Tandy 600
Owner's Manual

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About This Manual

This manual shows you how to use your Tandy® 600. An overview of the computer is presented in the first part of the manual. The major emphasis, however, is on the application programs, the "heart" of the Tandy 600.

Part 1, "Overview of the Tandy 600"

Part 1 introduces you to the Tandy 600 computer. It includes a description of the computer and all its components. This part also presents instructions for turning on and off and resetting the computer. A brief description of all the application programs is also included, along with the system conventions for their use.

Part 2, "Tandy 600 Applications"

Part 2 presents the System Manager (along with the Calculator and Alarm functions) and each of the 5 applications (Word, Calendar, File, Telcom, and Multiplan) in separate chapters.

The application chapters (2-6) each include a tutorial for that application. The samples in the tutorials are intended to familiarize you with the most commonly-used features of the programs.

Because of the complexity of the applications, the Telcom and Multiplan tutorials are longer than the others. However, after going through the tutorials for these 2 applications, you should have a thorough understanding of their features and use.

Also, "example boxes" appear throughout Chapters 2-6. These contain examples of the information or concept previously presented. If you need more details, read the example box; if not, skip it. Example boxes are enclosed with a double line.

Appendices

The appendices contain technical and infrequently-used information. They include instructions for backing up your diskettes, setting up your computer for use with peripheral devices, and transferring data between Tandy 600 applications and a desktop computer. A list of the ASCII character codes for the Tandy 600, a glossary, and an index are also included.

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Part 1 Overview of the Tandy 600

Introduction

Congratulations on your purchase of the handheld Tandy® 600 computer! The Tandy 600 is a powerful computing tool for home, school, office, lectures, meetings – practically anywhere you go. Because of its small size and versatile built-in applications, the Tandy 600 is perfect for people on the move. The Tandy 600 travels with you as comfortably as your briefcase. And with its built-in modem, the Tandy 600 even lets you transmit data over the phone lines to another computer.

The Tandy 600 contains 32K of RAM (Random Access Memory) for file storage. You can also expand memory to 128K or 224K with special 96K upgrade kits. The application programs are provided on ROM (Read Only Memory) chips.

You can also store your data files on floppy diskettes. The Tandy 600 features a built-in disk drive that operates with 3½", 360K diskettes. Storing your files on diskettes gives you unlimited data file storage space.

Use the 8-Volt DC adapter/power cord (included) to operate the Tandy 600 on 120VAC (60Hz) current from any standard electrical outlet. When an AC power source is not readily available, the nickel-cadmium batteries take over. The batteries recharge each time you plug the computer into an electrical outlet.

● Your Tandy 600 can be used with the following optional equipment:
● BASIC ROM Package (Cat. No. 26-3904)
● 96K RAM Upgrade Kits (Cat. No. 26-3910)
● Direct Connect Modem Cable (Cat. No. 26-1410)
● Printer Cable (Cat. No. 26-1409)
● Acoustic Coupler (Cat. No. 26-3805)
● Null Modem Adapter (Cat. No. 26-1496), DB-25 Cable (Cat. No. 26-4403 or 26-1408)
● Blank Micro Diskettes (Cat. No. 26-0415) for disk storage of data files

The Equipment

Before you start using the application programs, take a few moments to familiarize yourself with the computer itself. The Tandy 600 portable is commonly referred to as a "lap-size" or "handheld" computer. The central processing unit (CPU), screen, disk drive, and keyboard are all contained in one unit. The weight of the machine is approximately 9½ pounds. The overall dimensions are approximately 11½" × 12½" × 2½". When the hinged screen is closed, the Tandy 600 looks much like a portable typewriter.

The Case
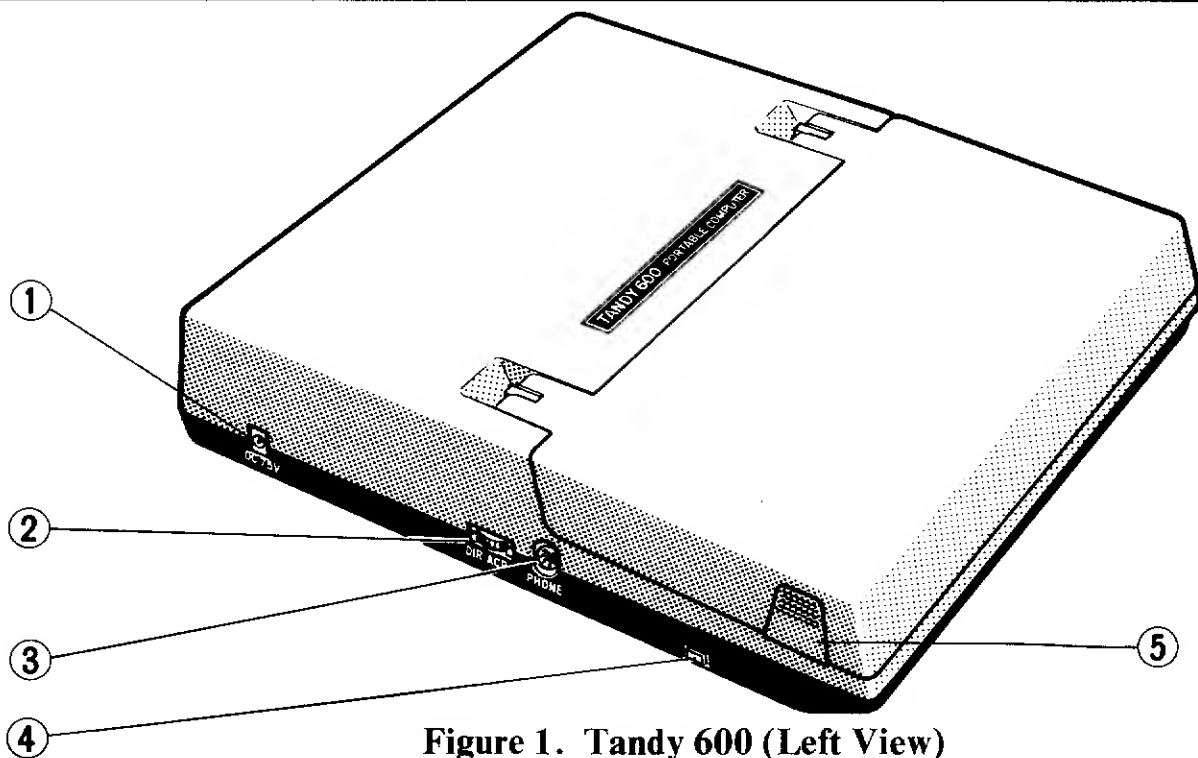
Figure 1. Tandy 600 (Left View)

1. **Power Cord Connector:** Plug in your 8-Volt DC adapter/power cord to operate the Tandy 600 on 120VAC (60Hz) current. Plug the pronged plug of the power cord into any standard 120-Volt electrical outlet.

2. **Direct Connect/Acoustic Coupler Switch:** Set to **DIR** when using the built-in modem or **ACP** when using a portable computer acoustic coupler.

3. **Phone Jack:** Plug in the portable computer direct connect cable when communicating with another computer via the built-in modem. Plug the other end of the cable into your telephone, and connect it to the phone line.

4. **Reset Button:** Press to reset the computer. Refer to "Warm Starts" for more information.

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5. **Case Fasteners:** Press the two fasteners at the same time, and lift the hinged screen of the computer to open the computer case.
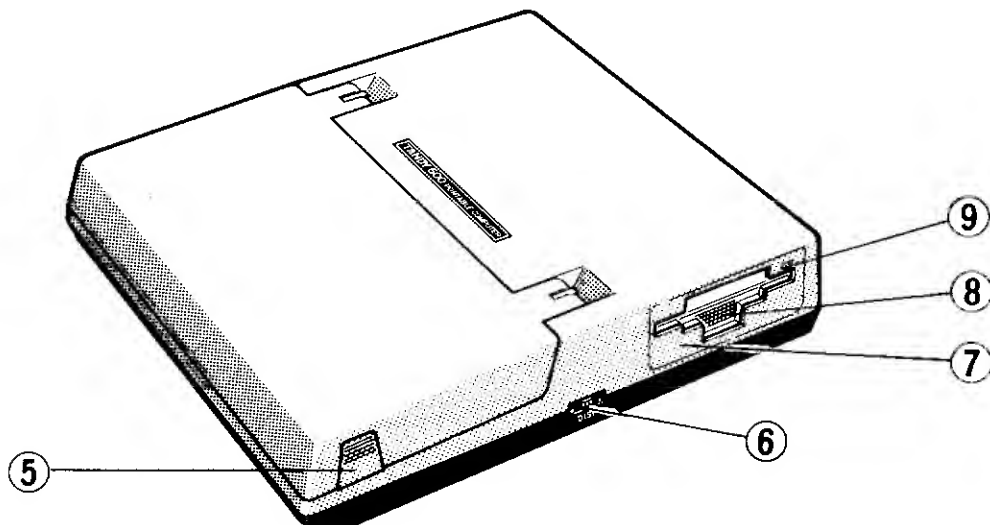
Figure 2. Tandy 600 (Right View)

6. **Display Adjustment Dial:** Rotate clockwise to lighten the screen, counterclockwise to darken it.

7. **Disk Drive:** Insert a 3½" floppy diskette to save files on disk or load files from disk into the Tandy 600.

8. **Disk Release Button:** Press to release and remove the diskette from the disk drive.

9. **Disk Access Light:** Indicates disk accessing. Never remove the diskette while the light is on.
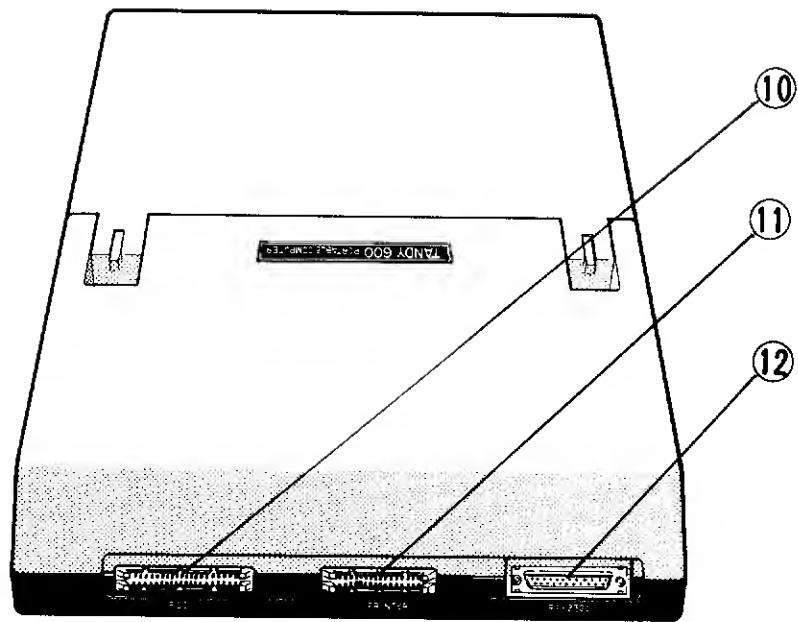
Figure 3. Tandy 600 (Back View)

10. **Floppy Disk Drive Connector:** For future expansion.

11. **Printer Connector:** Connect a printer via the portable computer printer cable.

12. **RS-232C Connector:** Attach a DB-25 cable to transmit or receive serial information. When communicating directly with another Tandy computer, also use a null modem adapter.
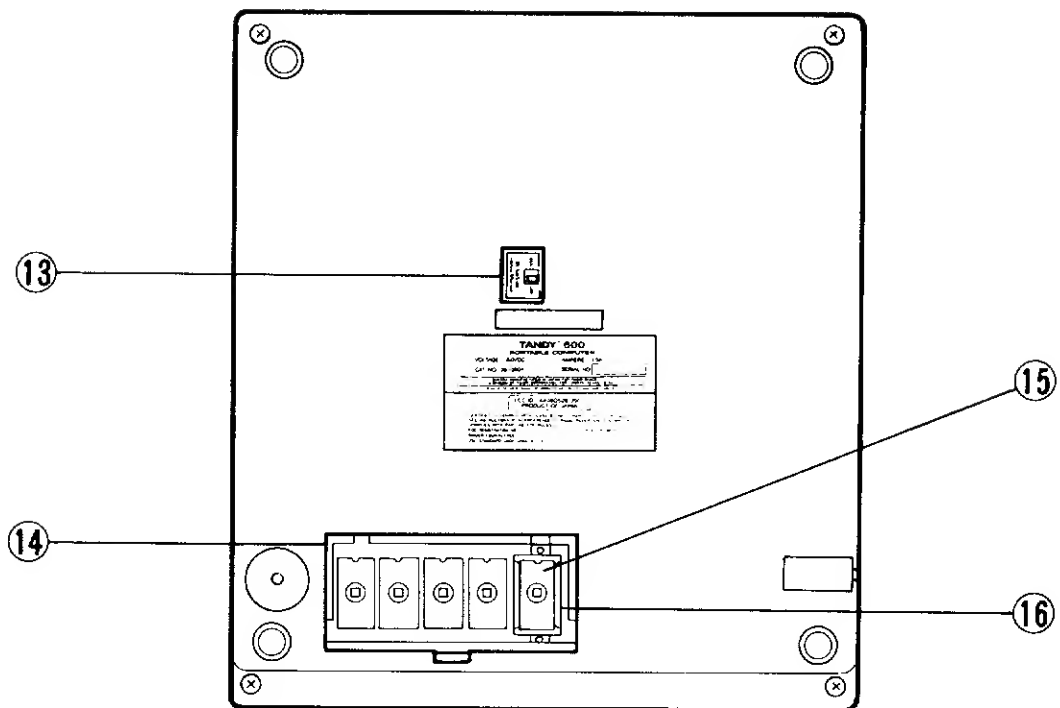
Figure 4. Tandy 600 (Bottom View)

13. **Memory Power Switch:** Keep this switch ON for computer operation. Turn OFF memory power only when storing your computer for a long period of time or when a cold start is ineffective. See "Reset and Cold Starts" for more information. Turning OFF memory power erases all data in RAM.

14. **ROM Chips:** (Under the panel.) ROM chips contain the files and applications that control the Tandy 600.

15. **Plan ROM Chip:** Contains the Multiplan application and can be interchanged with the BASIC ROM Chip.

16. **Molex Carrier:** Facilitates easy removal and insertion of the BASIC and Multiplan ROM chips.

Starting and Turning Off YourComputer

Plug the power cord, which contains a DC 8V converter, into the opening at the back of the left side of the computer. Insert the pronged plug into an electrical outlet.

On both sides of the front of the computer case are ridged fasteners. Open the Tandy 600 case by pressing the two fasteners at the same time. Lift the hinged computer screen into the upright position.

Perform a cold start when you start your system the first time, immediately after plugging it into an outlet or if the memory switch on the bottom of the computer has been turned OFF. Refer to "Cold Starts" for more information. The System Manager screen appears.

```
WORD
CALENDAR
FILE
TELCOM
PLAN




Microsoft(R) Works V1.20, Copyright (1984, 1985) Microsoft Corp.
> Copy Delete List Name Options Run Set
Select option or type command letter
System Manager: WORD                    Bytes free: 23920    1/ 1/1985 12:00:00 AM
```

Figure 5. System Manager Screen

Adjust the screen brightness with the display wheel (DISP) on the right side of the computer.

Cold Starts

Before you perform a cold start, be sure the RAM Memory switch on the bottom of the computer is ON. Then, briefly press the BKSP, ALT, LABEL, and POWER keys at the same time. Release the POWER key first, then the others. All data files stored in memory are erased, and the System Manager screen appears.

If a cold start does not display the System Manager screen, turn OFF the RAM Memory switch on the bottom of the computer. Wait 30 seconds, then turn ON memory again. Perform a cold start to bring up the System Manager screen. Remember, turning off memory and performing a cold start erases all RAM memory, even defaults set in the System Manager. Reset the system date and time (Set Clock) after performing a cold start.

Normal Starts, Warm Starts, and Reset

Under normal conditions, you can simply press the POWER button at the top left of the keyboard to start your Tandy 600. The System Manager screen appears. A normal start does not erase any of the data currently in RAM memory.

Another power-on procedure is the "warm start." Hold down BREAK (SHIFT PAUSE), and press the POWER key to perform a warm start. Perform a warm start to redraw the System Manager screen whenever you encounter any difficulties. A warm start also recovers any available memory not recovered after file deletion.

On the front left side of the computer is a small reset button. If the computer screen locks up, or "freezes," and the programs are inoperable, press the reset button. The System Manager screen appears after you reset the computer. RAM memory remains intact.

Turning Off Your Computer

When you are not working with it, turn OFF the computer by pressing the
[POWER] key. The computer automatically turns off power after 5 minutes
if no keys are pressed. You can change this "sleep" time at Set Sleep in the
System Manager. Refer to the "System Manager" chapter for more
information on Set Sleep.

When you power on the computer again after it has automatically turned
itself off, you return to the application and file in effect when the computer
turned off. All commands, modes, and so forth active when the computer
turned off are still in effect, and the cursor appears in the same position as
when the file was last accessed.

The Screen

The Tandy 600 features a matte-finish, liquid crystal display (LCD) screen. The 9″ x 2½″ screen displays up to 80 characters on each of its 16 lines. In most applications, the last 3 lines of the screen contain a command menu for the application, a message line, and a status line, leaving 13 lines for application use. The System Manager screen, for example, appears as follows.

```
   ┌WORD████│
   │CALENDAR│
   │FILE    │
   │TELCOM  │
 1 ┤PLAN    │
   │        │
   │        │
 2 (         │
 3   Microsoft(R) Works V1.20, Copyright (1984, 1985) Microsoft Corp.
 4   > Copy Delete List Name Options Run Set
 5   Select option or type command letter
 6   System Manager: WORD              Bytes free: 154992  1/ 1/1985 10:14:40 AM
```

Figure 6. System Manager Screen

1. **Application Area:** Displays application data. The cursor (highlight) appears at the upper right of the screen.

2. **Command Area:** Displays information and commands.

3. **Copyright Line:** Displays software copyright information.

4. **Command Menu:** Displays commands currently available.

5. **Message Line:** Displays information, prompts, and error messages.

6. **Status Line:** Displays the current application file and other status information.

The Keyboard

The Tandy 600 includes a full-size, typewriter-style keyboard. The Tandy 600 keyboard features "auto-repeat" keys. Repeat a keystroke continuously by holding down the key. The keyboard contains the usual character keys (A – Z, 0 – 9, and special characters) and command keys (TAB , SHIFT , ENTER , and so forth). In addition, the keyboard contains 10 function keys, a locking number key (NUM , pressed with the SHIFT key on the right side of the keyboard), which enables a 10-key pad, and several special function keys as indicated in figure 7.
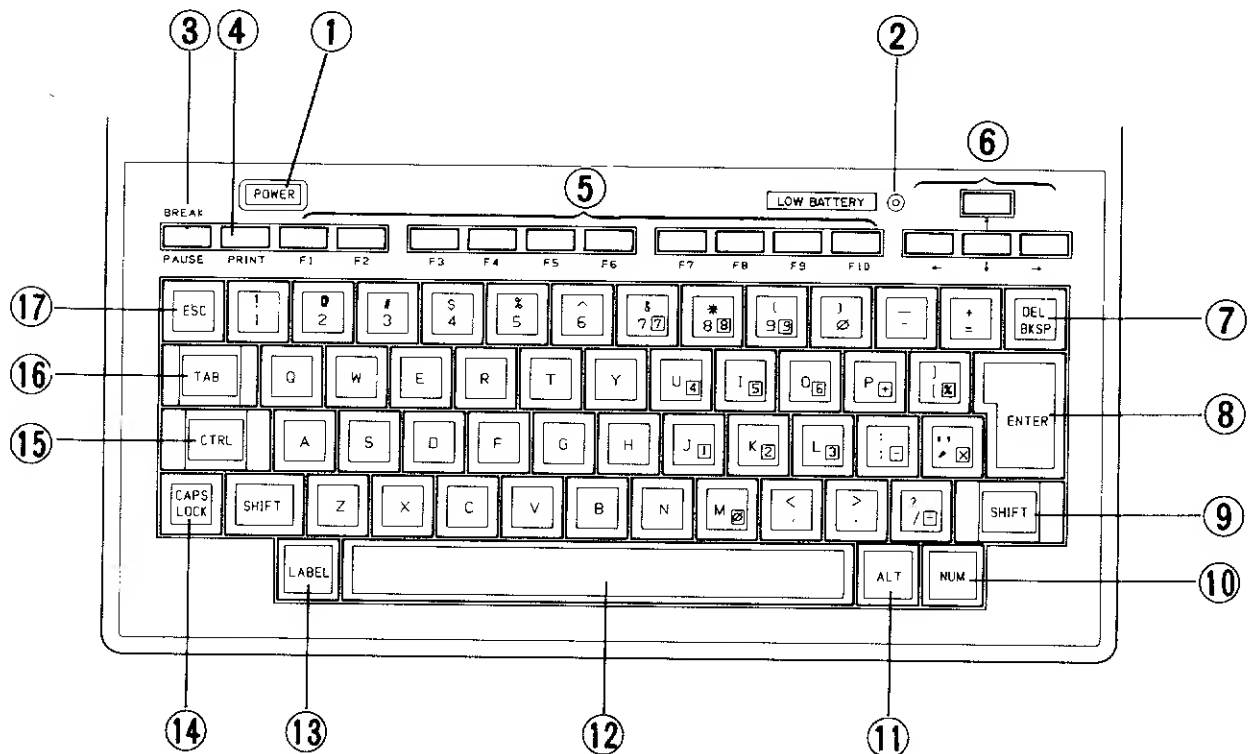
Figure 7. Tandy 600 Keyboard

1. **POWER** : Press to turn on the Tandy 600 and display the System Manager screen. Press again to turn off.

