at the diagram below to find switches **S1**, **S2**, **S3**, and **S4**. Notice which toggles are in the *on* (up) or the *off* (down) position.

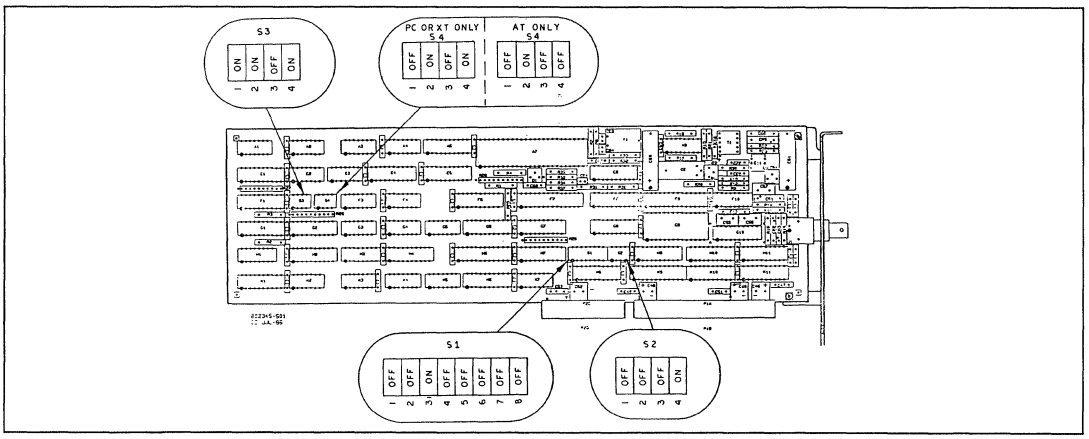
Set the toggles on switches **S1**, **S2**, **S3**, and **S4** to the positions noted in the diagram. Use a pointed object, such as a scribe, to move the toggles. If a toggle is already in the correct position, do not move it.

The Correct Positions

Change the switch settings as follows:

S1	1-Off	**S2**	1-Off	**S4**	1-Off
	2-Off		2-Off		2-On
	3-On		3-Off		3-Off
	4-Off		4-On		4-On (PC or XT)
	5-Off				Off (AT)
	6-Off	**S3**	1-On		
	7-Off		2-On		
	8-Off		3-Off		
			4-On		

Look on Appendix A for the *interrupt numbers*, *memory addresses*, and *I/O addresses* of the switches.

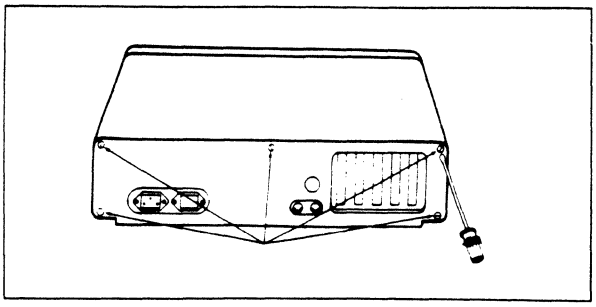


Switch Settings for the PC Board

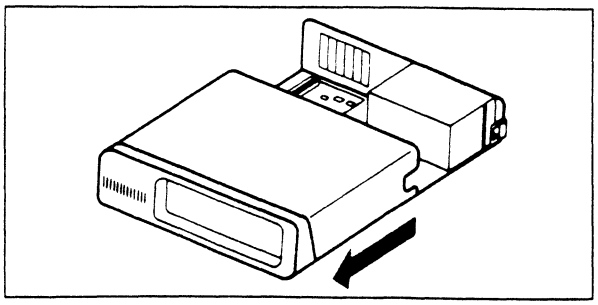
Step Two: Installing the Board in the PC

Next, open the PC and install the board.