2. **Low Battery Indicator:** Indicates that approximately 10 minutes of battery power is left when this light comes on. Plug the computer into an AC power source. Continue operating on AC, or turn off the power to recharge the batteries. Recharging takes approximately 14 hours.

3. [PAUSE] / [BREAK] : Press [PAUSE] to temporarily stop a BASIC program execution. Press any key to continue. Press [BREAK] ([SHIFT] [PAUSE]) to cancel a command and return to the command menu. [BREAK] in BASIC stops program execution.

4. [PRINT] : Press to print whatever is currently displayed on the screen. (The screen prints correctly only on Tandy DMP series printers capable of graphics, such as the DMP 120, DMP 130, DMP 200, DMP 400, DMP 420, DMP 430, DMP 500, DMP 2100, DMP 2100P, and DMP 2200. Additionally, the DIP switch on the printer must be set to CR = CR.) In BASIC, press [SHIFT] [PRINT] to print the entire file.

5. **Function Keys:** Press [F1] – [F10] for predefined functions in each of the applications, as well as for general functions throughout the system. Use the function keys alone, with [SHIFT], or with [CTRL].

   Refer to the chapters of this manual specific to each application for more information on the function keys. Refer to "System Function Keys" in the "System Manager" chapter for details on the function keys used throughout the system.

6. **Arrow Keys:** Press these keys to move the screen cursor, or "scroll." You can also use [SHIFT] and [CTRL] with the arrow keys. Refer to the chapters of this manual specific to each application for more information on the arrow keys.

7. [BKSP] / [DEL] : Press [BKSP] to move the cursor back a space and delete the character it moves over. Press [DEL] ([SHIFT] [BKSP]) to delete the selected text or the character currently under the cursor. [BKSP] moves to the previous command in a command menu.

8 [ENTER] : Press to insert a carriage return or to carry out a command. Refer to "Carrying Out Commands" in the "System Manager" chapter of this manual for more information.

9. [SHIFT] : Press [SHIFT] along with a character key to type the uppercase letters and symbols on the keyboard. You can also use [SHIFT] with a function or command key.

10. [NUM] : Press [SHIFT] [NUM] to enable the 10-key pad. (Only the [SHIFT] key on the right side of the keyboard works in conjunction with the [NUM] key.) Press [SHIFT] [NUM] again to return to normal characters.

11. [ALT] : Use in conjunction with other keys; enter special characters.

12. **space bar:** Press to type a blank space on the screen. Press while in a command menu to move to the next command field.

13. [LABEL] : Press to display function key labels for functions currently available. Press with [SHIFT] to display SHIFT-functions available. Press with [CTRL] to display CTRL-functions available.

14. [CAPS LOCK] : Press to lock keyboard in uppercase mode. Affects all keys in the three bottom lines of the keyboard.

15. [CTRL] : Press along with a function or command key to use the key's CTRL-function.

16. [TAB] : Press to move to the next tab stop on the screen. Press while in a command menu to move to the next command field. Press [SHIFT] [TAB] to move to the previous command field.

17. [ESC] : Press to cancel a command.

Command Keys

[ESC]	Cancels a command before you press [ENTER]. Returns you to command menu.
[BREAK]	Cancels a command before you press [ENTER], and takes you back to the command menu.
[SHIFT][BKSP] ([DEL])	Erases a selected word or character after you choose a command.
[LABEL] or [F1]	Displays labels for functions currently available by pressing a function key ([F1] – [F9]). Press again to erase.
[SHIFT][LABEL] [SHIFT][F1]	Displays labels for functions currently available by pressing [SHIFT] along with a function key ([F1] – [F9]). Press again to erase.
[CTRL][LABEL] or [CTRL][F1]	Displays labels for functions currently available by pressing [CTRL] along with a function key ([F1] – [F9]). Press again to erase.

System Function Keys

[F1]	Same as [LABEL].
[SHIFT][F1]	Same as [SHIFT][LABEL].
[CTRL][F1]	Same as [CTRL][LABEL].

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`CTRL` `F2`	Displays the calculator (CALC). Press `CTRL` `F10` to return to the current application.
`CTRL` `F3`	Displays Calendar events for which an ALARM has sounded. Press `CTRL` `F10` to return to the current application.
`CTRL` `F9`	Leaves the current application and returns to the last application accessed (Run Prev), excluding System Manager. Press again to return to the original application.
`CTRL` `F10`	Quits the current application and returns to the System Manager screen. (Returns to current application from Calculator or Alarm.)

The Disk Drive

The Tandy 600 uses 3½" diskettes for additional file storage. The disk drive is located on the right side of the computer. The diskette that comes with your Tandy 600 contains the FORMAT, DISKCOPY, PRINTER.DVR, and INSTALL utilities. FORMAT prepares a diskette for file storage, and DISKCOPY duplicates a diskette for safekeeping. PRINTER.DVR and INSTALL work in conjunction with one another to set up the Tandy 600 for your printer. Refer to Appendices A and B for more information on these utilities. DBCALLS.LIB is also included on your diskette. This file is for use with the optional BASIC package.

Never remove or insert, "swap," diskettes when the power is off. Swap diskettes only at the System Manager screen when it is displaying RAM files. To determine whether displayed files are in RAM or on disk, highlight one of the files. The name of the highlighted file appears at the bottom of the screen. A: appears before the filename for all disk files. `F3` changes between the disk file screen and the RAM file screen.

Important Note

Make a backup of the utilities diskette that comes with your computer. Use the copy for day-to-day operation, and store the original (master) in a safe place. **Never** use the master diskette for file storage. Backups ensure that you always have a spare diskette in case of an accident. Refer to Appendix A for backup instructions.

After you backup your master diskette, use the new diskette to format a few blank diskettes for data storage. We recommend that you always keep at least one formatted diskette on hand for data file storage. Disk formatting requires approximately 6389 bytes (6.4K) of memory. If you have less than 6.4K and have not already formatted your diskette, delete some of your files to free enough memory for the format.

With the computer on, insert the diskette, label side up and to the outside, into the disk drive. Next, choose Options from the System Manager command menu, with A as the drive. Press `ENTER`. The System Manager screen is redrawn and includes the names of all files stored on the diskette. Press `F3` to return to the RAM file directory.

Note the small, square hole in the upper right corner of your diskettes. This is the "write-protect" notch. Use this notch to "write-enable" the diskette (for formatting, backing up, or copying) or write-protect it. Move the small tab (normally red or black) down so that the hole is completely covered to write-enable the diskette. The tab should click into place. Move the tab up so that the hole is open to write-protect the diskette.

Memory

ROM

On the bottom of the Tandy 600 is a covered compartment which contains the ROM chips that control your computer. The Tandy 600 comes with 5 ROM chips. The first 4 (from left to right) contain the operating system and all applications and functions except Multiplan.

Static and other magnetic fields can wipe out your ROM chips. **Never** touch the pins of the Tandy 600 ROM chips. We recommend that you always keep one of the ROM chips (Multiplan, BASIC, or any chip made available in the future) in the last slot. **Never remove any of the first four ROM chips.**

The fifth chip, on the far right, contains the Multiplan application. The Multiplan chip is encased in a Molex carrier, which facilitates easy removal and insertion of the chip.

If you purchase the optional BASIC package for your Tandy 600, you exchange the BASIC ROM chip for the Multiplan chip. Save all your data files onto disk, turn off the computer, then exchange the chips. When you turn on the computer again, the System Manager screen is redrawn to include the BASIC files.

RAM

The Tandy 600 comes with 32K RAM. Upgrade kits are available to expand memory to 128K or 224K. The two 96K upgrade kits must be installed at a Tandy Repair Center or Computer Store.

On the bottom of the computer is a small Memory Power switch. This controls RAM memory. Keep this switch ON for normal computer operation. Turn OFF Memory Power only when storing your computer for a long period of time or when a cold start is ineffective. See "Reset and Cold Starts" for more information. Turning OFF Memory Power erases all files stored in the computer's RAM memory, including default information stored in the System Manager Set command.

Working with Limited Memory

The Tandy 600 has a fixed amount of file storage space, or system memory, depending on the amount of RAM memory installed. On a 32K computer, approximately 23K is available for file storage. If you run out of file storage space, the message line displays:

Not enough system memory

Each application data file is limited to approximately 64K. If you run out of application work space, the message line displays:

Not enough work space

Because system memory is less than application work space, you will never see this message on a 32K computer.

The minimum amount of free memory needed for an application work file is:

WORD	3700 bytes (minimum file size 1100)	
CALENDAR	4200 bytes (minimum file size 347)	
FILE	3800 bytes (minimum file size 1472)	
	(minimum data file size 172)	
TELCOM	6500 bytes (minimum file size 2347)	
MULTIPLAN	3800 bytes (minimum file size 1251)	

If memory is low in a file or in the system, the low memory (Lo) indicator appears on the status line. When Lo indicates low work space, the amount of work space still available is: 1024 bytes in Word, 100 bytes in Calendar, 100 bytes in File, 256 bytes in Telcom, and 256 bytes in Plan. To check for low system memory or work space in any application, select the Option command, and press ENTER .

If system memory is limited, the message line displays:

Free space in system memory: xxxx

If work space is limited, the message line displays:

Free work space: xxxx

The number of free bytes is shown after the colon in the free space messages. A byte is equal to one character in RAM.

Delete data files at the System Manager screen to free system memory. First, save your files on disk with the Copy command. Then, delete the files from memory.

You can also print files, save the paper copy, then delete the files. Another way to save files is to transfer them to another computer, using Telcom. To increase work space in a file: delete unnecessary data from the file or move data to another file.

The Batteries

The Tandy 600 uses rechargeable nickel-cadmium batteries when it is not connected to an AC power source. The batteries also retain RAM memory when the computer is turned off.

Battery operation time varies according to the amount of input/output (printer, RS-232C, or disk access) time used. The following chart lists approximate battery operation times.

I/O Operation Time

I/O Time	Total Operation Time
0 Hour	11 Hours
1 Hour	8 Hours
1½ Hours	6 Hours

To recharge the batteries, turn off the computer while it is connected to an AC power source. The computer draws power from the AC line to recharge the batteries. A full charge takes approximately 14 hours.

The small light at the upper right of the keyboard is a Low Battery indicator. When this light comes on, follow the battery recharge procedure. Always allow enough time for a full charge when recharging the batteries.

Important Note

Charging the batteries over 14 hours does not increase the battery power. Battery life may be reduced if the computer is kept plugged-in for more than 14 hours and is not used. Unplug the computer when it is not in use for long periods of time.

The Application Programs

The Tandy 600 portable computer contains several built-in application programs you can use independently or in combination with each other.

SYSTEM MANAGER runs the application programs, exchanges information between programs, and manages the files you create. System Manager acts as a "main menu" for the entire system.

WORD is a word processing program for producing letters, memos, reports, and manuscripts.

CALENDAR records daily appointments, activities, and tasks. You can set an alarm to remind you of appointments. The computer signals the appointment by displaying an alarm indicator (*) on the screen. You can also set alarms to signal you with a sound tone.

FILE stores, retrieves, and processes information you enter.

TELCOM dials telephone numbers automatically and communicates with other computers over the telephone lines. Telcom can access a variety of "host" computer systems and information services, such as Dow Jones® and CompuServe®.

MULTIPLAN® creates an electronic worksheet for data analysis.

System Conventions

The Indicators

When using certain functions, the screen displays symbols to indicate a certain condition. These indicators appear at the lower right of the screen, on the status line. The indicators are as follow:

*	Alarm
♪	Telephone call coming in
Ex	Extend select
Ap	Append to scrap
Lo	Low memory
Ns	No scrap
Cp	Text capture (Telcom)
Pr	Print (Telcom)
Ot	Overtype

More information on the indicators is given in the chapters concerning the applications that use them.

The Scrap

The scrap is a special temporary storage area in memory. Store data in the scrap to move it or duplicate it elsewhere in the current application or in another application. When you quit an application, any data in the scrap remains intact.

The [F5] key controls the scrap mode in most applications. Press [F5] until the indicator for the scrap mode you want appears. There are three scrap modes: Replace, Append, and No Scrap.

Mode	Status Line Indicator	Action
Replace	none (default)	Any data you copy or delete goes into the scrap, overwriting any previous scrap data.
Append	Ap	Any data you copy or delete goes into the scrap, at the end of any current scrap data.
No Scrap	Ns	Any data you delete is lost. You cannot copy in the No Scrap mode.

Scrap data is stored in an unspecified data file, SCRAP.

Inserting Data from the Scrap

If memory is limited when inserting from the scrap, the application inserts only as much data as memory space allows. The Lo memory indicator appears on the status line. Even though only part of the scrap data is inserted, the original data in the scrap remains intact.

To insert the entire scrap when memory space is limited, first delete the information partially inserted from the scrap. Press F5 to choose the No Scrap mode so that the original data in the scrap stays the same. Ns appears on the status line.

Now recover memory space by deleting data or data files, as appropriate. (Refer to "Working with Limited Memory.") When sufficient memory is available, insert the data from scrap again. In File or Calendar, press F4 to ensure proper sorting of the data.

Refer to Appendix C for information on transferring data from one application to another.

The Command Area of the Screen

The computer screen contains two separate areas: an application work area and a command area. A typical command area takes up the last three lines of the screen and consists of: a command menu, a message line, and a status line.

```
> Copy Delete List Name Options RUN Set
Select option or type command letter
System Manager: WORD          Bytes free: 154992  1/ 1/1985 10 13 12 AM
```

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The message line displays prompts and error messages. The status line shows the name of the application and file currently in use, the amount of free memory, the contents of the scrap, and the current scrap mode and other indicators.

Free memory (Bytes) refers to the amount of system memory available. Deleting files and deleting data in files frees system memory for use.

The contents of the scrap (a temporary storage place for deleted or copied text) appears enclosed by braces ({ }). If the scrap contains more characters than can be shown, the additional characters are truncated on the screen. The scrap indicates invisible characters with symbols:

¶ Paragraph mark
→ Tab
↓ New Line

The Command Menus

Command menus list commands that are currently available in an application. Run applications, create files, and perform all other application operations using the command menus.

Follow these steps to use a command menu:

1. Go to the Command mode.
2. Choose a command.
3. Fill in or choose command fields, as necessary.
4. Carry out the command.

Specific commands and the actions they perform are presented in the application chapters.

Entering the Command Mode

In all applications except System Manager and Telcom, press ESC to enter the Command mode. (System Manager begins in the Command mode. Press SHIFT ESC to enter the Command mode in Telcom.) A selection marker highlights the most frequently-used, or "default," command.

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Choosing a Command

Choose a command by placing the highlighted selection marker over it. Press ⌷TAB⌷ or the space bar to move the selection marker over the next command. Press ⌷SHIFT⌷ ⌷TAB⌷ or ⌷BKSP⌷ to place the marker over the previous command and press ⌷ENTER⌋.

You can also choose a command by pressing its initial letter (⌷R⌋ for Run, and so forth). The command fields for the specified command appear. If there are no command fields, the command is carried out.

Choosing or Filling In Command Fields

Command fields appear only if a command requires additional information in order to complete its action. Move between command fields with ⌷TAB⌷ and ⌷SHIFT⌷ ⌷TAB⌷. There are two types of command fields: menu and prompt/response.

Menu command fields present two or more options from which to choose. The current option, or proposed response, appears either highlighted or surrounded by parentheses. Pressing the space bar chooses the next option. ⌷BKSP⌷ chooses the previous option. You can also choose a menu command option by pressing its initial letter (⌷J⌋ for Justified, and so forth). When the command field is correct, press ⌷TAB⌷ to move to the next command field.

Prompt/response fields require you to fill in a response to a prompt. If the proposed response is correct, press ⌷TAB⌷ to move to the next command field. After you change a response, press ⌷TAB⌷ to move to the next command field.

Carrying Out a Command

After you respond to all prompts, press ⌷ENTER⌷ to carry out the command. If there are any errors in the command field entries, an error message appears. If there are no errors, the application performs the action directed by the command.

Part 2 Tandy 600 Applications

Chapter 1 System Manager

System Manager manages all Tandy 600 files, both data and application. File operations at the System Manager level include copying, deleting, listing, and renaming files. Access either disk files or RAM data files. Also, set all system parameters at the System Manager. Finally, choose applications and application data files at the System Manager screen.

The System Manager screen displays automatically when you start the Tandy 600.

Figure 8. System Manager Screen

Special System Manager Keys

Selection Keys

F7	In a command field, selects (highlights) the first Word to the Left of the cursor that is not already selected. If the cursor is in the middle of a word, F7 selects that word.
F8	In a command field, selects (highlights) the first Word to the Right of the cursor that is not already selected. If the cursor is on a word, F8 selects that word.
F9	In a command field, selects (highlights) the first Character to the Left of the cursor.
F10	In a command field, selects (highlights) the first Character to the Right of the cursor.

Command Keys

ESC	Cancels the current command and returns to the command menu.
ENTER	Carries out the current command using default values or values you fill in for the command fields.

Special keys for the command menu are:

TAB or space bar	Moves to the next command.
SHIFT TAB or BKSP	Moves to the previous command

Special keys for the command fields are:

TAB	Moves to the next command field.
SHIFT TAB	Moves to the previous command field.
space bar	Moves to the next item in a menu-type command field.
BKSP	Moves to the previous item in a menu-type command field.

The Application Area

The upper part of the System Manager screen is the application area. The names of the applications appear to the left of the double line. The applications that come with your Tandy 600 are: Word, Calendar, File, Telcom, and Plan. Following is an example of a System Manager application area, including sample files.

```
WORD       LETTER    MEMO     NOTES    WORK
CALENDAR   CALENDAR
FILE       ADDRSSES  PHONE
.DAT       ADDRSSES  PHONE
TELCOM     CS        DJ       ST
PLAN       COSTS     LOAN
.ASC       TEXT
.TXT       SESSION
.          MQDATA    SCRAP

Microsoft(R) Works V1.20, Copyright (1984, 1985) Microsoft Corp.
> Copy Delete List Name Options Run Set
Select option or type command letter
System Manager: WORD                     Bytes free: 134224  1/ 1/1985 12:12:44 AM
```

Figure 9. System Manager Screen, Application Area

Work Files

The names of any application, or "work," data files appear to the right of the double line. As you create data files, a list of the filenames appears on the corresponding application line. When an application has more than 8 data files, the list continues on the next line, and the remaining applications move down a line.

Work File Extensions

Whenever you create a work file for an application, the appropriate extension is automatically appended to it. The work file extensions are not listed along with the filenames on the System Manager screen. The work file extensions are:

Application	Extension
Word	. WRD
Calendar	. CAL
File	. DAT
	. FIL
Telcom	. WRK
	. TXT
	. TEL
Plan	. PLN

The File application uses the . FIL extension for files containing File layout information (column widths, name, and so forth) and the . DAT extension for data files. The . TXT extension is used by Telcom for the capture to file (SESSION . TXT). Telcom script files use a . TEL extension. Refer to the "File" and "Telcom" chapters for more information.

You do not enter a file extension for an application file when you run it; the computer opens the appropriate file according to the application line on which it appears. The Copy, Delete, List, and Name commands, however, do require a filename extension.

Unspecified Data Files

The Tandy 600 can store two types of data files: work files, created in applications, and "unspecified" data files. Unspecified data files are those that do not contain filename extensions or that use file extensions not recognized by the Tandy 600 applications. This happens when a file is copied or renamed without adding the appropriate extension. Files copied into memory from an external source, such as CompuServe or the Dow Jones News/Retrieval Service are also unspecified data files.

A list of unspecified data files appears on the line(s) after the last application. A period or the extension appears to the left of the double lines to indicate unspecified data files.

Using Unspecified Data Files in Applications

If the data in an unspecified file comes from a Tandy 600 application or a compatible microcomputer application, you need only rename it, using the appropriate extension, to access it from the application.

If the data in an unspecified file is not in the correct format for an application, you can restructure the file, using the scrap. Copy the data file to the scrap, then insert the scrap into a work file for the appropriate application. The instructions for restructuring an unspecified data file are the same as for transferring data between applications.

Restructuring and Transferring Data

1. Open the unspecified file in the Word application. (Refer to "Run" in Chapter 1 and "Merging a Text File into a Word Document" in Appendix C.)

2. Insert ⎡TAB⎤ characters into the text if you wish to separate it into fields or cells suitable for File or Plan. Insert ⎡SHIFT⎤ ⎡ENTER⎤ characters into the text if you wish to separate it into records, columns, or rows suitable for Calendar or Plan.

3. Choose the Replace or Append scrap mode. Highlight the data you want to copy.

4. Go to the command mode, and choose Copy or Delete. The data is copied into the scrap (and deleted from the current file if you choose Delete).

5. Quit the current application, and open the work file into which you wish to copy the data.

6. When the application screen appears, position the cursor for correct placement of the data (if needed). Go to the command mode, and choose Insert. Some applications require further entries; refer to the application chapters for more information.

The Command Area

The command area, the last four lines, of the System Manager screen contains the copyright notice, command menu, message line, and status line.

```
Microsoft(R) Works V1.20, Copyright (1984, 1985) Microsoft Corp.
> Copy Delete List Name Options RUN Set
Select option or type command letter
System Manager: WORD                    Bytes free  154992  1/ 1/1985 10:13:49 PM
```

Figure 10. System Manager Screen, Command Area

The commands on the System Manager command menu perform operations on entire files. Run an application and perform all other file operations using the System Manager commands. Run is highlighted to indicate that it is the proposed response.

The System Manager message line displays prompts and error messages. Messages tell you what to do next; error messages indicate an invalid entry.

The first items on the System Manager status line are the names of the current application (System Manager) and the currently selected file (application or data). Next, the status line displays the amount of available memory (Bytes free). The final items on the status line are the current system date and time.

Two indicators may also appear on the System Manager status line. The alarm indicator (*) appears when the alarm for a Calendar event signals. The phone indicator (♪) appears when the phone is ringing and the computer is connected to a modem.

Choosing Files

When you first start the Tandy 600, the cursor highlights the Word application. To choose another application file or a data file, use the arrow keys to move the cursor to that file.

Press ☐→☐ and ☐←☐ to move the cursor to the next and previous filename on a row, respectively. Press ☐↓☐ and ☐↑☐ to move the cursor to the next and previous filename in a column, respectively. Press ☐CTRL☐ ☐↑☐ to move the cursor to the first file on the screen. If there is more than 1 page (12 lines) of filenames, press ☐CTRL☐ ☐↓☐ to move the cursor to the first filename on the last page.

Press ☐ENTER☐ to Run (the proposed command) the currently highlighted application.

The Command Menu

The System Manager command menu offers 7 commands: Copy, Delete, List, Name, Options, Run, and Set. Because it is the most frequently used command, Run is the proposed (highlighted) response. Choose commands from the command menu to instruct System Manager to perform file operations.

To Run an application file, move the highlighted cursor over the application name or over the name of a data file for the application. Press [ENTER].

To use a command other than Run, press the space bar and/or [BKSP] to place the selection marker over the command, and press [ENTER].

Naming Files

When you create a work file for an application, the first thing you do is enter a filename for the new file. Valid filenames use the following format: *filename . ext*

filename	a name you choose to identify the file
	Type 8 or fewer letters and/or numbers, including special symbols: $ & % ' ( ) @ { } ! No spaces are allowed.
.	needed only when an extension follows
extension	a three character extension to identify the application
	Type 3 or fewer letters and/or numbers, including special symbols: $ & % ' ( ) @ ^ { } ! No spaces are allowed.

When you are creating a file within an application, the program automatically adds the appropriate extension. Refer to "Work File Extensions" for the proper extensions for each application's data files. If you create an unspecified file or copy a file to the Tandy 600 from another computer, you may have to add the appropriate extension and/or restructure the data. Refer to Appendix C.

If you place the cursor over PLAN, and press ENTER, the following
prompt/response fields appear in the command area:

```
RUN application: PLAN                    file:
```

Press TAB to move to the file prompt. The message line displays:

```
Enter work file name
```

Type a name for the new work file you are creating, for our example,
ESTIMATE. (The correct extension, .PLN is added automatically;
you do not see it on the screen unless you list the files.)

Press ENTER to carry out the command. A new Plan file is created,
and the first part of the worksheet appears on the screen. Plan:
ESTIMATE appears on the status line. Press CTRL F10 to return to
the System Manager screen.

Using Wildcard Characters

"Wildcard" characters (* and ?) let you specify all files that match a partial
filename you enter. This enables you to use a command on more than one
file at a time. Copy, Name, Delete, and List allow the use of wildcard
characters.

The most common use of wildcards is copying a group of files from disk to
RAM or RAM to disk. If a file exists with the same name, a message asks
you if you wish to overwrite it. If you use a combination of wildcard
characters that is not valid, a message informs you that you have entered an
invalid filename.

*   Represents one or more characters in a filename and/or extension. One
    * is allowed in the filename, and one * is allowed in the extension.

INVESTER.WRD   TEST.WRD   INVEST.PLN   TEST.PLN

*.WRD   includes: INVESTER.WRD and TEST.WRD
INVEST*.* includes: INVESTER.WRD and INVEST.PLN
EST.   includes: TEST.WRD, INVEST.PLN, and TEST.PLN

?   Replaces any single character in a filename and/or extension.

TEST1.WRD   TEST2.WRD   LETTER.WRD   TESTER.PLN

TEST?.WRD includes: TEST1.WRD and TEST2.WRD
???TER.*   includes: LETTER.WRD and TESTER.PLN

The Commands

Copy

Use the Copy command to make an exact duplicate of one or more files stored in memory or on diskette.

To copy a file:

1. Use the arrow keys to place the cursor on the file you wish to copy.

2. Press C for the Copy command. The screen shows:

   COPY file: *d: filename.ext*   to:

   The proposed filename is the file highlighted by the cursor. (The drive designation, or "name," appears only for disk files.) Type a filename, including an extension, to copy a different file. Include a disk drive name (A:) to copy a disk file.

3. Press TAB. At the to: prompt, type a new filename. Be sure to include an appropriate file extension. If no extension is added, the new file becomes an unspecified data file. Include a disk drive name (A:) to copy to disk.

4. Press ENTER. The file is copied.

> COPY file: LETTER.WRD   to: A:LETTER.WRD█
>
> Copies the Word file, LETTER, from memory to disk.

To copy more than one file at a time, use wildcards (? and *). Use wildcards in both the original file and the target (to:) file to copy a group of files to another group. Refer to "Using Wildcard Characters" for more information on using wildcards.

> COPY file: TEST*.WRD   to: TEST*.TXT█
>
> Copies all Word files beginning with TEST to corresponding files with the .TXT extension.

Maximum File Size

When copying one file to another, the file to which you are copying often contains additional information, such as formatting instructions or margin specifications, not stored in the original file. Therefore, it is possible to run out of space while copying a file even though it contains less than the maximum 64K bytes of information.

When the maximum file size is reached, the copy procedure stops. The screen shows:

    Output file too large

If you see this message, delete any unnecessary data from the original file, then copy it again.

Delete

Use the Delete command to erase one or more files from memory or from a diskette.

To delete a file:

1. Use the arrow keys to place the cursor on the file you wish to delete.

2. Press ⬜D⬜ for the Delete command. The screen shows:

       DELETE file: d: filename.ext   ■

   The proposed filename is the file highlighted by the cursor. (The drive designation, or "name," appears only for disk files.) Type a filename to delete a different file. Include a disk drive name (A:) to delete a file from disk.

3. Press ⬜ENTER⬜. The file is deleted.

    DELETE file: A:LETTER.WRD■
    Deletes the Word file, LETTER, from disk.

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To delete more than one file at a time, use wildcards (* and ?). Delete file (y/n)? appears for each matching file. Press Y or N. After the last file is deleted, press any key to continue. Refer to "Using Wildcard Characters" for more information on using wildcards.

```
DELETE file: TEST*.WRD█
```
Deletes all Word files beginning with TEST.

List

Use the List command to list a file or files on the screen, the printer, or to a disk file. The information shown in a list consists of: filename, read only file (R), hidden file (H), archive bit set (A), date and time of file creation, and file size in bytes.

1. Press L for the List command. The screen shows:

```
LIST file: █              to:
```

   Type the name of the file you want to list. Include a disk drive designation, or "name," (A:) to list a disk file. Leave the field blank to list all memory files. Type A: to list all disk files.

2. Press TAB. At the to: prompt, type an output device.

   PRN: prints the list on your printer

   filename . ext prints the list to another file (include a disk drive name to list to a disk file)

   leave the field blank to print the list on the screen.

3. Press ENTER. The files are listed.

   If a screen list occupies more than one screen, press any key to display the next screen. At the last screen, press any key to return to System Manager. Press SHIFT PAUSE (BREAK) to cancel the list and return to the System Manager screen.

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To list more than one file (but not all), use wildcards (* and ?). Refer to "Using Wildcard Characters" for more information.

```
LIST file: *.WRD          to: PRN:█
```
Prints a list of all Word files.

Name

Use the Name command to rename a file.

1. Use the arrow keys to place the cursor on the file you wish to rename.

2. Press ⬚N⬚ for the Name command. The screen shows:

```
NAME file:  d: filename.ext        to:
```

   The proposed filename is the file highlighted by the cursor. Type a filename to rename a different file. Include a disk drive designation, or "name," (A:) to rename a disk file.

3. Press ⬚TAB⬚. At the to: prompt, type a new filename. Be sure to include an appropriate file extension. If no extension is added, the renamed file is regarded as an unspecified data file. Include a disk drive name (A:) to save the file back to disk.

4. Press ⬚ENTER⬚. The file is renamed.

   To rename more than one file at a time, use wildcards (? and *). Refer to "Using Wildcard Characters" for more information on wildcard characters.

```
LETTER.WRD       MEMO.WRD

NAME file: *.WRD          to: *.DAT█
```
Renames all Word files to include the .DAT extension. The files in this example become: LETTER.DAT and MEMO.DAT.

Options

Use the Options command to set the Disk Reference function key ([F3]) to alternate between data files stored in RAM memory and data files stored on disk.

If you first set Options, then press [F3], the System Manager screen displays data files on disk instead of files in memory. Press [F3] again to display data files stored in memory on the System Manager screen.

To set Options:

1. Press [O] for the Options command. The screen shows:

   OPTIONS drive: d

2. Type a disk drive designation, or "name." The default, A, should be used unless an auxiliary drive is connected.

3. Press [ENTER]. The computer redraws the System Manager screen and displays the disk files. The Disk Reference key, [F3], is now set. After you set it, simply press [F3] to change the System Manager screen from disk files to RAM files (or from RAM files to disk files). It is not necessary to use the Options command again.

   Press [F3] to return to the RAM file display.

Run

Use the Run command to run an application, create a new file, or open an existing file. Run is the proposed response on the System Manager command menu. Because it is already highlighted, you can press [ENTER] to carry out the Run command. If you have moved the marker to highlight another command, press [R] for the Run command.

When you choose and carry out the Run command while the cursor is on the Calendar or Telcom application, the first screen for the application appears. Refer to the "Calendar" and "Telcom" chapters for instructions on using these applications.

To create a new work file for Word, File, or Plan:

1. Use the arrow keys to place the cursor on the name of the application you wish to run.

2. Press ⌈ENTER⌉ for the Run command. The screen shows:

    RUN application: *filename*   file:

    The proposed application is the file highlighted by the cursor. Type an application name to run a different application.

3. Press ⌈TAB⌉. At the file: prompt, type a name for the new work file. There is no need to include a file extension; the application adds one automatically. Include a disk drive name (the one you entered in the Options command) to create the work file on disk.

4. Press ⌈ENTER⌉. The file is created, and the first screen of the application program appears. Refer to the "Word," "File," and "Plan" chapters for instructions for using these applications.

    Note: If you press ⌈ENTER⌉ without typing a name for the work file, the file is named WORK.

To open an existing work file for Word, File, or Plan:

1. Use the arrow keys to place the cursor on the name of the work file you wish to open.

2. Press ⌈ENTER⌉ for the Run command. The work file appears. The cursor is positioned on the same character(s) as when you last accessed the work file.

    To open an unspecified data file:

1. Use the arrow keys to place the cursor on the name of the data file you wish to open.

2. Press ⌈ENTER⌉ for the Run command. The screen shows:

    RUN application: file: *filename*

    Type an application filename.

3. Press ⌈TAB⌉. The proposed filename is the data file highlighted by the cursor. Type a filename to run a different data file. Do not type a file extension; unspecified data filenames do not have extensions. Include A: if the file is on disk.

4. Press ⌈ENTER⌉ for the Run command. The application displays the data file. The cursor is positioned on the same character(s) as when you last accessed the data file.

Note: If the named application cannot run the data file, an empty
work file is created for the application. The new work file has
the same name as the data file. An empty screen appears for
the new work file.

Set

Use the Set command to enter settings that affect the entire system. The Set
command consists of a menu containing the Clock, Printer, Sleep, Tone,
and Wake subcommands.

Set Clock

Use the Set Clock command to set the system date and time.

1. Press ⬚S⬚ for the Set command.

2. Press ⬚C⬚ or ⬚ENTER⬚ for the Clock subcommand (the proposed response).
   The screen shows:

   ```
   SET CLOCK date: 06/20/1985              time: 11:30:15 AM■
   ```

   Type a new date, in the format shown above, if the one shown is not
   correct. There is no need to type leading zeros.

3. Press ⬚TAB⬚. Type a new time if the time shown is not correct. (Skip the
   field to default to 12: 00: 00 am.) When you type a time, you may leave
   off hours, minutes, or seconds. Include AM or PM; no entry defaults to
   AM. There is no need to type leading zeros.

4. Press ⬚ENTER⬚. The new date and time appear on the status line of the
   System Manager menu.

   ```
   SET CLOCK date: 1/1/1986              time: :30■
   ```

   Sets the date at January 1, 1986. Sets the time at 12 : 00 : 30 am.

   time: :8:PM   Sets the time at 12 : 08 : 00 pm.
   time: PM   Sets the time at 12 : 00 : 00 pm.
   time: 0 : 30   Sets the time at 12 : 30 : 00 am.

Set Printer

Use the Set Printer command to set printing information (page size and margins).

1. Press ⬚S⬚ for the Set command.

2. Press ⬚P⬚ for the Printer subcommand. The screen shows:

```
SET PRINTER feed: continuous Sheet  page width: 85          length: 66
            margin top: 6           bottom: 6        left: 13        right: 12
```

The feed field sets the printer to handle continuous-form or single-sheet paper. Continuous is the proposed response. Use the proposed response, or press the space bar to move to Sheet.

3. Press ⬚TAB⬚ to move to the page width field. Type the width of the page in characters. A normal letter-size page is 8½" wide. If your printer uses "10-pitch" type (10 characters per inch, the usual size for computer printers), 85 characters fit on a line (10 x 8½). The maximum width is 160. Note, though, that if you are using an 80-column printer, the maximum width is 80.

4. Press ⬚TAB⬚. Type the length of the page in lines. A normal letter-size page is 11" long. Usually, there are 6 printed lines per inch, or 66 lines per page.

5. Press ⬚TAB⬚. Type the width for the top margin in lines. The default is 6 lines, or 1".

6. Press ⬚TAB⬚. Type the width for the bottom margin in lines. The default is 6 lines, or 1".

7. Press ⬚TAB⬚. Type the width for the left margin in characters. The default is 13 characters.

8. Press ⬚TAB⬚. Type the width for the right margin in characters. The default is 12 characters.

9. Press ⬚ENTER⬚. **The Printer settings determine the page layout each time something is printed from any application.**

Set Sleep

Use the Set Sleep command to enter the number of minutes the computer can remain inactive before it automatically turns off.

1. Press ⌐S⌐ for the Set command.

2. Press ⌐S⌐ again for the Sleep subcommand. The screen shows:

        SET SLEEP after: ▪▓

   Type the number of minutes the computer may remain inactive before it turns off automatically. The default is 5 minutes.

3. Press ⌐ENTER⌐. The computer turns off automatically after the specified time if no keys are pressed.

Set Tone

Use the Tone command to turn on or off an audible tone (beep) that indicates the alarm and error conditions.

1. Press ⌐S⌐ for the Set command.

2. Press ⌐T⌐ for the Tone subcommand. The screen shows:

        SET TONE for alarm: ▓Audible▓ Mute   error:(Audible)Mute

   The proposed response for the alarm is Audible. Press the space bar to choose Mute.

3. Press ⌐TAB⌐. The proposed response for error conditions is Audible. Press the space bar to choose Mute.

4. Press ⌐ENTER⌐.

If you choose an Audible alarm, the computer beeps and displays an alarm indicator (*) on the status line whenever the Remind time is reached for an event entered in Calendar. If you choose Mute, no beep is sounded; * appears on the status line.

If you choose an Audible tone for error conditions, the computer beeps and displays an error message on the message line to indicate an invalid entry. If you choose Mute, no beep is sounded; an error message appears on the message line.

Set Wake

Use the Set Wake command to set the computer to turn on automatically at a specified date and time and enter an application work file. Note that if you plan to download a file to disk upon wake up, you must have turned off the computer with the appropriate diskette inserted.

Note that the computer **does not** automatically wake up if there are any unanswered alarms at the time specified for the wake up. (Refer to "The Alarm" in the "Other Functions" section of this chapter.)

Similarly, if the computer automatically wakes up, performs some function, then automatically shuts off again (Set Sleep), no alarms sound until you manually turn on the computer.

1. Press ⌐S⌐ for the Set command.

2. Press ⌐W⌐ for the Wake subcommand. The screen shows:

```
SET WAKE"application: █            file:
           date:   0/ 0/  0        time: 12:00 AM
```

Type the name of the application to enter when the computer wakes up.

3. Press ⌐TAB⌐. Type the name of the work file to open when the computer wakes up.

4. Press ⌐TAB⌐. Type the date on which you want the computer to wake up. Follow the same rules for date entry as in the Set Clock command.

5. Press ⌐TAB⌐. Type the time at which you want the computer to wake up. Follow the same rules for time entry as in the Set Clock command.

6. Press ⌐ENTER⌐. The computer wakes up automatically at the specified date and time. The application screen for the specified file appears. The cursor appears in the same position on the screen as when the file was accessed last.

Other Functions

The Calculator

The Calculator function performs much like a four-function pocket calculator equipped with memory. It performs simple addition, subtraction, multiplication, and division. Access the Calculator function (CALC) from within any application by pressing CTRL F2. A small Calculator area, or "window," appears on top of the current application screen.
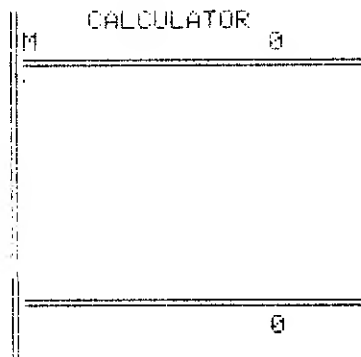
Figure 11. Calculator Window

Calculator uses a 14-place (no commas), floating decimal point format. The largest number you can enter or accumulate is ±99,999,999,999,999. The smallest number is ±0.000000000001.

Calculator uses these operator symbols:

+	add
−	subtract
*	multiply
/	divide
=	total the equation

Press [C] to clear the input line. Press [CTRL] [F2] again to clear the entire calculator.