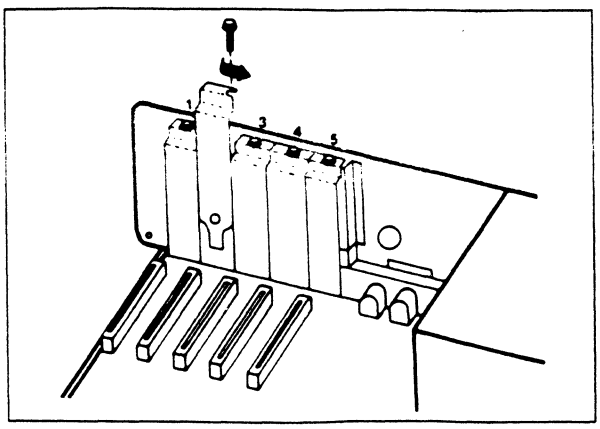
1. Unplug the PC cords to the power, the keyboard, the monitor, and any other attachments.
2. Remove the five cover screws from the back of the PC (as in the pitcure below).



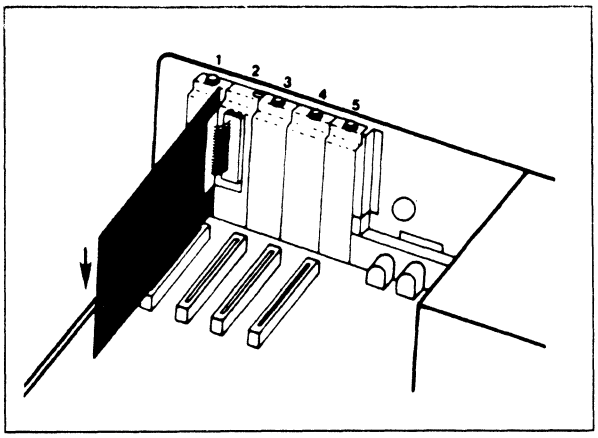
3. Hold the cover by its sides and pull from the front. Slide the cover off the PC. Pull from the front (as shown below).



4. Find the open slot nearest the back left of the PC.
5. Remove the retaining screw from the open slot and take out the metal cover (as shown below).



6. Push the legs of the communications board into the slot. Press firmly, but gently. You may have to maneuver the board so that the BNC Connector fits through the back window (see below).

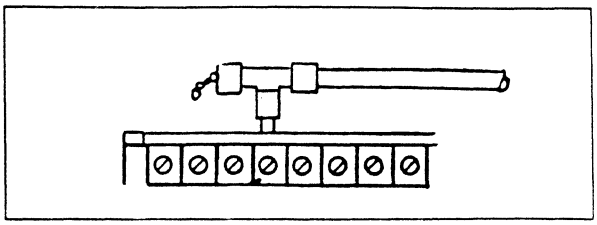


7. Slide the cover back onto the PC.
8. Replace the five screws you removed in Step 2.

Now read the next step and plug the coaxial Local Area Network cable to the BNC "T" Connector.

Step Three: Plugging in the Coaxial Cable

1. Fit the "Tee" Adaptor onto the BNC Connector on the back of the communications board port.
2. Plug the coaxial cable from the network to the "Tee" Adaptor (as in the picture below).



3. Plug the electrical connections (power, keyboard, monitor, etc.) back into the PC.
4. If you are connecting the PC to just one workstation, cap the empty end of the BNC Connector with the BNC Terminator Connector.

Now go to the next page and run the diagnostic tests.

Step Four: Running Diagnostic Tests

Before you run your PC on the network, run diagnostic tests to check the board you installed.

1. Remove the write protect tab from the diagnostic disk (labeled **PC on CG NETWORK DIAGNOSTIC DISK**).
2. Insert the diagnostic disk in drive **A**.

   Automatically, the diagnostic screen appears:

```
                    ELC Board Test
Configuration:
     I/O (S4) ..........................0270h
     Memory (S3+4) ..............?d000:0h
     Interrupt level (S1+2).................4h
     Station Address .......08 00 66 12 34 56
Cmnd?

Pass:                TESTS              Error Total:

 1 Register                  9 Internal Light
 2 Timeout                  10 82501 Extn Lpbk
 3 False Access             11 Transceiver Extn Lpbk
 4 Address Bus              12 Signal Quality Error
 5 DP Memory - CPU          13 Multicast Address
 6 DP Memory - 82685        14 Master Communications
 7 DP Memory Contention     15 Slave Communications
 8 82586 Self-test

1 EXIT  2 CONFIG  3 RUN  4 IDLE
```

3. Type the following:

   run 1 to 13 RETURN.

   This runs diagnostic tests on functions 1 through 13 that appear at the bottom of the screen. Each of the functions highlight in reverse video as they are tested. When the test is complete, another **Cmnd?** message appears on the screen.

   If an error occurs, it is listed on the screen.

   If you receive an error for functions 9 through 13, check to see that your BNC Connector is attached, and that the Terminator is on. Run the test again. Do not run functions 14 and 15.

4. When the **Cmnd?** message appears again, remove the diagnostic disk and reboot your PC.
5. If your diagnostic test results in errors, call the Compugraphc Communication Assistance Center at (617) 658-7140.

Step Five: Installing the Software

With the board in the PC and tested, you are ready to install your software.

1. Reboot your PC.
2. Insert the PC Network disk (labeled **PC on CG NETWORK**) in drive **A**.
3. *Floppy disk users:* Insert a blank, DOS-formatted disk in drive **B** and copy the PC Network software to it.

   copy a:*.* b: RETURN

   Hard disk users: Copy the PC Network software to your hard disk.

   copy a:*.* c: RETURN
4. Display the file **config.sys** on your screen:

   type config.sys RETURN
5. Create a new **config.sys** file with the **copy con** command.

   copy con config.sys RETURN
6. Type the lines that are in your current file, then include these new lines:

hard disk **device=c:cgnetdrv.exe** RETURN
floppy disk **device=a:cgnetdrv.exe** RETURN

both **buffers=20** RETURN
files=20 RETURN
Ctrl **z**
RETURN

Note: The first line of your **config.sys** file may vary, depending on your configuration (hard disk or floppy disk).

7. The system prompt appears. You have completed the installation procedure.
8. Insert the disk labeled **PC PV CGNET TRANSLATION TABLES** in drive **A**. Copy the disk:

hard disk **copy a:*.* c:** RETURN
floppy disk Insert a blank, DOS-formatted, floppy disk in drive B.
copy a:*.* b: RETURN

The Interrupt Numbers

	Switch	Interrupt Line On I/O Channel Bus
S1	SW1	IRQ2/IRQ9
	SW2	IRQ3
	SW3	IRQ4
	SW4	IRQ5
	SW5	IRQ6
	SW6	IRQ7
	SW7	IRQ10
	SW8	IRQ11
S2	SW1	IRQ12
	SW2	IRQ15
	SW3	IRQ14

The I/O Address Ranges

The following is a layout of the selectable port locations dedicated to the ELC. The offset assignment shall be constant, regardless of which range is selected for the I/O. **S4** controls the range selection.

When the switches on **S4** line up in the following combinations, they will address these ranges:

S4

SW4	SW3	SW2	SW1	I/O Address Range
On—*XT*	OFF	OFF	OFF	XX370+[Offset]
Off—*AT*	OFF	OFF	ON	XX330+[Offset]
	OFF	ON	OFF	XX270+[Offset]
	OFF	ON	ON	XX230+[Offset]
	ON	OFF	OFF	XX170+[Offset]
	ON	OFF	ON	XX130+[Offset]
	ON	ON	OFF	Invalid
	ON	ON	ON	Invalid

The Memory Address Ranges

When switch **SW4** on **S2**, and all the switches on **S3** line up in the following combinations, they will address these ranges:

S2	S3					
SW4	SW4	SW3	SW2	SW1	CPU Memory Address Range	8256 Memory Address Range
ON	ON	ON	ON	ON	(0)C000:0—(0)C3FF:F	(0)C000:0—(0)C3FF:F
ON	ON	ON	OFF	OFF	(0)CC00:0—(0)CFFF:F	(0)CC00:0—(0)CFFF:F
ON	ON	OFF	ON	ON	(0)D000:0—(0)D3FF:F	(0)D000:0—(0)D3FF:F
ON	ON	OFF	OFF	OFF	(0)DC00:0—(0)DFFF:F	(0)DC00:0—(0)DFFF:F
ON	OFF	ON	OFF	OFF	(0)EC00:0—(0)EFFF:F	(0)EC00:0—(0)EFFF:F
ON	OFF	OFF	ON	ON	(0)F000:0—(0)F3FF:F	(0)F000:0—(0)F3FF:F

ON=Logic Low (0) *OFF=Logic High (1)*