To perform a calculation:

1. Type the first number. Include a decimal (**.**) if the number is not an integer. The number appears on the input (bottom) line as you type. Each new numeral pushes the others one character to the left.

2. Type the operator symbol. The number appears in the entries (middle) area of the Calculator window. The operator appears after the number. The specified operation is performed on the number preceding the operator and the number following it.

3. Continue typing numbers for calculation. The running-total always appears on the input line.

4. Press [=] after the last number. The result appears on the last line of the entries area and on the input line.

Memory

Calculator also performs memory functions. A running-total of memory calculations appears at the top of the Calculator window.

M+	adds the number on the input line to the number in memory
M−	subtracts the number on the input line from the number in memory
M*	multiplies the number in memory by the number on the input line
M/	divides the number in memory by the number on the input line
M=	replaces the number in memory with the number on the input line
MR	replaces the number on the input line with the number in memory
ME	exchanges the number in memory and the number on the input line
MC	clears memory
C	clears the input line

While using Calculator, all operation of the current application ceases. After your calculations are complete, press [CTRL] [F10] to erase the calculator window and continue with the current application.

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The Alarm

Alarm works in conjunction with the Calendar application to display events for which you set a Start time and/or a Reminder time. Three short beeps sound at the reminder time (if the audible alarm is set) to signal an event. A blinking alarm indicator (*) appears on the status line until you view the event(s) with the Alarm function.

If you do not view, or "answer," an alarm event, the alarm indicator continues to blink. **The audible alarm (beep) does not sound for successive alarm events if there is one or more unanswered event.**

Access the Alarm function from within any application by pressing CTRL F3. The last Calendar events for which an alarm has "gone off" appear, for example:

```
 ||Start     ||Stop      ||P||R||Note
 ||10:00 AM  ||12:00 PM  ||H|| ||Meeting with client            ||
 ||12:30 PM  || 1:30 PM  ||H||R||Lunch with client
 || 2:45 PM  ||          ||H||R||Sign contracts



 > Note Snooze
 Copyright (1984, 1985) Microsoft Corp.
 Alarm                                      10/23/1985   3:00:26 PM
```

Figure 12. Alarm Screen

For more information on these fields, refer to "Chapter 3, Calendar." The Alarm screen displays all Calendar events for which the Reminder time (or the start time) has expired. Events not yet passed and events already viewed with the Alarm function do not appear. Use the arrow keys to scroll through the events. (You cannot redisplay an event after you scroll it off the screen.) Two Alarm commands, Note and Snooze, appear on the command menu at the bottom of the screen.

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Use the Note command to view a Note that is too long to fit in its window. Press N for Note. The entire Note text appears at the bottom of the screen. Press ENTER to continue.

Use the Snooze command to reschedule an alarm. Press S for Snooze. The Snooze command fields appear. Type a new start time. Press TAB, and type a new reminder time. (You cannot enter a new time for a blank field.) Press ENTER. The event times are changed. The alarm will sound again at the time set if it has not yet passed.

After you view all the Alarm events, press CTRL F10 to continue with the current application (or return to the System Manager screen)

Chapter 2 Word

WORD is a powerful tool for producing memos, letters, reports, brochures, term papers, technical papers, and other documents. Word is perfectly suited for use at home, school, or in the office. Additionally, the small size and portability of the Tandy 600 makes Word the ideal "notepad" to use away from your desk.

Using Word on the Tandy 600 is easier than using a typewriter. With a few simple commands, you can edit your document by copying, moving, inserting, deleting, or erasing text. You can also search for or search for and replace text. Select a single character, a line, a sentence, or the entire document on which to perform edits.

Several commands are also available to change the appearance of your document. Choose your own margins, tab positions, paragraph formats, line spacing, indents, page breaks, and so forth. You can also merge another Word document or a text file from any other source into the current document. Furthermore, you can transfer text created in Word into other application programs.

Special Word Keys

Function Keys

Word uses the following function keys:

F1	Functions the same as LABEL.
F5	Controls the Scrap Mode. Replace is the default scrap mode; copied or deleted data replaces the current scrap contents. No scrap indicator appears on the status line for the Replace mode.
	Press F5 once for the Append mode; copied or deleted data is appended to the current scrap contents. Ap appears on the status line.
	Press F5 twice for the No Scrap mode. Ns appears on the status line. Press F5 again to return to the Replace scrap mode.
F6 – F10	Function as Selection Keys. Refer to "Word Selection Keys."
SHIFT F1	Functions the same as SHIFT LABEL.
SHIFT F3	Searches all text before the cursor (Up) for the last Search text entered in the Search command.
SHIFT F4	Searches all text after the cursor (Down) for the last Search text entered in the Search command.
SHIFT F7 – SHIFT F10	Function as selection keys. Refer to "Word Selection Keys."
CTRL F1 – CTRL F10	Function as system function keys. Refer to "System Function Keys" in the Overview.

Text Editing Keys

BKSP	Moves the cursor back one space (BACKSPACEs), erasing the character it moves over.
SHIFT BKSP (DEL)	Deletes the selected text or the character under the cursor and places it in the scrap. (If the No Scrap mode is chosen, the text is lost.)
F2	Inserts the contents of the scrap at the current cursor location.
SHIFT F2	Replaces selected text with the current contents of the scrap. The data in Scrap remains unchanged.
SHIFT F5	Changes between the Insert mode and the Overtype mode of typing. Insert is the default typing mode. Each character you type is inserted at the current cursor location and pushes any following text to the right one character. No typing mode indicator appears on the status line for the Insert mode.

Press SHIFT F5 once for the Overtype mode. Each character you type replaces, or overtypes, the character at the current cursor location. Ot appears on the status line. Press SHIFT F5 again to return to the Insert typing mode.

Text Formatting Keys

Word automatically moves to the next line, or "word wraps," when a word will not fit on the current line. Other formatting options are also available to give your documents a more polished look. You can select, delete, copy, or move any of these formatting symbols.

ENTER	Starts a New Paragraph. A paragraph mark (¶) appears at the end of the previous paragraph.
SHIFT ENTER	Starts a New Line without starting a new paragraph. A new line mark (↓) appears at the end of the previous line.

CTRL ENTER	Starts a New Page (for page breaks during printing). A line of dots appears across the screen to indicate a new page.
TAB	Moves the cursor to the next Tab stop. Tabs are set every 5 characters when you begin Word.

Text Scrolling Keys

SHIFT ↑	Scrolls to the previous screen. The first two lines of the screen from which you scrolled appear as the last two lines of the new screen.
SHIFT ↓	Scrolls to the next screen. The last two lines of the screen from which you scrolled appear as the first two lines of the new screen.
CTRL ←	Scrolls the cursor to the leftmost character of the current line.
CTRL →	Moves the cursor to the rightmost character of the current line.
CTRL ↑	Moves the cursor to the first character in the document.
CTRL ↓	Moves the cursor to the last character in the document.

Text Selection Keys

F6	Extends the current selection (highlighted text). F6 works in conjunction with the selection keys: F7, F8, F9, F10, and the arrows. Ex appears on the status line.
←	Selects the next character to the left when used with Extend Select (F6).
→	Selects the next character to the right when used with Extend Select (F6).

↑	Selects the previous line when used with Extend Select (F6).
↓	Selects the next line when used with Extend Select (F6).
F7	Selects (highlights) the first Word to the Left of the cursor that is not already selected. If the cursor is in the middle of a word, F7 selects that word. Press an arrow key to "unselect" the word.
F8	Selects (highlights) the first Word to the Right of the cursor that is not already selected. If the cursor is on a word, F8 selects that word. Press an arrow key to "unselect" the word.
F9	Selects (highlights) the Sentence in which the cursor is currently placed. Press an arrow key to "unselect" the sentence.
F10	Selects (highlights) the Paragraph in which the cursor is currently placed. Press an arrow key to "unselect" the paragraph.
SHIFT F7	Selects the Previous Sentence. If the cursor is within a sentence, SHIFT F7 selects that sentence. Press an arrow key to "unselect" the sentence.
SHIFT F8	Selects the Next Sentence. If the cursor is within a sentence, SHIFT F8 selects that sentence. Press an arrow key to "unselect" the sentence.
SHIFT F9	Selects the Line in which the cursor is currently placed. Press an arrow key to "unselect" the line.
SHIFT F10	Selects the entire Document. Press an arrow key to "unselect" the document.

Command Keys

ESC   Goes into the Command mode. Edit is the default
                       command on the menu.

ESC   In the Command mode, cancels the command and
                       returns to the command menu. Edit is again
                       highlighted as the default command. Press E to
                       quit the Command mode and return to the Edit
                       mode.

ENTER   In the Command mode, carries out the current
                       command using default values or values you fill in
                       for the command fields. Word returns to the Edit
                       mode.

Special keys for the command menu are:

TAB   Moves to the next command.
or space bar

SHIFT TAB   Moves to the previous command.
or BKSP

Special keys for the command fields are:

TAB   Moves to the next command field.

SHIFT TAB   Moves to the previous command field.

space bar   Moves to the next item in a menu-type command
                       field.

BKSP   Moves to the previous item in a menu-type
                       command field.

Starting and Quitting Word

Word is the first application name that appears on the System Manager screen. When you first start the Tandy 600 or return to the System Manager screen from another application, the cursor highlights the Word application. Run is the default on the System Manager command menu.

To create a Word file:

1. Place the cursor over WORD, place the command selection marker over Run, and press [ENTER]. The Run command fields appear:

   RUN application: WORD   file:

2. Press [TAB]. Type a name for the work file you are creating. If you do not type a filename, Word names your file WORK.

3. Press [ENTER]. A Word screen appears.

   To run an existing Word file:

1. Use the arrow keys to place the cursor over the name of the Word work file you want to run.

2. Place the command selection marker over Run, and press [ENTER]. The Word document appears. The cursor appears in the same position as when you last accessed the file. Word begins in the Edit mode.

Quit the Word application and return to the System Manager by pressing [CTRL] [F10]. Quit the Word application and return to the previously accessed application by pressing [CTRL] [F9].

The Word Screen

When you create a new file or open an existing file, the Word screen appears. The Word command menu, message line, and status line appear at the bottom of the screen. Because Word defaults to the Edit mode rather than the Command mode, no command selection marker appears.

᠁

```
> Copy Delete Edit Format Insert Jump Merge Options Print Replace Search
Copyright (1984, 1985) Microsoft Corp.
Word: WORK        ()
```

Figure 13. A Typical Word Screen

The status line displays the name of the current application and work file, the contents of the scrap, and indicators for any active modes.

The Word Commands

Edit is the default mode for Word; when you create a work file, the program goes into the edit mode automatically. Use Word in the Edit mode to create and revise, or "edit," documents. Refer to the "Edit" section in this chapter for more information.

Copy

Use the Copy command to duplicate, or "copy," text. Choose either the Replace or Append scrap mode before you copy the text. Select the text, then copy it.

1. Use the arrow keys and/or the text selection keys to select the text you want to copy.

2. Press ⌐ESC⌐ to go to the Command mode.

3. Press ⌐C⌐ for the Copy command. The selected text is copied to the scrap, replacing the current scrap data or appending to it, depending on the scrap mode. (Note that you do not press ⌐ENTER⌐ to carry out the Copy command.)

   Now use the Insert or Replace command to insert the scrap data elsewhere in the current document or into another document or file.

Delete

Use the Delete command to delete a single character or all selected text from a document. You can delete the text without saving it or save it into the scrap. See "The Scrap" in the Overview chapter of this manual for more information.

1. Use the arrow keys and/or the text selection keys to select the text you want to delete.

2. Press ⌐ESC⌐ to go to the Command mode.

3. Press ⌐D⌐ for the Delete command. All selected text is deleted. Delete erases the character under the cursor if no text is selected.

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If either the Replace or Append scrap mode was in effect before you deleted the text, the deleted text appears between the braces on the status line.

Note: You can also press [SHIFT] [BKSP] ([DEL]) to delete to the scrap.

Edit

Use the Edit command to put Word in the Edit mode. Create and revise, or "edit," documents in the Edit mode. Use the function keys to select characters, words, and/or larger blocks of text for editing. You can also search for (or search for and replace) selected text in your document while in the Edit mode. Further, you can access the Calculator and Alarm functions from the Edit mode.

From the command mode, press [E] for Edit. Word returns to the Edit mode. No commands are highlighted on the menu when Word is in the Edit mode. Pressing [ESC] puts Word into the Command mode.

Format

Use the Format command to determine the appearance, or "format," of your document. The Format command consists of a menu containing the Paragraph, Tabs, Document, and Repaginate subcommands.

If you create and print a simple document and print it on 8½″ × 11″ paper, you can skip the Format command and use Word's proposed responses.

For more customized formats, use the Format command to tailor the appearance of your document to your own style and needs. The values you set are saved **only** for the current document. You can create a new document, set a format, then copy the blank document to use each time you need that format again. You can have several different styles without having to reenter the formats each time.

Format Paragraph

1. Use the arrow keys and the text selection keys to select the paragraphs you want to format, or position the cursor within or over the paragraph mark at the end of the individual paragraph you want to format.

2. Press [ESC] to go to the Command mode.

3. Press ⬚F⬚ for the Format command. The screen shows:

```
FORMAT:  Paragraph Tabs Document Repaginate
```

Press ⬚ENTER⬚ to use the proposed response, Paragraph. The Format
Paragraph command fields appear:

```
FORMAT PARAGRAPH alignment:  Left Centered Right Justified -        keep: Yes(No)-
               left indent: 0            first line: 0        right indent: 0
               line spacing: 1           space before: 0      space after: 0
```

4. Type new responses for the fields, as needed. If two or more paragraphs
   are selected that use conflicting formats (one is aligned left, one is
   aligned right, one has a 0 left indent, one has a 5 left indent, and so
   forth), – or a blank appears for the conflicting fields. Do not change the
   values if you want to retain those individual formats.

   Press ⬚TAB⬚ to move between the fields. Press the space bar to move
   between the menu-type responses in the alignment and keep fields.
   Details of the command fields are presented separately on the next few
   pages.

5. Press ⬚ENTER⬚ to carry out the Format Paragraph command after all the
   command field entries are correct. The selected paragraph(s) is(are)
   formatted according to the command field entries. Each new paragraph
   uses the most recent paragraph format.

Paragraph Alignment

The paragraph alignment command field determines the position of
paragraphs on the page.

Left, the proposed response, positions selected paragraphs flush with the
left margin and uses a ragged right margin.

Centered positions selected paragraphs in the center of the page and uses
ragged left and right margins.

Right positions selected paragraphs flush with the right margin and uses a
ragged left margin.

Justified positions selected paragraphs flush with both the right and left
margins, inserting spaces between words to expand the lines, as needed.

– keeps the current alignment value for each paragraph if two or more
paragraphs with conflicting alignments are selected.

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Paragraph Printing Instructions (Keep)

The keep command field determines where a paragraph is printed if there is not enough space for it at the bottom of the current page.

Yes moves the entire paragraph to the next page.

No prints part of the paragraph at the bottom of the current page and the remainder at the top of the next page.

– keeps the current keep value for each paragraph if two or more paragraphs with conflicting keep values are selected.

Paragraph Indentation

The paragraph left indent, first line, and right indent command fields insert temporary margins for specific paragraphs.

Left indent sets the distance from the left document margin to the beginning of the selected paragraphs (the left paragraph indent). This number must always be positive.

Right indent sets the distance from the right margin to the end of the selected paragraphs (the right paragraph indent). This number must always be positive.

First line sets the distance from the left paragraph indent to the beginning of the first line in the paragraph. The measurement can be a positive or negative number. A positive number indents the first line more than the left paragraph indent. A negative number indents the first line less than the left indent. Examples of first line indents are shown below.

```
This is the first line of a paragraph. The
    first line indent is set as a
    negative number.¶

        This is the first line of a
paragraph. The first line indent is set as a
positive number.¶
¨
```

Blanks in the indent fields keep the current indent values for each paragraph if two or more paragraphs with conflicting indents are selected.

Paragraph Spacing

Paragraph spacing includes line spacing, extra space before a paragraph, and extra space after a paragraph.

Line spacing determines the number of blank lines that will appear between each line in the selected paragraphs. The proposed line spacing value is 1, which indicates "single-spaced." Single-spaced paragraphs do not contain blank lines between text lines. You can enter any line spacing value.

Space before determines the number of extra blank lines that will appear before each paragraph. The number you enter is added to any blank lines already entered in the edit mode.

Space after determines the number of extra blank lines that will appear after each paragraph. The number you enter is added to any blank lines already entered in the edit mode.

Blanks in the spacing fields keep the current line spacing and paragraph spacing values for each paragraph if two or more paragraphs with conflicting spacing are selected.

Format Tabs

Tab stops are positions used to align text in columns to create tables. Word presets tab stops every 5 columns. Pressing ⌈TAB⌉ in the Edit mode moves the cursor to the next tab stop. Change or add to the preset tab stops with the Format Tabs command. The new tabs apply to all new paragraphs you type.

The ruler appears when you choose the Format Tabs command, and the cursor appears on the first ruler position. Make your tab changes directly on the ruler.

1. Press ⌈ESC⌉ to go to the Command mode.

2. Press ⌈F⌉ for the Format command. The screen shows:

FORMAT: Paragraph Tabs Document Repaginate

Press ⌈T⌉ for the Tabs subcommand. The screen shows:

FORMAT TABS: ■

3. Use ⊡ and ⊡ to position the cursor on the ruler line. Press ⎣F2⎦ (Insert) to insert a new tab stop at the current position. T appears to indicate the new tab stop. Press ⎣SHIFT⎦ ⎣BKSP⎦ (⎣DEL⎦) to delete an existing tab stop. Note that you cannot delete preset tab stops.

4. Press ⎣ENTER⎦ to carry out the Format Tabs command and change the tab stops for all new paragraphs.

When using tabs to create a table, be sure to press ⎣SHIFT⎦ ⎣ENTER⎦ at the end of each line of the table. This ensures that the tab stops for the entire table are the same.

Format Document

Use the Format Document command to change the page format, the overall appearance of the document. Unlike the System Manager Set Printer command, the Format Document command settings affect only the current document.

1. Press ⎣ESC⎦ to go to the Command mode.

2. Press ⎣F⎦ for the Format command. The screen shows:

```
FORMAT:  Paragraph Tabs Document Repaginate
```

Press ⎣D⎦ for the Document subcommand. The screen shows:

```
FORMAT DOCUMENT page width: 65
         margin top: 6        bottom: 6              left: 13    page length: 66
         page numbers:(Yes)No          start at: 1         right: 12
```

3. Type new responses for the fields, as needed.

Press ⎣TAB⎦ to move between the fields. Press the space bar to move between Yes and No in the page numbers field. Details of the command fields follow.

4. Press ⎣ENTER⎦ to carry out the Format Document command after all the command field entries are correct. The document is formatted according to the command field entries. The changes you make affect the entire document.

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Page Size

The page width and length settings determine how much text will appear on a page.

Page width is the number of characters to print across a line, **including** left and right margins. For example, an 80 character page width and left and right margins of 10 each prints 60 characters on each line.

Page length is the number of lines to print on each page, **including** top and bottom margins. For example, a 66 line page length and top and bottom margins of 6 each prints 54 lines on each page.

Margins

Margin settings include the top, bottom, left, and right margins.

Margin top determines the number of blank lines that appear from the top of each page to the first line of text.

Bottom determines the number of blank lines that appear from the last line of text to the bottom of each page.

Left determines the number of blank spaces that appear from the left edge of the paper to the beginning of the text lines (not including the left paragraph indent).

Right determines the number of blank spaces that appear from the last character on a line to the right edge of the paper (not including the right paragraph indent).

Page Numbers

Word uses the page number fields to number document pages automatically as it prints. Page numbers appear on the printed copy but not on the screen.

Page numbers determines whether or not pages will be numbered.

Start at determines the number which with page numbering will begin. Use this field to consecutively number pages when a document is split between two or more files.

Format Repaginate

Use the Format Repaginate command to insert page breaks in a document without printing it.

1. Press ⌈ESC⌉ to go to the Command mode.

2. Press ⌈F⌉ for the Format command. The screen shows:

        FORMAT: ▓▓▓▓▓▓▓▓ Tabs Document Repaginate

3. Press ⌈R⌉ for the Repaginate subcommand. The screen shows:

        FORMAT REPAGINATE:
        Formatting page n

    The command menu appears again when the repagination is complete.

Insert

Use the Insert command to insert the text from the scrap at the current cursor location.

1. Use the arrow keys to position the cursor where you want to insert the text.

2. Press ⌈ESC⌉ to go to the Command mode.

3. Press ⌈I⌉ for the Insert command. All text in the scrap is inserted in front of the cursor.

The text in the scrap is unaffected. Insert the text as many times as you want. Only the Copy and Delete commands affect the contents of scrap.

Jump

Use the Jump command to move, or "jump," to a specific page or a certain place in a document. The Jump command consists of a menu containing the Page and % subcommands.

Jump Page

Use the Jump Page command to jump to a specific page. Only documents that have been printed or repaginated (Format Repaginate) contain pages that you may access with the Jump command. Refer to "Format" in this chapter for more information on repagination.

1. Press [ESC] to go to the Command mode.

2. Press [J] for the Jump command.

3. Press [P] or [ENTER] for the Page subcommand (the proposed response). The screen shows:

    JUMP PAGE number : 1

4. Type the number of the page you want. Press [ENTER].

Jump Page moves to the specified page according to the page breaks assigned during the last printing or repagination. The cursor appears on the first character of the page. If the document has not been printed or repaginated, Jump Page moves the cursor to the first character of the document.

Jump %

Use the Jump % command to jump to an approximate place within a document (the first half, the last third, and so forth).

1. Press [ESC] to go to the Command mode.

2. Press [J] for the Jump command.

3. Press the space bar to move to the % subcommand, and press [ENTER]. The screen shows:

    JUMP percentage : 50

Press ENTER to use 50%, or type a percentage from 0 to 100, and press ENTER. The cursor moves to the character in the document that corresponds to the percentage entered. For example, in a 1000 character document, 25% moves the cursor to the 250th character, to the end of the first ¼ of document.

Merge

Use the Merge command to insert one document into another at the current cursor location. Merge a Word document or any text file.

1. Use the arrow keys to position the cursor where you want to insert the document or text file.

2. Press ESC to go to the Command mode.

3. Press M for the Merge command. The screen shows:

```
MERGE from: ■
```

4. Type the name of the file (including the filename extension) you want to merge into the current document. Press ENTER. All text in the file is inserted in front of the cursor.

The text in the merged file or document is unaffected.

When you merge one document into another, the formatting information is inserted at the beginning of the merged data. It appears as "garbage" characters in the document, and is often quite lengthy. The merged data itself is not formatted. If you merge a document, you must delete the formatting information and reformat the merged data.

Because of this, we recommend that you use the Print command to save a document in a text file format before merging it into another document. The formatting information is not displayed when you merge a text file. Also, because the document is saved as a formatted text file, it merges with its formatting.

Options

Use the Options command to set or change the Word screen options. Screen options include a ruler that indicates relative screen positions, overtype or insert typing mode, and visible or invisible formatting marks (new paragraph and new line marks). New page marks and end of document marks appear in either visible or invisible mode.

Also, each time you carry out the Options command, the lesser of the amount of available system memory or available work space appears on the message line.

Note: If you do not change the screen options for each document, the default proposed responses are used.

1. Press [ESC] to go to the Command mode.

2. Press [O] for the Options command. The Options command fields appear:

```
OPTIONS ruler: Yes NO    overtype: Yes(No)   visible:(Yes)No
```

3. No is the proposed response. Press the space bar to choose Yes if you want a ruler to appear at the top of the screen when you carry out the Options command.

```
[++++*++++1++++*++++2++++*++++3++++*++++4++++*++++5++++*++++]++++*++++7++++*++
```

Plus symbols appear on the ruler for each character position, including a raised symbol for each fifth position. Numbers indicate every tenth position (1 for 10, 2 for 20, and so forth). Tabs are preset at every raised + and number. A capital letter T appears for each tab you set with the Format Tabs command. A ¦ symbol appears for the first line indent.

Brackets on the ruler indicate the width of the text, as determined by the page width and margins (left and right) in the Format Document command. The left bracket ([) usually appears as the first character on the ruler. The right bracket appears in place of the 6 when the default margins from the Format Document command are used. This indicates a 60 character printed page width (85 page width - 13 left margin - 12 right margin = 60).

If left and/or right indents are set in the Format Paragraph command, [and] indicate the left and right indents, respectively. A zero (0) appears on the ruler to indicate the left margin if a left indent is set.

4. Press ⌴TAB⌴ to move to the overtype field. The proposed response is No. Press the space bar to choose Yes if you want to use the Overtype typing mode for this document. Ot appears on the status line when you carry out the Options command.

5. Press ⌴TAB⌴ to move to the visible field. The proposed response is Yes. Press the space bar to choose No if you do not want the new paragraph and new line marks to appear on the screen for this document when you carry out the Options command.

6. Press ⌴ENTER⌴ to carry out the Options command.

Print

Use the Print command to print documents. The Print command uses the Printer settings from the System Manager Set Printer command.

Before using your printer, be sure you:

● Plug the printer power cord into an electric outlet.
● Connect the printer and computer with the printer cable.
● Turn on the printer, making sure that it is ready, or "on line."
● Be sure the printer contains sufficient paper and ribbon to print your document. Properly align the paper according to the instructions for your printer.

Once you set up your printer, print your document.

1. Press ⌴ESC⌴ to go to the Command mode.

2. Press ⌴P⌴ for the Print command. The screen shows:

```
PRINT to: PRN          formatted:(Yes)No       copies: 1
          range:(All)Selection Pages       page numbers:
```

3. PRN is the proposed response for the PRINT to command. Use this response to print to the printer. Type **COM** to send the document to the RS-232 communications port; type **CON** to print it to the console screen. Type a filename to print the document to a text file.

4. Press ⎡TAB⎤ to move to the formatted command field. Yes is the proposed response. Pressing the space bar to choose No prints the document without any of the formatting codes (new paragraph and new line). Use this field when you are preparing text for another word processor or another program.

5. Press ⎡TAB⎤ to move to the copies command field. Type the number of copies you want to print.

6. Press ⎡TAB⎤ to move to the range command field. All (print all pages) is the proposed response. Press the space bar to choose Selection if you want to print only the page that includes the currently selected text. (If no text is selected, the command is ignored.) Press the space bar twice to choose Pages if you want to print only certain pages.

7. Press ⎡TAB⎤ to move to the pages command field. (This command is effective only when used with Pages in the previous command.) Type the numbers of the pages you want to print. Type a comma between individual page numbers and a colon or hyphen between consecutive page numbers. (For example, 1, 3-5, 7 : 9, 11 prints pages 1, 3, 4, 5, 7, 8, 9, and 11.)

8. Press ⎡ENTER⎤ to carry out the Print command and print the document.

Word calculates where one page ends and another begins, or "page breaks," automatically. A page break symbol (⋙) appears on the screen at the beginning of each new page. When a paragraph is split between two pages (refer to "keep" in "Format Paragraph"), Word does not leaves a single line at the bottom ("widow") or top ("orphan") of a page. Word recalculates paragraph splits to avoid widow and orphan lines.

Replace

Use the Replace command to substitute new text for any or all occurrences of text currently in your document. Replace starts at the current cursor location and continues through the end of the document. Replace all occurrences of the text without stopping at each occurrence (a "global" replace), or stop at each occurrence, replacing them as needed.

1. Use the arrow keys to position the cursor at the beginning of the document or wherever you want to begin replacing text.

2. Press ⎡ESC⎤ to go to the Command mode.

3. Press ⬚R⬚ for the Replace command. The Replace command fields appear:

```
REPLACE text: █                        with text:
        confirm:(Yes)No
```

4. Type the text you want to replace. The last **REPLACE text** or **SEARCH text** (from the Search command) entered is the default. Press ⬚TAB⬚ to move to the next command field.

5. Type the replacement text. The last **with text** entered is the default. Press ⬚TAB⬚ to move to confirm.

6. The confirm command field determines if the program stops to confirm the replacement at each occurrence of the **REPLACE text**. To confirm, this field should be **Yes** (the default). Press the space bar to move to **No** for a global replace.

7. Press ⬚ENTER⬚. The replacements begin.

Enter Y to replace, N to ignore, or press Esc to cancel appears on the message line if you choose to confirm each replacement. Press ⬚Y⬚ to replace the text and move to the next occurrence. Press ⬚N⬚ to skip this occurrence of the text and move to the next. Press ⬚ESC⬚ to cancel the Replace command and return to the command menu.

After all replacements are made, *xx* **replacement(s) made** appears on the message line.

Note: Remember that you can replace the currently selected text with the text in the scrap by pressing ⬚SHIFT⬚ ⬚F2⬚.

Search

Use the Search command to locate, or "search" for, an occurrence of certain text in a document. Search for the text from the current cursor location to the end of the document (down) or to the beginning (up). The search stops at the first occurrence of the text.

1. Use the arrow keys to position the cursor at the beginning of the document or wherever you want to begin searching for text.

2. Press ⬚ESC⬚ to go to the Command mode.

3. Press ⬚S⬚ for the Search command. The Search command fields appear:

```
SEARCH text:  ■                          direction: (Down)Up
```

4. Type the text for which you wish to search. The last SEARCH text or REPLACE text (from the Replace command) entered is the default.

5. Press ⬚TAB⬚ to move to the direction command field. Down is the default direction. Press the space bar to move to Up if you want to search from the cursor location to the beginning of the document.

6. Press ⬚ENTER⬚. The first occurrence of the text appears, highlighted.

Note: To search for more than one occurrence of specified text, use the Replace command. Choose Yes to confirm each replacement, then simply press ⬚N⬚ at each occurrence of the text.

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The Word Tutorial

When you first start your computer, the System Manager screen appears.
WORD appears, highlighted, in the upper left corner of the screen. Run is
the proposed command on the menu.

Creating a Word Work File

First, create a file called "practice."

1. At the System Manager screen, with the cursor over WORD and with
   Run as the proposed command, press ENTER. The screen shows:

   ```
   RUN application: WORD                    file:
   ```

2. Press TAB to move to file.

3. Type practice as the name of your work file. The Tandy 600 accepts
   both lowercase and uppercase input. If uppercase input is required (as
   in filenames), the computer converts the lowercase input. If you do not
   type a filename, Word automatically names the file "Work."

4. Press ENTER. A blank screen, containing only an end of file marker
   (▒) appears. The command menu, message line, and status line
   appear at the bottom of the screen.

Entering Text

Now you are ready to type a document. Type the following paragraph,
pressing ENTER only once, at the end:

> I've rescheduled the meeting for Thursday, May 15 at 4: 30 pm in my
> office. Agenda items will include a report on the Brink's contract and
> a short review of J.T.'s fact-finding study on the Brady mine in South
> Dakota. Incidentally, Bill won't be able to make this one -- he's in
> Atlanta this week -- but he's sending Ann Flynt in his place. Bring
> along Harry if he's free.

Correct any errors you make by pressing ⎍BKSP⎍ to erase the error then retyping the text. For example, to change the last word *free* to *available*:

1. Erase "free." by pressing ⎍BKSP⎍ six times.

2. Type **available**. (Don't forget the period.)

3. Press ⎍ENTER⎍.

Selecting and Revising Text

To revise a document you've already drafted, you can select and delete text, then type new text. Select "Incidentally" in the sample paragraph, then delete it as follows:

1. Press ⎍↑⎍ as many times as necessary to position the marker on the line containing "Incidentally."

2. Press ⎍→⎍ to position the marker on the letter "I" of "Incidentally."

3. Press ⎍F8⎍ to select the word, then press ⎍F6⎍ for selection extend. Ex appears on the status line. Now, press ⎍→⎍ twice to include the comma and the following space in the selection.

4. The Replace scrap mode should be active (nothing appears on the status line). If Ap or Ns appears on the status line, press ⎍F5⎍ until Word is in the Replace mode.

5. Press ⎍ESC⎍ to enter the Command mode, and press ⎍D⎍ for Delete. {Incidentally, } appears on the status line; it is deleted from the text and placed in the scrap. Word returns to the Edit mode.

Sometimes, simply deleting text is not enough. Often, you want to insert new text after you delete the old. You can do this by typing the new text or inserting from the scrap.

If you type new text to replace deleted text, remember that the new text appears in front of the marker. For instance, type new text to replace "Incidentally,":

1. Be sure the cursor is on the "B" of "Bill."

2. Now, type **Unfortunately,** (Don't forget to include the comma and a space.)

Now, insert the contents of the scrap between "place." and "Bring":

1. Press ⬇ to move to the line containing the word "Bring."

2. Press → until the cursor is on "B" of "Bring."

3. Press ESC to go to the Command mode, and press I for Insert. "Incidentally," now appears in the paragraph, before "Bring." Word returns to the Edit mode.

To change the letter "B" of "Bring" to lowercase:

1. Be sure the cursor is on the "B."

2. Press SHIFT BKSP (DELETE). Type **b** to replace the capital "B."

Notice that the capital "B" you deleted replaces the previous contents of the scrap. (When you insert from the scrap, the contents of the scrap remain unchanged.)

Formatting Text

The format of your text is the way it looks. Now, change the way your example paragraph looks – from flush with the left margin to justified (flush with both margins).

1. Place the cursor anywhere within the paragraph.

2. Press ESC to go to the Command mode.

3. Press F for the Format command.

4. Press P for the Paragraph subcommand.

5. Press the space bar 3 times to choose Justified in the alignment field.

6. Carry out the command by pressing ENTER. Word formats the paragraph and returns to the Edit mode.

Printing the Document

Now that you've edited and formatted your document, you can print it.

1. Be sure your printer is on, connected to the computer, ready to print, and has sufficient paper to print the document.

2. Press ESC to go to the Command mode.

3. Press P for the Print command.

4. Press ENTER to carry out the command using the proposed responses.

Word prints your document, in this case, your sample paragraph.

Quitting Word

Press CTRL F10 to quit Word and return to System Manager. Word automatically saves your document every time you quit Word.

To erase your practice file, highlight **PRACTICE** on the System Manager screen.

1. Press D for the Delete command. (System Manager is already in the command mode.) The screen shows:

    DELETE file: ▓▓▓▓▓▓▓▓▓▓

2. Press ENTER to carry out the command. The practice file is deleted.

Chapter 3 Calendar

The CALENDAR application is an appointment and task (event) scheduler and reminder. It provides at-a-glance schedule information, and reminds you of important appointments at times you specify. Two types of calendars are used: Month Calendars and Daily Diaries.

Month Calendars display an asterisk next to each date for which appointments are scheduled. You can copy all appointments and/or tasks for one date on a Month Calendar and insert them in one or more different dates. You can also delete all appointments and/or tasks from a date at a Month Calendar. You can also print the Calendar events that are referenced on a Month Calendar.

Daily Diaries display detailed event information. You add or change events for a specific date in that day's Diary. You can duplicate one or more selected events for insertion elsewhere in the current Daily Diary or in another day's Diary. You can display and enter times in either a 24-hour or 12-hour (am/pm) format. You can also print the events that appear on a Daily Diary.

You can set an alarm for Diary events when you add or edit them. The alarm reminds you of the events as they occur or at a time you set. You can set the alarm to beep or to display a flashing asterisk to remind you of an event. If the audible alarm (beep) is set, it beeps at the designated time in any application and even when the computer is turned off.

Special Calendar Keys

Function Keys

Calendar uses the following function keys:

[F1]	Functions the same as [LABEL]
[F2]	(Month Calendar only.) Moves to the next Month Calendar.
[F4]	Turns on the Sort option if it has been turned off as a result of low memory. Before pressing [F4], recover all available memory, and insert all data from scrap.
[F5]	Controls the Scrap Mode. Replace is the default scrap mode; copied or deleted data replaces the current scrap contents. No scrap indicator appears on the status line for the Replace mode.
	Press [F5] once for the Append mode; copied or deleted data is appended to the current scrap contents. Ap appears on the status line.
	Press [F5] twice for the No Scrap mode. Ns appears on the status line. Press [F5] again to return to the Replace scrap mode.
[F6] – [F10]	Function as Selection Keys. Refer to "Selection Keys."
[SHIFT] [F1]	Functions the same as [SHIFT] [LABEL].
[SHIFT] [F2]	(Month Calendar only.) Moves to the Previous Month Calendar.
[SHIFT] [F8] – [SHIFT] [F10]	Function as selection keys. Refer to "Selection Keys."
[CTRL] [F1] – [CTRL] [F10]	Function as system function keys. Refer to "System Function Keys" in the Overview.

Selection Keys

Before inserting all or a portion of one or more records elsewhere in the Calendar file, you must first select the area into which the records are to be inserted.

1. Select (all or part of) the record(s) you are copying or deleting into the scrap.

2. Copy or delete the selected area.

3. Move to the target location for the insert (in the same Daily Diary or a different one), and select the entire area into which you are inserting the record(s).

The area copied or deleted must match the field type of the target area (whole records into whole records, Note fields into Note fields, and so forth).

F6	Extends the current Selection (highlighted text in an EDIT field or highlighted column or record). F6 works in conjunction with the selection keys: F7, F8, F9, F10, and the arrow keys. Press F6, then press a selection key.
←	Selects the previous field (Start, Stop, Priority, Remind, or Note) when used with Extend Select (F6).
→	Selects the next field when used with Extend Select (F6).
↑	Selects the previous record when used with Extend Select (F6).
↓	Selects the next record when used with Extend Select (F6).
F7	In the Edit mode, selects (highlights) the first Word to the Left of the cursor that is not already selected. If the cursor is in the middle of a word, F7 selects that word.

⌐F8⌐	In the Edit mode, selects (highlights) the first Word to the Right of the cursor that is not already selected. If the cursor is on a word, ⌐F8⌐ selects that word.
⌐F9⌐	In the Edit mode, selects (highlights) the first Character to the Left of the cursor.
⌐F10⌐	In the Edit mode, selects (highlights) the first Character to the Right of the cursor.
⌐SHIFT⌐⌐F8⌐	(Daily Diary only.) Selects all fields in the same Column. Press any arrow key to cancel the selection.
⌐SHIFT⌐⌐F9⌐	(Daily Diary only.) Selects all fields in the same Record (row). Press any arrow key to cancel the selection.
⌐SHIFT⌐⌐F10⌐	(Daily Diary only.) Selects All records for the current day. Press any arrow key to cancel the selection.

Command Keys

[ESC]   Returns to the Command mode from the Edit
                                mode. Edit is the default command on the menu.

[ESC]   In the Command mode, cancels the command and
                                returns to the command menu. Edit is again
                                highlighted as the default command. Press [E] to
                                go into the Edit mode.

[ENTER]   In the Command mode, carries out the current
                                command using default values or values you fill in
                                for the command fields.

Special keys for the command menu are:

[TAB]   Moves to the next command.
or space bar

[SHIFT] [TAB]   Moves to the previous command.
or [BKSP]

Special keys for the command fields are:

[TAB]   Moves to the next command field.

[SHIFT] [TAB]   Moves to the previous command field.

space bar   Moves to the next item in a menu-type command
                                field.

[BKSP]   Moves to the previous item in a menu-type
                                command field.

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Starting and Quitting Calendar

Calendar is the second application name that appears on the System Manager screen. When you first start the Tandy 600 or return to the System Manager screen from another application, the cursor highlights the Word application. Run is the default on the System Manager command menu.

1. Use the arrow keys to place the cursor over CALENDAR (the application name **or** the filename – only one Calendar file can be created).

2. Place the command selection marker over Run, and press ENTER. Calendar displays the Daily Diary screen for the last date accessed. The cursor appears in the same postion as when you last accessed the file. A blank Daily Diary screen for the current date appears when opening the file for the first time.

Quit the Calendar application and return to the System Manager by pressing CTRL F10. Quit the Calendar application and return to the previous application by pressing CTRL F9.

The Calendar Screens

Daily Diary Screen

When you open the Calendar file, a Daily Dairy screen appears. The Calendar command menu, message line, and status line appear at the bottom of the screen. Calendar begins in the Command mode, with the command selection marker highlighting the Edit command.

```
ID   ‖Start       ‖Stop        ‖P‖R‖Note
NEW  ‖█████████████‖                ‖ ‖ ‖


> Copy Delete ░Edit░ Insert Jump Options Print
Copyright (1984, 1985) Microsoft Corp.
Calendar:  Tuesday,  1/ 1/1985              1/ 1/1985   2:07:29 AM
```

Figure 14. A Blank Calendar Daily Diary Screen

The status line displays the application name, the date of the Daily Diary screen displayed, the current system date and time, and any active indicators.

The cursor appears in the Start field of the NEW record. You can immediately begin entering Calendar event records by pressing ⌐E⌐ for the Edit command. There are two types of Calendar events: appointments and tasks.

Appointments and Tasks

Appointments are events for which a specific Start, Stop, and/or Reminder time is entered. Appointments are not carried forward to the next day, but remain on the Daily Diary until deleted.

Appointments appear before task on the Calendar screen. Each time you press ⌈ENTER⌉ to carry out the Edit command, Calendar sorts appointments in chronological order and tasks in order of priority first, and chronology second.

If you schedule 2 appointments at the same time, the one with the highest priority (providing you assigned priorities) lists first.

Tasks are all-day events – events for which no specific Start times are entered. Calendar does not consider a task complete until you enter a completion date in the Stop field. Tasks not completed or deleted continue to appear on the next day's Daily Diary. In this way, tasks form a dynamic "to do" list. (A task alarm does not go off if you fill the Stop field before the Remind time occurs.)

Month Calendar Screen

An entire month can be viewed on the Calendar Month screen. At the Daily Diary screen, press ⌈J⌉ (for Jump). The screen shows:

```
JUMP to month: █          day.          year:
```

The proposed response is the current month and year. Leave the day field blank to jump to a Month screen. (Change the field values, including a day, to view another Daily Diary screen.) Press ⌈ENTER⌉. A Month screen appears for the month and year entered.

```
        SUN        MON        TUE        WED        THU        FRI        SAT
      ┌─────────────────────────────────────────────────────────────────────┐
      │                        ████████████  2          3          4          5   │
      │        6          7          8          9         10         11         12 │
      │       13         14         15         16         17         18         19 │
      │       20         21         22         23         24         25         26 │
      │       27         28         29         30         31                       │
      └─────────────────────────────────────────────────────────────────────┘
```

```
> Copy Delete Insert Jump Print
Select option or type command letter
Calendar              Scheduled:  0                    10/ 1/1985   8:33:29 AM
```

Figure 15. A Blank Calendar Month Screen

The current Calendar date (the Daily Diary date from which you jumped) is highlighted on the Month screen. An asterisk next to a date indicates that one or more events are scheduled for that date on a Daily Diary screen.

The Month screen command menu, message line, and status line appear at the bottom of the screen. The Edit and Options commands are not available at the Month screen. The status line displays the application name and the number of events scheduled for the highlighted date. The current system date and time also appear, as well as any active indicators.

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The Calendar Commands

Calendar defaults to the Command mode; when you run Calendar, the program goes into the Command mode automatically.

Use the Calendar Edit command to enter and edit Calendar event records. Use the other Calendar commands to copy, delete, insert, and print selected Calendar information. Also use the commands to move between the Daily Diary and Month Calendar screens, and to determine the formats in which time and dates are entered and displayed in the Calendar application.

Copy

Use the Copy command to duplicate, or "copy," all or part of one or more records and place the copy in the scrap. Before copying, choose either the Replace or Append scrap mode (F5).

1. Move the cursor to the first record field to copy. The entire field is selected. To copy a single field, skip to Step 3.

2. Press SHIFT   F8 to select the current column, SHIFT   F9 to select the current record, or SHIFT   F10 to select all records for the current day. Use a combination of the arrow keys and F6 if you wish to extend the selection.

3. When all records you wish to copy are selected, press C for the Copy command.

Depending on the status of scrap, the computer appends the copied data to the existing scrap, or overwrites the existing scrap with the copied data.

Now use the Insert command to insert the contents of the scrap elsewhere.

Delete

Use the Delete command to erase, or "delete," unwanted Calendar event records. Delete only complete records. Before deleting, choose a scrap mode (F5). If you choose the No Scrap mode, all deleted data is lost.

1. Move the cursor to the first record field to delete. The entire field is selected.

2. Press SHIFT F9 to select the current record or SHIFT F10 to select all records for the current day. Use a combination of ↓, ↑, and F6 if you wish to extend the selection to include more than one record.

3. When all records you wish to delete are selected, press D for the Delete command.

Depending on the status of scrap, the computer appends the deleted records to the existing scrap, overwrites the existing scrap with the deleted records, or deletes the records without saving them to the scrap.

Edit

Use the Edit command to enter and/or change all Calendar events. Each Calendar event (appointment or task) displays as a record (row) on the screen.

1. Use the arrow keys to place the cursor over the Start field of the record you want to edit or of the NEW record if you are adding a record.

2. In the Command mode, press ENTER for the Edit command (the proposed response). The EDIT command field appears.

EDIT:

Any information in the Start field for the current record appears in the EDIT field.

3. Type a start time for an appointment record in HH: MM PM format or the format you chose in the Options command. Type a date for a task in MM/DD/YY format. Press → to move to the Stop field. (Press → without entering any data to enter the current date for a task.)

4. Type a stop time for the event, and press ⬅ to move to the Priority (P) field. The priority you enter determines the order in which the events are sorted. Valid priorities are:

   *   urgent
   H   high
   M   moderate
   L   low

5. Press ⬅ to move to the Reminder (R) field. Type a reminder time in HH: MM PM format or the format you chose in the Options command.

6. Press ⬅ to move to the Note field. Type a notation for the event, up to 255 characters.

   Often, notes are longer than the 43 characters that appear on the screen. Select a note, and press E to display the entire note in the EDIT field. Press ESC to return to the Command mode.

7. Press ENTER to carry out the Edit command.

Insert

Use the Insert command to insert the contents of the scrap into a selected area on the screen (one or more complete records or parts of records). The inserted data must be in the same format (date, time, note) as the field(s) or record(s) in which you want to insert it.

Inserting Data at a Daily Diary Screen

Use the Jump command to move to the Daily Diary in which you want to insert the scrap contents. **The information must already be in the scrap.** Select the target area, then insert.

1. Select (all or part of) the record(s) you are copying or deleting into the scrap.

2. Copy or delete the selected area.

3. Use the Jump command to move to the target location for the insert (in the same Daily Diary or a different one).

4. Use the selection keys to select the entire area into which you are inserting information.

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The information in the scrap must match the field type of the target area (whole records into whole records, Note fields into Note fields, and so forth).

5. Press ⬚ for the Insert command. The scrap data is inserted into the selected area.

Inserting Data at a Month Screen

You can also insert data from the scrap into several selected days (every Tuesday in a month, for example).

1. Use the Jump command to move to the appropriate Month Calendar screen.

2. Select the days into which you want the scrap data inserted (the column of Tuesdays, for example).

3. Press ⬚ for the Insert command. The scrap data is inserted into the Daily Diaries of the selected days.

Jump

Use the Jump command to move between the Daily Diary screens and Month Calendar screens. You can jump to a Month or Daily Diary screen from any screen. The current month and year are the proposed responses when jumping from a Daily screen; the current month, day, and year are the proposed responses when jumping from a Month screen.

Jumping to a Month Calendar Screen

1. Press ⬚. The screen shows:

JUMP to month: ▮   day: year: 1986

The proposed responses are the current month, day, and year. (No value appears in the day field if you are jumping from a Daily Diary.)

2. Type a month in the MM format.

3. Press ⬚TAB⬚ to move to the day field. Leave the day blank to display a Month screen.

4. Press ⌊TAB⌋ to move to the year field. Type a year in the format YYYY.

5. Press ⌊ENTER⌋ to carry out the Jump command. The Month Calendar screen appears.

Jumping to a Daily Diary Screen

1. Press ⌊J⌋. The screen shows:

```
JUMP to month: ■          day:          year: 1986
```

The proposed responses are the current month, day, and year.

2. Type a month in the MM format.

3. Press ⌊TAB⌋ to move to the day field. Type a day in the DD format.

4. Press ⌊TAB⌋ to move to the year field. Type a year in the YYYY format.

5. Press ⌊ENTER⌋ to carry out the Jump command. The Daily Diary screen appears.

Options

Use the Option command to set the format for all Calendar times and dates.

1. Press ⌊O⌋ for the Options command. The screen shows:

```
OPTIONS time format: AM-PM 24-Hour          day format: MM/DD/YY
```

2. The proposed time format is **AM-PM**, which displays time according to a 12-hour clock, including a notation for morning (AM) or night (PM). Any times you enter when using this format must include AM or PM. (Calendar defaults to AM if nothing is entered.)

   Use the proposed response, or press the space bar to choose the 24-hour format, which displays hours from 1 to 24.

3. Press ⌊TAB⌋ to move to the next field. The proposed day format is MM/DD/YY. Use the proposed response, or type a new format for the date, up to 12 characters long. Use only M, D, Y, and boilerplate characters for the date format.

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```
┌─────────────────────────────────────────────────────────────┐
│  For the date October 1, 1985,                                │
│                                                               │
│  type:                          to display and enter:         │
│                                                               │
│  MMM  DD,  YYYY                 Oct  1,  1985                 │
│  MM  DD  YY                     10   1  85                    │
│  DD-MMM-YYYY                    1-Oct-1985                    │
└─────────────────────────────────────────────────────────────┘
```

4. Press ⌈ENTER⌋ to carry out the Options command.

Print

Use the Print command to print selected records to a file or to the printer. Printing to a file creates a text file, which you can use in transferring data to another program.

The Calendar Print command uses the settings in the System Manager Set Printer command. Before you print, be sure the settings are correct. Select one or more records or an entire day at a Daily Diary screen, or more than one day at a Month Calendar screen.

1. Jump to the Daily Diary or Month Calendar screen.

2. Press ⌈P⌋ for the Print command. The screen shows:

    PRINT to: PRN:

Use the proposed response to print to the printer, or type a filename to print to a text file.

3. Press ⌈ENTER⌋ to carry out the Print command.

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The Calendar Tutorial

The Calendar tutorial is a step-by-step practice session that leads you through the basics of entering and editing Calendar events.

Starting Calendar

At the System Manager screen, place the cursor over CALENDAR, and press ⃞R⃞ for the Run command. The screen shows:

```
ID   ||Start       ||Stop        ||P||R||Note
NEW  ||█████████████||            || || ||
```

```
> Copy Delete EDIT Insert Jump Options Print
Copyright (1984, 1985) Microsoft Corp.
Calendar:  Tuesday,  1/ 1/1985              1/ 1/1985  2:07:29 AM
```

The cursor highlights the Start field in the NEW record. EDIT is highlighted on the command menu.

The current system date appears at the right of the bottom line. The Calendar date, the date of the current Daily Diary, appears at the left. When you first open the file, Calendar displays a Daily Diary screen for the the current system date. For this example, we assume the system date is 12/23/1985. You can change the system date (Set Date in the System Manager) or type the actual date for the events in this example.

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Entering Appointments

1. Press ⌈E⌋ for the Edit command. The screen shows:

   ```
   EDIT: ▉
   Enter an appointment (HH:MM PM) or a task (MM/DD/YY)
   ```

2. Type **12:10pm** for 12:10 PM. (Do not press ⌈ENTER⌋ yet.) Press ⌈→⌋ to move to the Stop field.

   As the marker moves from the Start field to the Stop field, 12:10 PM appears in the Start field of the record we are creating. The NEW record moves down one line. The message line shows:

   > Enter an appointment (HH:MM PM) or a task (MM/DD/YY)

3. Type **12:50pm** for 12:50 PM, and press ⌈→⌋ to move to the P (Priority) field. The message line shows:

   > Enter a priority (*, H, M, or L)

4. Type **H** to indicate a high priority for this appointment, and press ⌈→⌋ to move to the R (Reminder) field. The message shows:

   > Enter a time for a reminder (HH:MM PM)

5. Type **11:55** for 11:55 AM (AM is the default). This sets an alarm to go off 15 minutes before your appointment. If you skip this field and do not enter a time, Calendar uses the start time of the appointment as the reminder time.

6. Press ⌈→⌋ to move to the Note field. (Notice that the reminder time does not appear on the screen. R appears to indicate that a reminder time is set.)

   The message line shows:

   > Enter a note (up to 255 characters)

7. Type **Lunch with Marie**.

Your first appointment record is complete. Now, you can enter more records.

Entering More Appointments

Press ⬇ once, then ⬅ 4 times to move to the beginning of the next new record. The note entered in the last record appears in the Note field.

Enter the following records, using the same procedures as before. Type **3:55pm** and **5:45pm** as reminder times for records 4 and 5, respectively.

```
      ID    ‖Start       ‖Stop        ‖P‖R‖Note
(record 2)‖12:10 PM ‖12:50 PM ‖H‖R‖Lunch with Marie
(record 3)‖ 1:30 PM ‖ 2:00 PM ‖H‖ ‖Status Meeting
(record 4)‖ 2:00 PM ‖         ‖M‖ ‖Call Phillips, discuss Folsom contract
(record 5)‖ 4:00 PM ‖ 4:45 PM ‖M‖R‖Interview with prospective employee
(record 6)‖ 6:00 PM ‖         ‖M‖R‖Be home for dinner or else!
```

You now have 5 appointment records on your screen. You're ready to enter some sample task records. Don't press ENTER When you're ready to enter task records, use the arrow keys to move to the Start field of the NEW record.

Entering Tasks

The message line now shows:

> Enter an appointment (HH : MM PM) or a task (MM/DD/YY)

1. Type **12/23/85**.

2. Press → twice to skip the Stop field and move to the priority field. (Stop is used for the completion date, which you fill in only when you complete the task.) The message line shows:

> Enter a priority (*, H, M, or L)

3. Type * to indicate an urgent priority rating for this task. Press → to move to the reminder field. The message line now shows:

> Enter a time for a reminder (HH:MM PM)

4. Type **10:30** for 10:30 AM. You have now set an alarm to go off at 10:30 AM on the day you've planned to perform the given task. No alarm sounds for tasks unless you specifically request one in this field.

5. Press ☐→☐ to move to the Note field. The message line shows:

> Enter a note (up to 255 characters)

6. Type **Write up report on marketing strategy**.

Your first task record is complete. Now, you are ready to enter additional task records.

Entering More Tasks

Press ☐↓☐ once, then ☐←☐ 4 times to move to the beginning of the next new record. The note entered in the last record appears in the Note field.

Enter the following records, using the same procedures as before. Type **10:30** as a reminder time for record 3.

```
      ID    ||Start          ||Stop       ||P||R||Note
(record 2)  ||12/23/85       ||           ||M|| ||Draft contract for Jones account
(record 3)  ||12/23/85       ||           ||H||R||Mail spec to all concerned
(record 4)  ||12/23/85       ||           ||M|| ||Draft memo for record
(record 5)  ||12/23/85       ||           ||L|| ||Deposit paycheck
(record 6)  ||12/23/85       ||           ||L|| ||Get a haircut
```

After you enter all the sample tasks, press ☐ENTER☐. You now have 6 task records on your screen. Calendar sorts the appointments and tasks. Records are first sorted into appointments and tasks, then by priority, and finally, by chronological order.

The screen now shows 5 appointment records and 6 task records for this day.

```
 ID   ||Start        ||Stop        ||P||R||Note
      ||12:10 PM     ||12:50 PM    ||H||R||Lunch with Marie
      ||1:30 PM      ||2:00 PM     ||H|| ||Status Meeting
      ||2:00 PM      ||            ||M|| ||Call Phillips, discuss Folsom contract
      ||4:00 PM      ||4:45 PM     ||M||R||Interview with prospective employee
      ||6:00 PM      ||            ||M||R||Be home for dinner or else!
      ||12/23/85     ||            ||*||R||Write up report on marketing strategy
      ||12/23/85     ||            ||H||R||Mail spec to all concerned
      ||12/23/85     ||            ||M|| ||Draft contract for Jones account
      ||12/23/85     ||            ||M|| ||Draft memo for record
      ||12/23/85     ||            ||L|| ||Deposit paycheck
      ||12/23/85     ||            ||L|| ||Get a haircut
 NEW  ||█████████████||
```

Quitting Calendar

Press ⌈CTRL⌉ ⌈F10⌉ to quit Calendar and return to System Manager. Calendar automatically saves the events you entered.

To erase the practice Calendar file, highlight the CALENDAR file (not the application name) on the System Manager screen.

1. Press ⌈D⌉ for the Delete command. The screen shows:

   DELETE file: CALENDAR.CAL

2. Press ⌈ENTER⌉ to carry out the Delete command. The practice file is deleted.

Chapter 4 File

FILE lets you create your own information management system, or "data base." Use the File application to store and maintain addresses and phone numbers, income tax records, billings, favorite recipes, and other data items. File can sort data (in ascending or descending order) alphabetically, numerically, or chronologically. You can select records with File, exchange information with other application programs, and more.

Special File Keys

Function Keys

File uses the following function keys:

[F1]	Functions the same as [LABEL].
[F4]	Sorts data that was not sorted because of low memory (entire scrap was not inserted). Before pressing [F4], recover all available memory, then insert the scrap data.
[F5]	Controls the Scrap Mode. Replace is the default scrap mode; copied or deleted data replaces the current scrap contents. No scrap indicator appears on the status line for the Replace mode.
	Press [F5] once for the Append mode; copied or deleted data is appended to the current scrap contents. Ap appears on the status line.
	Press [F5] twice for the No Scrap mode. Ns appears on the status line. Press [F5] again to return to the Replace scrap mode.
[F6] – [F10]	Function as Selection Keys. Refer to "Selection Keys."
[SHIFT] [F1]	Functions the same as [SHIFT] [LABEL].
[SHIFT] [F8] [SHIFT] [F10]	Function as Selection Keys. Refer to "Selection Keys."
[CTRL] [F1] [CTRL] [F10]	Function as system function keys. Refer to "System Function Keys" in the Overview.

Scrolling Keys

↑	Scrolls to the previous row.
↓	Scrolls to the next row.
←	Scrolls to the previous column.
→	Scrolls to the next column.
SHIFT ↑	Scrolls to the previous screen of rows. The first row of the screen from which you scrolled appears as the last line of the new screen.
SHIFT ↓	Scrolls to the next screen of rows. The last row of the screen from which you scrolled appears as the first line of the new screen.
SHIFT ←	Scrolls to the previous screen of columns. The first column of the screen from which you scrolled appears as the last column of the new screen.
SHIFT →	Scrolls to the next screen of columns. The last column of the screen from which you scrolled appears as the first column of the new screen.
CTRL ↑	Scrolls to the first row in the data base.
CTRL ↓	Scrolls to the last row in the data base.
CTRL ←	Scrolls to the first column in the data base.
CTRL →	Scrolls to the last column in the data base.

Selection Keys

F6	Extends the current Selection (highlighted text). F6 works in conjunction with the selection keys: F7, F8, F9, F10, and the arrows. Press F6 then press a selection key.
↑	Selects the previous row when used with Extend Select (F6).

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[↓]	Selects the next row when used with Extend Select ([F6]).
[←]	Selects the previous column when used with Extend Select ([F6]).
[→]	Selects the next column when used with Extend Select ([F6]).
[SHIFT] [↑]	Selects the previous screen of rows when used with Extend Select ([F6]).
[SHIFT] [↓]	Selects the next screen of rows when used with Extend Select ([F6]).
[SHIFT] [←]	Selects the previous screen of columns when used with Extend Select ([F6]).
[SHIFT] [→]	Selects the next screen of columns when used with Extend Select ([F6]).
[CTRL] [↑]	Selects all rows from the current one to the first row in the data base when used with Extend Select ([F6]).
[CTRL] [↓]	Selects all rows from the current one to the last row in the data base when used with Extend Select ([F6]).
[CTRL] [←]	Selects all columns from the current one to the first column in the data base when used with Extend Select ([F6]).
[CTRL] [→]	Selects all columns from the current one to the last column in the data base when used with Extend Select ([F6]).
[F7]	In the Edit mode, selects (highlights) the first Word to the Left of the cursor.
[F8]	In the Edit mode, selects (highlights) the first Word to the Right of the cursor.
[F9]	In the Edit mode, selects (highlights) the next Character to the Left of the cursor.

F10	In the Edit mode, selects (highlights) the next Character to the Right of the cursor.
SHIFT F8	Selects all fields in the current Column. Press an arrow key to "unselect" the column. Press F6, then ← or → to select additional columns.
SHIFT F9	Selects all fields in the current Record. Press an arrow key to "unselect" the record. Press F6, then ↑ or ↓ to select additional records.
SHIFT F10	Selects All records in the data base. Press an arrow key to "unselect" the records.

Command Keys

ESC	In the Command mode, cancels the command and returns to the command menu. Edit is highlighted as the default command. Press E to go into the Edit mode.
ESC	Returns to the Command mode from the Edit mode. Edit is again highlighted as the default command.
ENTER	In the Command mode, carries out the current command using default values or values you fill in for the command fields.

Special keys for the command menu are:

TAB or space bar	Moves to the next command.
SHIFT TAB or BKSP	Moves to the previous command.

Special keys for the command fields are:

⌷TAB⌷	Moves to the next command field.
⌷SHIFT⌷⌷TAB⌷	Moves to the previous command field.
space bar	Moves to the next item in a menu-type command field.
⌷BKSP⌷	Moves to the previous item in a menu-type command field.

Starting and Quitting File

File is the third application name that appears on the System Manager screen. When you first start the Tandy 600 or return to the System Manager screen from another application, the cursor highlights the Word application. Run is the default on the System Manager command menu.

To create a File data base:

1. Use the arrow keys to place the cursor over FILE, place the selection marker over Run, and press ENTER. The Run command fields appear:

    RUN application: █FILE█   file:

2. Press TAB. Type a name for the data base you are creating. If you do not type a filename, File names your data base WORK.

3. Press ENTER. A File screen appears. File begins in the Command mode.

To open an existing data base:

1. Use the arrow keys to place the cursor over the name of the work file for the data base you want to open.

2. Place the command selection marker over Run, and press ENTER. The File screen for the data base appears. The cursor appears in the same position as when you last accessed the data base. File begins in the Command mode.

Quit the File application and return to the System Manager by pressing CTRL F10. Quit the File application and return to the previous application by pressing CTRL F9. When you quit File, the data base is stored in two files, a work file and data file.

The name of the work file (extension .FIL) appears to the right of FILE on the System Manager screen. The work file contains the data base formatting information: number of records, width of columns, header information, and location of the cursor when you quit the program.

The name of the data file is the same as that of the work file, but with .DAT as the extension. The name of the data file appears to the right of .DAT on the System Manager screen. The data file contains the actual data that you entered into the data base. File stores data and formatting information separately for easy access of the data by a BASIC program.

Note: You must copy both the work file and the data file into RAM in order to open an existing disk data base.

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The File Screen

When you create a File data base or open an existing one, the File screen appears. The File command menu, message line, and status line appear at the bottom of the screen. File begins in the Command mode, with the command selection marker highlighting the Edit command.

```
ID   ||NEW
FORM ||AAAAAAAAAA||
SORT ||
FIND ||
NEW  ||▮▮▮▮▮▮▮▮▮▮▮||
```

```
> Copy Delete ▮Edit▮ Find Insert Jump LookUp Move Options Print
Copyright (1984, 1985) Microsoft Corp.
File: WORK                              Records: 0/0
```

Figure 16. Blank File Screen

The cursor appears at the intersection of the NEW column and row. You can enter data immediately or first format and name the columns of your data base, then enter data. Following is an example of a formatted data base, which shows an employee's federal income tax records for 1976 through 1983. We will explain the File screen using this example.

```
ID   ||Year  ||Income     ||Fed Tax W-H||Deductions ||Payment      ||NEW
FORM ||YYYY  ||$ ##,###.## ||$ ##,###.## ||$ ##,###.## ||$ ##,###.## ||AAAAAAAAAA||
SORT ||1 Down||
FIND ||
1    ||1983  ||$ 30,000.00 ||$  5,000.00 ||$  3,750.00 ||$   650.00 ||
2    ||1982  ||$ 29,300.00 ||$  4,800.00 ||$  3,700.00 ||$   600.00 ||
3    ||1981  ||$ 28,600.00 ||$  4,500.00 ||$  3,600.00 ||$   575.00 ||
4    ||1980  ||$ 27,200.00 ||$  4,400.00 ||$  3,450.00 ||$   525.00 ||
5    ||1979  ||$ 26,700.00 ||$  4,200.00 ||$  3,550.00 ||$   475.00 ||
6    ||1978  ||$ 25,100.00 ||$  3,900.00 ||$  3,390.00 ||$   450.00 ||
7    ||1977  ||$ 24,500.00 ||$  3,600.00 ||$  3,400.00 ||$   395.00 ||
8    ||1976  ||$ 23,000.00 ||$  3,450.00 ||$  3,000.00 ||$   350.00 ||
NEW  ||▮▮▮▮▮▮||
> Copy Delete ▮Edit▮ Find Insert Jump LookUp Move Options Print
Select option or type command letter
File: WORK                              Records: 8/8
```

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Control Records

At the top of the screen are the data base control records: ID, FORM, SORT, and FIND. Before you enter any data records, fill in the ID and FORM fields for each column.

ID   Use the ID record to define names for each column. The ID names in our example are: Year, Income, Fed Tax W/H, Deductions, and Payment.

FORM   Use the FORM record to set up a format for the records in the data base. The default format is 10 letters and/or numbers. Use the default format, shorten or widen the columns, or reformat them to contain numbers, dates, or times. The formats in our example are: YYYY (for the year) and $##,###.## for a numerical amount in a dollar format.

SORT   Use the SORT record after entering data records to rearrange, or "sort," the records in a different order. We sorted the records in our example by the first column, Year, in descending (1 Down) order.

FIND   Use the FIND record after entering data records to display a particular group of records based on criteria you enter. Because no FIND criterion is entered in our example, all records are shown.

Data Records

The central portion of the screen contains data records, the information you enter into the data base. You normally set up your data base so that columns contain the record fields and each row contains a different record.

Command Area

The command menu, message line, and status line appear at the bottom of the File screen. The status line displays the name of the current application and data base, the number of records in the current Find set (the records that match the current FIND record) followed by the total number of records in the data base, and any active indicators.

Formatting Records

You fill in fields of the FORM record to define the type, width, and appearance of the data fields in each column. Column widths are determined by the number of characters, including spaces, that you type in the fields of the Form record. There are 3 field types: text, number, or date/time.

Do not mix types in a single Form record field. For example, when formatting a column of address fields consisting of numbers and text, you must format the column for text or for numbers. Because you use numbers in addresses descriptively rather than mathematically, text is the logical column format.

Valid characters in the FORM fields are:

A	text
–	boilerplate symbol for phone number formats
( )	boilerplate symbols for phone number formats
#	number
E	scientific notation
$	boilerplate symbol for dollar formats
.	boilerplate symbol for decimal formats
,	boilerplate symbol for number formats
M	month
D	day of the month
Y	year
/	boilerplate symbol for date formats
H	hour format
M	minute
S	second
:	a boilerplate symbol for time formats

Note: Any characters can be used as boilerplates in the FORM field. The ones listed here are only some of the most commonly used boilerplate symbols.

You can change the format in the FORM field to convert one type of data to another. However, when you convert numbers to text, you can no longer calculate them. They lose their genuine numeric values.

Furthermore, File cannot convert from number to date/time or from date/time to number because there is no logical equivalent from one to the other.

When you edit a FORM field to change the type of data in a column, File displays: Checking fields. If the data types can be converted, File displays: Converting fields...

If File cannot convert the format of a particular field, it displays: Value cannot be converted. Enter Y to continue. To discontinue, press ESC. File cancels the current Edit and returns to the command menu. To continue, press Y. File either skips the field or erases its contents, then checks the format of the next field.

File continues the convert process for each data field in the column.

Using Boilerplates in Format Fields

Boilerplates are characters that are included in a field to more clearly identify the data. Boilerplates also help you enter data more quickly. Once you include boilerplate characters in a FORM field, File automatically inserts the characters in all data fields in the same column.

The presence or absence of boilerplate characters in the FORM record affects the way you later fill in data fields. If you format a column to include an area code, for example, you **must** enter an area code in all data fields in that column.

(aaa) aaa-aaaa is entered in a FORM field:	
If you type:	**it appears as:**
(123) 456-7890	(123) 456-7890
1234567890	(123) 456-7890
4567890	(456) 789-0

Entering Text Field Formats

Type the character **A** (uppercase or lowercase) to format a column to contain only text. The number of **A**'s, spaces, and boilerplate characters you type in a FORM field determines the width of all data fields in that column.

File interprets any characters other than A in a text field as boilerplate characters and inserts these characters automatically as you fill in the data field.

When you create a new data base, the cursor highlights the intersection of the NEW column and row. Move to the FORM field for the column you want to format, then edit the field.

1. Use the arrow keys to move the cursor to the FORM row of the appropriate column. AAAAAAAAAA appears in the field if the format has not been changed.

2. Press $\boxed{\text{E}}$ for the Edit command. AAAAAAAAAA appears in the EDIT field. The entire field is selected.

3. Press $\boxed{\text{F9}}$ (Character Left) to select the first character of the field.

4. Type A as many times as needed to lengthen the field, or press $\boxed{\text{SHIFT}}$ $\boxed{\text{BKSP}}$ ($\boxed{\text{DELETE}}$) to shorten the field.

   Use $\boxed{\text{F7}}$ – $\boxed{\text{F10}}$ to move the cursor within the EDIT field. Type boilerplate characters as needed.

5. Press $\boxed{\text{ENTER}}$ to change the format field and return to the Command mode. Press $\boxed{\leftarrow}$ or $\boxed{\rightarrow}$ to change the format field and move to the previous or next format field without leaving the Edit mode.

Entering Number Field Formats

Type the character # to format a column to contain only numbers. The number of #'s, spaces, and boilerplate characters you type in a FORM field determines the width of all data fields in that column.

File interprets any characters other than # in a number field as boilerplate characters and inserts these characters automatically as you fill in the data field. Note that only 1 decimal point is allowed in a number format field. When you enter data, always include the decimal point for decimal numbers.

```
# # # . # #  is entered in a FORM field:

If you type:                    it appears as:
23.45                               23.45
–23.45                             –23.45
2345                               ******
–234.56                            ******
234                                234.00
.12                                  0.12
456.128                            456.13
```

If you type a comma (,) **anywhere** within number signs in a format field, File automatically formats the number field with commas separating thousands.

Never enter a minus sign (–) when formatting a number field. To display negative values in data fields, type the minus sign when filling in the data field.

Format a field in scientific notation by entering number signs and E as follows:

```
# . # # E # # #
```

No more than 2 #'s are allowed before the decimal; 3 always appear after the E. (Type at least one # after the E in the FORM field, File adds the other 2.)

When you create a new data base, the cursor highlights the intersection of the NEW column and row. Move to the FORM field for the column you want to format, then edit the field.

1. Use the arrow keys to move the cursor to the FORM row of the appropriate column. AAAAAAAAAA appears in the field if the format has not been changed.

2. Press ⌐E⌐ for the Edit command. AAAAAAAAAA appears in the EDIT field. The entire field is selected.

3. Type # as many times as needed to format your field. Include ., E, $ and any other boilerplate characters for the field.

4. Press ⌐ENTER⌐ to change the format field and return to the Command mode. Press ⌐←⌐ or ⌐→⌐ to change the format field and move to the previous or next format field without leaving the Edit mode.

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```

# Entering Date/Time Field Formats

Type the characters **M**, **D**, and/or **Y** to format a column to contain dates. Type the characters **H**, **M**, and/or **S** to format a column to contain times. The number of characters you type in a FORM field, including spaces and boilerplate characters, determines the width of all data fields in that column.

File interprets any characters other than M, D, Y, H, or S in a date/time field as boilerplate characters and inserts these characters automatically as you fill in the data field.

The following character combinations are valid in date/time fields:

| | |
|---|---|
| YYYY | 4 digit year (1985) |
| YY | 2 digit year (85) |
| MM | 2 digit month ( 9) |
| MONTHNAME | full month name (September) |
| MMM | 3 letter month abbreviation (Sep) |
| DD | 2 digit day ( 7) |
| | |
| HH | 2 digit hour; 24-hour clock unless AM or PM specified ( 6) |
| MM | 2 digit minutes (09) |
| SS | 2 digit seconds (05) |
| AM or PM | 12-hour clock; if AM or PM is entered, a time entered in a data field defaults to AM or PM according to the format field value; specify a value by typing either A or P in the data field |

*Note:* MM before HH represents a month; MM after HH represents minutes. Date and time fields are considered to be numeric fields.

When you create a new data base, the cursor highlights the intersection of the NEW column and row. Move to the FORM field for the column you want to format, then edit the field.

1. Use the arrow keys to move the cursor to the FORM row of the appropriate column. AAAAAAAA appears in the field if the format has not been changed.

2. Press ⌶E⌶ for the Edit command. AAAAAAAAAA appears in the EDIT field. The entire field is selected.

3. Type the date/time characters indicated above.  Include boilerplate characters as needed.

4. Press ⌈ENTER⌉ to change the format field and return to the Command mode.  Press ⌈←⌉ or ⌈→⌉ to change the format field and move to the previous or next format field without leaving the Edit mode.

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# Sorting Records

You fill in fields of the SORT record to specify how you want to sort the data records. Perform a sort only after the data base contains data records. If no records exist when a sort is performed, the sort is ignored. If you enter sort criteria in a SORT field, then add records. The records are sorted each time you press ENTER. Specify one or more fields by which to sort, "key" fields, in ascending or descending order.

Key field entries have 2 parts: priority and order. The priority (1, 2, 3, and so forth) determines the order in which columns are sorted. The primary sort is on the column in which the SORT priority is 1. A secondary sort (if necessary) is performed on the column with a SORT priority of 2, and so forth. Each priority can only be sorted once. If more than one column contains the same priority, all but the first occurrence are ignored.

The order of the sort (Down or Up) specifies a descending or ascending order for the sort. Up sorts in this order: space, 0 – 9, A – Z, a – z. Down sorts in this order: z – a, Z – A, 9 – 0, space. (Down in a numeric field sorts from the largest to the smallest number.)

When you create a new data base, the cursor highlights the intersection of the NEW column and row. Move to the SORT field for the column by which you want to sort, then edit the field.

1. Use the arrow keys to move the cursor to the SORT row of the appropriate column.

2. Press E for the Edit command.

3. Type a priority number (1, 2, 3, and so forth), then type D or U for descending or ascending order.

4. Press ENTER to enter the sort criteria and return to the Command mode. The records are sorted according to the priority and order criteria you entered.

   *Note:* If you press an arrow key to leave the SORT field, the criteria is entered, but the records are not sorted. Press ENTER at any field to sort the File records.

# Searching For Records (FIND)

You fill in fields of the FIND record to search for one or more records that contain specific information. Enter search criteria in one or more "key" fields.

Key field entries have 2 parts: an operator and the search data. Operators specify a value or range of values. File recognizes the following operators:

| | |
|---|---|
| = | equal to |
| < > | not equal to |
| < | less than |
| =< | less than or equal to |
| <= | less than or equal to |
| > | greater than |
| => | greater than or equal to |
| >= | greater than or equal to |

The search data is the data for which you wish to search. If you have entered any boilerplate characters in the FORM field, these must be included in the search data. Search for a blank field by entering =" " or = " ". Do not type a space between the double quotes. Search for matching data in more than one field by entering criteria in each field you want to match.

# Searching for Exact or Partial Matches

Enclose search data in quotes to search for an exact match, including uppercase/lowercase distinctions. You can also include wildcard characters (* and ?) in your search data (in text fields only) to search for partial matches. Refer to "Using Wildcard Characters" in "Chapter 1, System Manager" for more information.

# Entering More Than One Criterion in a Field

Enter search criteria in more than one FIND field to search for all records that match both criteria. Enter more than one search criterion in a single FIND field to search for all records that meet both conditions in the same column. Separate two criteria in the same FIND field with an ampersand (&).

```
FIND||>=Jun 01 1985 & <=Jul 31 1985 ||                    ||
```

Searches for and displays all records that contain dates from June 1, 1985 through July 31, 1985 in the column in which the search criteria are entered.

```
FIND|| >=Jun 01 1985 || <=$100000.00 ||                    ||
```

Searches for and displays all records that contain dates later than June 1, 1985 in the first column and amounts less than $100,000.00 in the second column.

When you create a new data base, the cursor highlights the intersection of the NEW column and row. Move to the FIND field for the first column in which you want to search for data, then edit the field. Enter FIND criteria in as many fields as needed for the search. Press ENTER after the last field is entered.

1. Use the arrow keys to move the cursor to the FIND row of the appropriate column.

2. Press E for the Edit command.

3. Type the search criteria.

4. Press → to enter the criteria and move to the next field or press ENTER to enter the criteria and immediately perform the search. The records that match all search criteria are displayed.

   Note: You must press ENTER to begin a FIND search.

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Entering More Than One FIND Record

At times, you may want to search for records that match one set of criteria or another set. Use the Find command to add another FIND record to the data base.

1. Press ESC if you are not already in the Command mode.

2. Press F for the Find command. The new field appears above the first one.

3. Edit the FIND fields in the new record to reflect the values for which you wish to search.

4. Press ENTER. All data records that match either FIND record are displayed.

Entering Column Names in Key Fields

The FIND record can also compare the contents of 2 or more columns. For example, suppose you create a data base that include the column ID's "Projected" and "Actual," referring to projected and actual expenses. To find data records in which actual expenses were less than or equal to projected expenses, enter <= **Projected** in the Actual column of the FIND record. All records with Actual column values less than or equal to Projected column values appear.

Redisplaying All Records

Redisplay all records in the data base by deleting all FIND values or choosing No in the find field of the Options command.

Deleting a FIND Record

Delete a FIND record by placing the cursor on the record and pressing SHIFT F9 to select the record. Press ESC if you are not already in the Command mode. Then, press D for the Delete command.

The File Commands

File defaults to the Command mode. Use the 10 File commands to add and control information in your data base. Choose the Edit command to go into the Edit mode and begin entering data base information. Each data base can contain up to 4,095 records, with up to 64 fields each (12 fields on the screen at one time). File allows up to 230 characters in each field (74 characters on the screen at one time).

Enter data in more than one record by copying all or part of the record to one or more records. You can also delete, search for, move, or print records. In addition, you can insert information into your data base from another data base.

Copy

Use the Copy command to duplicate the selected field, record (row), or column for insertion elsewhere in the data base or in another application. The copied data is placed in the scrap.

1. Select the column or record to move by pressing [SHIFT] [F8] or [SHIFT] [F9]. Select more than one row or column by pressing [F6] to extend the selection, then pressing the appropriate arrow key.

2. Use the [F5] key to choose the appropriate scrap mode. (Replace is the default; press [F5] once for Append.)

3. Press [C] for the Copy command. The selected area is copied.

Follow the instructions in "Insert" to insert the data elsewhere in your data base.

Delete

Use the Delete command to delete the selected record (row) or column. When you delete one or more records or columns, File automatically renumbers the remaining records or columns.

1. Select the column or record to move by pressing [SHIFT] [F8] or [SHIFT] [F9]. Select more than one row or column by pressing [F6] to extend the selection, then pressing the appropriate arrow key.

2. Use the [F5] key to choose the appropriate scrap mode. (Replace is the default; press [F5] once for Append, twice for No Scrap.)

3. Press [D] for the Delete command. The selected area is deleted.

   Note: To delete an entire data base, delete the data base's .FIL and .DAT files.

Edit

Use the Edit command to put File into the Edit mode for adding information to your data base. You also enter column headings, format record fields, and enter sort and search criteria in the Edit mode. Edit is the default response on the File command menu.

Entering Column Headings

Use the ID record to enter column headings.

1. Use the arrow keys to move the cursor to the first column in the ID row.

2. Press [E] for the Edit command.

3. Type the column heading for the field. Press [→] to enter the heading and move to the next field without leaving the Edit mode. The information is entered.

4. Repeat Step 3 until the column headings are complete.

5. Press [ENTER].

Entering Data

1. Use the arrow keys to move the cursor to the intersection of the NEW column and row (or to the first field of the record you want to edit).

2. Press ⌷E⌷ for the Edit command.

3. Type the data you want to enter into the field, and press ⌷ENTER⌷. The information is entered. (Type the data, and press ⌷→⌷ to enter it and move to the next field without leaving the Edit mode.)

Find

Use the Find command to add another FIND record for searching for either of two sets of criteria.

1. Press ⌷ESC⌷ if you are not already in the Command mode.

2. Press ⌷F⌷ for the Find command. The new field appears above the first one.

3. Edit the FIND fields in the new record to reflect the values for which you wish to search.

4. Press ⌷ENTER⌷. All data records that match either FIND record are displayed.

Insert

Use the Insert command to insert the contents of the scrap in the currently selected record(s) or column(s). Also use the Insert command to retrieve data from another application program.

1. Select the column(s) or record(s) into which you want the scrap data inserted by pressing ⌷SHIFT⌷⌷F8⌷ or ⌷SHIFT⌷⌷F9⌷. Select more than one row or column by pressing ⌷F6⌷ to extend the selection, then pressing the appropriate arrow key.

2. Press ⌷I⌷ for the Insert command. File inserts the scrap data immediately before the first selected record or column.

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All records are sequentially renumbered if one of more records is inserted. File inserts only as many fields of data from scrap as there are fields to receive them.

If columns are inserted, File attempts to provide a format for the inserted column(s).

If you attempt to insert scrap data into fields formatted differently, File tries to convert the inserted field's formats. Number and date/time formats are not interchangeable. (One cannot be converted to the other.)

Jump

Use the Jump command to move the cursor to a specific record and column or to select large portions of the data base.

1. Press ☐J☐ for the Jump command. The screen shows:

```
JUMP to record: NEW          column: NEW
Enter record number or name
```

2. The current record number or id is the proposed response. Use the proposed response, or type the number or name of the record to which you wish to jump.

   (For example, type: **15** to move to record 15, **form** to move to the FORM record, **new** to move to the NEW record, and so forth.)

3. Press ☐TAB☐ to move to the column field. The current column number or id is the proposed response. Use the proposed response, or type the number or id of the column to which you wish to jump.

   (For example, type: **name** to move to a column titled name, **C3** to move to the untitled third column, **new** to move to the NEW column, and so forth.)

4. Press ☐ENTER☐ to carry out the Jump command.

   To select large portions of a data base, press ☐F6☐ before you press ☐J☐ in Step 1. Type the record and column, and press ☐ENTER☐. The screen highlights the fields starting from (but not including) the original field, to the record and column you entered.

LookUp

Use the LookUp command to fill all or part of one or more columns in one data base (the destination) with information stored in another data base (the source). The current data base is considered the destination. The "lookup" columns in the source and destination data bases must have the same name.

The File tutorial contains an example using the LookUp command. Refer to the tutorial for more information.

1. Press [SHIFT] [F8] to select the column to receive the information. Use [F6] if you want to extend the selection to include more than one column.

2. Press [L] for the LookUp command. The screen shows:

```
LOOKUP in: ■                           matching fields:
Enter file name
```

3. Type the name of the data base from which you are drawing the information.

4. Press [TAB] to move to the next field. Type the name (ID) of the column or columns that File will use to find the information you want. Separate a list of names with commas.

5. Press [ENTER] to carry out the LookUp command.

Move

Use the Move command to move the selected record (row) or column.

1. Select the column or record to move by pressing [SHIFT] [F8] or [SHIFT] [F9]. Select more than one row or column by pressing [F6] to extend the selection, then pressing the appropriate arrow key.

2. Press [M] for the Move command. The screen shows:

```
MOVE to before: 2|3|4■
```

3. The current column or record number is the proposed response. Type the column or record number before which you want to move this column or record.

4. Press [ENTER] to carry out the Move command.

Options

Use the Options command to turn on and off the FIND option.

1. Press ☐O☐ for the Options command. The screen shows:

   OPTIONS find: ⬛Yes⬛ No

2. Yes is the proposed response. Use the proposed response, or press the space bar to choose No.

   If you choose No, File displays all data base records regardless of the FIND record criteria. If you choose Yes, File displays only those data records specified by your FIND criteria.

3. Press ☐ENTER☐ to carry out the Options command.

Print

Use the Print command to print all or part of a data base on the printer or to a file.

When printing the data base on the printer, be sure the printer is properly connected, turned on, and set up before you begin to print. File uses the settings from the System Manager Set Printer command. If the data is wider or longer than the paper, remaining columns or records are printed on successive pages.

1. Use ☐SHIFT☐ ☐F8☐ and ☐SHIFT☐ ☐F9☐ to select columns and records to print only a portion of the data base. Use ☐F6☐ if you want to extend the selection to include more than one column or record. ☐SHIFT☐ ☐F10☐ selects the entire data base.

2. Press ☐P☐ for the Print command. The screen shows:

   PRINT to: ⬛PRN:⬛   style:(Text)Interchange

3. The printer (PRN:) is the proposed response. Use the proposed response, or type the name of the file to which you wish to print the data base.

4. Press TAB to move to the style field. Text is the proposed response. Use the proposed response to print the data base on the printer on to a file.

   Press the space bar to choose Interchange to print the data base to a file in the proper format for transferring to a desktop computer data base filing system.

5. Press ENTER to carry out the Print command.

The File Tutorial

The File tutorial takes you through the process of creating an address book.

Creating the Data Base

1. At the System Manager screen, place the cursor over FILE, and press ⎡R⎤ for the Run command. The screen shows:

   ```
   RUN application: FILE                    file:
   ```

2. Press ⎡TAB⎤ to move to the file field.

3. Type **address**, and press ⎡ENTER⎤. A blank data base appears. The File command menu, message line, and status line appear at the bottom of the screen.

```
ID   ║NEW
FORM ║AAAAAAAAAA
SORT ║
FIND ║
NEW  ║


> Copy Delete EDIT Find Insert Jump LookUp Move Options Print
Copyright (1984, 1985) Microsoft Corp.
File: ADDRESS                          Records: 0/0
```

Sample Data

Enter the following data into your data base. (You can enter your actual records if you prefer.)

1   Dennis Marshall (Personal)
             217 NE 151, Seattle, WA 98123
             (206) 753-1234
             Birthday: 3/12

2   Tom Johnson (Business)
14727 Emerald Blvd., Seattle, WA 98122
(208) 753-4321
Birthday: 11/14

3   Margaret Smith (Personal)
3275 Esther St., Boise, ID 83712
(308) 972-6112
Birthday: 1/21

4   Fred Williamson (Business)
721 Airport Rd., Renton, WA 98119
(206) 752-8274
Birthday: 7/8

5   Betty Sanford (Personal)
45631 Palmdale Ave., La Jolla, CA 94333
(216) 639-3782
Birthday: 2/18

6   Mike Johnson (Personal)
9919 NE Spruce St., Portland OR 90231
(503) 848-8883
Birthday: 10/4

7   Alice Buford (Personal)
152 NE 14 Apt. B, Seattle, WA 98123
(206) 753-1112
Birthday: 4/15

8   Bill Carter (Personal)
2821 Olive St., Sacramento, CA 93522
(916) 487-0665
Birthday: 9/22

9   Don Peterson (Business)
756 Fir St., Lynnwood, WA 98129
(206) 564-7465
Birthday: 12/12

10   Timothy Jones (Personal)
514 SE Newport Rd., Bremerton, WA 93125
(206) 753-4499
Birthday: 9/17

Formatting Columns

Format columns to specify the size and type of data for the fields in that column. The default format is AAAAAAAAAA, to indicate text columns, 10 characters wide.

Before you format fields in any column, consider how much space you need. Although any information you enter in a field can exceed the width you specify in the Form record, the screen shows only the specified number of characters.

Use the first column for the names in the address file. Format the first column of the data base:

1. Use the arrow keys to place the cursor in the FORM field of the first column.

2. Press ⒠ for the Edit command. The screen shows:

   EDIT: AAAAAAAAAA

3. Press ⒡⒥ to select the first character in the EDIT field. Type **aaaaa** (5 a's) to add 5 characters to the first column, making it 15 characters wide.

4. Press ⟶. File labels the first column C1 and adds a NEW column.

Use the second column to indicate a type of address (P for personal friends and B for business associates). Although you can format the column for a single character of text, leave enough room for the column heading, "Type."

1. The cursor is in the second column in the FORM record. The screen shows:

   EDIT: AAAAAAAAAA

2. Type **aaaa** (4 a's) to replace the current format with a 4-character text field.

3. Press ⟶. File labels the second column C2 and adds a NEW column.

Use the third column for addresses.

1. The cursor is in the third column in the FORM record. The screen shows:

    EDIT: ▓HHHHHHHHH▊

2. Press ⌐F9⌐ to select the first character in the EDIT field. Type 20 a's to add 20 characters to the third column, making it 30 characters wide.

3. Press ⌐→⌐. File labels the third column C3 and adds a NEW column.

Use the fourth column for phone numbers. Because phone numbers in addresses are descriptive rather than mathematical, format them as text.

1. The cursor is in the fourth column in the FORM record. The screen shows:

    EDIT: ▓HHHHHHHHH▊

2. Type **(aaa) aaa-aaaa**. The parentheses around the area code and the dash between the first 3 and last 4 digits of the phone number are boilerplate characters.

    File automatically inserts these characters into any phone number field you fill in later. File also inserts the space between the area code and the phone number.

3. Press ⌐→⌐. File labels the fourth column C4 and adds a NEW column.

The last column in your data base contains birthdays.

1. The cursor is in the fifth column in the FORM record. The screen shows:

    EDIT: ▓HHHHHHHHH▊

2. Type **mm/dd** to replace the current format. The / between the parts of the date format is a boilerplate character. Like the boilerplate characters in the Phone column, File automatically inserts this character into any "Birthday" field you fill in later.

3. Press ⌐←⌐ 4 times to redisplay Column 1.

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The ID and Form records now look like this:

```
ID   ∥C1              ∥C2  ∥C3                              ∥C4          ∥C5   →
FORM∥▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓∥AAAA∥AAAAAAAAAAAAAAAAAAAAAAAAAAAAAA∥(AAA) AAA-AAAA∥MM/DD∥
```

Naming Columns

Now let's name the formatted columns. The cursor is currently in Column 1 of the FORM record, and File is in the Edit mode.

1. Press ⬆ to move to the first column of the ID record.

2. Type **Name**, and press →⃞ to move to Column 2. Name replaces C1 as the name of the first column.

3. Type **Type**, and press →⃞ to move to Column 3. Type replaces C2 as the name of the second column.

4. Type **Address**, and press →⃞ to move to Column 4. Address replaces C3 as the name of the third column.

5. Type **Phone**, and press →⃞ to move to Column 5. Phone replaces C4 as the name of the fourth column.

6. Type **Birth** (for Birthday) as the column name for Column 5. Press ENTER . Birth replaces C5 as the name of the fifth column.

The ID and Form records now look like this:

```
ID   ∥Name            ∥Type∥Address                        ∥Phone       ∥Birth→
FORM∥AAAAAAAAAAAAAAAA∥AAAA∥AAAAAAAAAAAAAAAAAAAAAAAAAAAAAA∥(AAA) AAA-AAAA∥MM/DD∥
```

Entering Data Records

Once you name the columns, you can begin entering records, field by field, into the data base.

1. Use the arrow keys to move to the Name field of the NEW record.

2. Press [E] for the Edit command.

3. Type **Marshall, Dennis**. By typing the last name first, you can later sort records into alphabetical order.

4. Press [→] to move to the next field in the record.

The NEW record moves down 1 line, and Record 1 appears. The name you typed appears in the Name field of Record 1.

The upper portion of the screen now looks like this:

```
ID    ║Name                  ║Type║Address                                    ║Phone          ║Birth→
FORM  ║AAAAAAAAAAAAAAAAAA    ║AAAA║AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA            ║(AAA) AAA-AAAA ║MM/DD║
SORT  ║                      ║    ║                                            ║               ║
FIND  ║                      ║    ║                                            ║               ║
1     ║Marshall, Denni║      ████ ║                                            ║               ║
NEW   ║                      ║    ║                                            ║               ║
```

Although there is not enough room for your entire entry to appear in the Name field of Record 1, don't worry about that now.

Now, enter the rest of the data for Record 1:

1. Type **P** to indicate "Personal," and press [→].

2. Type **217 NE 151 Seattle WA 98123**. To display as much of an address as possible within the 30 characters, omit the punctuation (periods and commas) you usually include when writing an address. Press [→].

3. Type **2067531234**, and press [→].

4. Type **3/12** (or **3 12**).

Continue building your data base by entering records 2-10 of the Sample Data. The screen now appears like this:

```
ID   ||Name            ||Type||Address                         ||Phone      ||Birth→
SORT ||                ||    ||                                ||           ||
FIND ||                ||    ||                                ||           ||
1    ||Marshall, Denni ||P   ||217 NE 151 Seattle WA 98123     ||(206) 753-1234||3/12
2    ||Johnson, Tom    ||B   ||14727 Emerald Blvd Seattle WA   ||(208) 753-4321||11/14
3    ||Smith, Margaret ||P   ||3275 Esther St Boise ID 83712   ||(308) 972-6112||1/21
4    ||Williamson, Fre ||B   ||721 Airport Rd Renton WA 98119  ||(206) 752-8274||7/2
5    ||Sanford, Betty  ||P   ||45631 Palmdale Ave La Jolla CA  ||(216) 639-3782||2/18
6    ||Johnson, Mike   ||B   ||9919 NE Spruce St Portland OR   ||(503) 848-8883||10/4
7    ||Buford, Alice   ||B   ||152 NE 14 Apt B Seattle WA 981  ||(206) 753-1112||4/15
8    ||Carter, Bill    ||P   ||2821 Olive St Sacramento CA 93  ||(916) 487-0665||9/22
9    ||Peterson, Don   ||B   ||756 Fir St Lynnwood WA 98129    ||(206) 564-7465||12/13
10   ||Jones, Timothy  ||P   ||514 SE Newport Rd Bremerton WA  ||(206) 753-4499||
> Copy Delete Edit Find Insert Jump LookUp Move Options Print
Select option or type command letter
File: FILE1                      Records: 10/10
```

Notice that the FORM record has scrolled off the screen to make room for the tenth record. If another record is added, the SORT record scrolls off the top of the screen.

Widening a Column

The Address column is not wide enough to display the entire address, including the zip codes. Widen the column.

1. Move the cursor to the Address column in the FORM record, and press ⎡E⎤ for the Edit command.

2. Press ⎡F9⎤, then type **aaaaaa** (6 a's) to widen the column to 36 characters. Press ⎡ENTER⎤. The screen now appears like this:

```
ID   ||Name            ||Type||Address                             ||Phone       →
FORM ||AAAAAAAAAAAAAAAA||AAAA||AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA ||(AAA) AAA-AAAA
SORT ||                ||    ||                                    ||
FIND ||                ||    ||                                    ||
1    ||Marshall, Denni ||P   ||217 NE 151 Seattle WA 98123         ||(206) 753-1234
2    ||Johnson, Tom    ||B   ||14727 Emerald Blvd Seattle WA 98122 ||(208) 753-4321
3    ||Smith, Margaret ||P   ||3275 Esther St Boise ID 83712       ||(308) 972-6112
4    ||Williamson, Fre ||B   ||721 Airport Rd Renton WA 98119      ||(206) 752-8274
5    ||Sanford, Betty  ||P   ||45631 Palmdale Ave La Jolla CA 94333||(216) 639-3782
6    ||Johnson, Mike   ||B   ||9919 NE Spruce St Portland OR 90231 ||(503) 848-8883
7    ||Buford, Alice   ||B   ||152 NE 14 Apt B Seattle WA 98123    ||(206) 753-1112
8    ||Carter, Bill    ||P   ||2821 Olive St Sacramento CA 93522   ||(916) 487-0665
9    ||Peterson, Don   ||B   ||756 Fir St Lynnwood WA 98129        ||(206) 564-7465
```

Increasing the width of the Address fields scrolls the column containing the "Birth" fields off the screen. The →, indicating 1 or more hidden columns to the right, now forms the right border of the Phone column.

Sorting the Data Records

Now, sort the records into personal friends and business associates:

1. Move the cursor to the Type column in the SORT record, and press ⌐E⌐ for the Edit command.

2. Type **1d** (1 down) to sort the records by type, in descending order (P before B). Press ⌐ENTER⌐.

When File finishes the primary sort, the records are sorted in this order:

```
ID   ║Name          ║Type║Address                          ║Phone        →
SORT ║              ║ UD ║                                 ║
FIND
1    ║Marshall, Denni║P  ║217 NE 151 Seattle WA 98123      ║(206) 753-1234
2    ║Smith, Margaret║P  ║3275 Esther St Boise ID 83712     ║(308) 972-6112
3    ║Sanford, Betty ║P  ║45631 Palmdale Ave La Jolla CA 94333║(216) 639-3782
4    ║Carter, Bill   ║P  ║2821 Olive St Sacramento CA 93522 ║(916) 487-0665
5    ║Jones, Timothy ║P  ║514 SE Newport Rd Bremerton WA 98125║(206) 753-4499
6    ║Johnson, Tom   ║B  ║14727 Emerald Blvd Seattle WA 98122║(208) 753-4321
7    ║Williamson, Fre║B  ║721 Airport Rd Renton WA 98119    ║(206) 752-8274
8    ║Johnson, Mike  ║B  ║9919 NE Spruce St Portland OR 90231║(503) 848-8883
9    ║Buford, Alice  ║B  ║152 NE 14 Apt B Seattle WA 98123  ║(206) 753-1112
10   ║Peterson, Don  ║B  ║756 Fir St Lynnwood WA 98129      ║(206) 564-7465
> Copy Delete Edit Find Insert Jump LookUp Move Options Print
Select option or type command letter
File: FILE1                    Records: 11/11
```

To arrange records alphabetically within each group:

1. Move the cursor to the Name column in the SORT record, and press ⌐E⌐ for the Edit command.

2. Type **2u** (2 up) to sort the records by name, in ascending order. Press ⌐ENTER⌐.

Your entry tells File to sort the records a second time (after it sorts by type) by name, in ascending order (A – Z).

When File finishes the secondary sort, the records are sorted in this order:

```
ID   ║Name          ║Type║Address                          ║Phone        →
SORT ║ 2 U          ║1 D ║                                 ║
FIND
1    ║Carter, Bill   ║P  ║2821 Olive St Sacramento CA 93522 ║(916) 487-0665
2    ║Jones, Timothy ║P  ║514 SE Newport Rd Bremerton WA 98125║(206) 753-4499
3    ║Marshall, Denni║P  ║217 NE 151 Seattle WA 98123      ║(206) 753-1234
4    ║Sanford, Betty ║P  ║45631 Palmdale Ave La Jolla CA 94333║(216) 639-3782
5    ║Smith, Margaret║P  ║3275 Esther St Boise ID 83712     ║(308) 972-6112
6    ║Buford, Alice  ║B  ║152 NE 14 Apt B Seattle WA 98123  ║(206) 753-1112
7    ║Johnson, Mike  ║B  ║9919 NE Spruce St Portland OR 90231║(503) 848-8883
8    ║Johnson, Tom   ║B  ║14727 Emerald Blvd Seattle WA 98122║(206) 564-7465
9    ║Peterson, Don  ║B  ║756 Fir St Lynnwood WA 98129      ║(206) 753-4321
10   ║Williamson, Fre║B  ║721 Airport Rd Renton WA 98119    ║(206) 752-8274
> Copy Delete Edit Find Insert Jump LookUp Move Options Print
Select option or type command letter
File: FILE1                    Records: 11/11
```

Finding Data Records

You instruct File to find a particular record or set of records by entering comparisons in 1 or more key fields of the Find record. Include comparison symbols (=, < >, <, < =, = <, >, > =, = >), the ampersand (&), and/or wildcard characters (* and ?) in the FIND criteria.

Suppose you want to find every personal friend in your data base file whose Birthday is in September.

1. Move the cursor to the Type field in the FIND record.

2. Press [E] for the Edit command.

3. Type =**P**, and press [→] 3 times to move to the Birth field.

4. Type => **9/1 &** < = **9/30**. (Search for all dates greater than or equal to September 1 and less than or equal to September 30.)

5. Press [ENTER] to carry out the Edit command.

The records for Bill Carter and Timothy Jones appear.

Deleting a Find Record

The current FIND record is displayed until you change or delete the FIND criteria. To restore all records to the screen, add a new, blank FIND record.

Press [F] for the Find command. A new FIND record is added above the previous one.

Because two or more FIND records display all records that match either record, all the records (matching the blank record) appear.

Using LookUp

Suppose the first thing you do at work in the morning is create a small "reminder" data base in which you list the telephone calls you need to make during the day. You name the new data base CALLS, entering the names and a short notation for the people you need to call. You also format a column to contain phone numbers. However, because you can get them directly from your ADDRESS data base, you do not enter the phone numbers.

Create a CALLS data base that looks something like this:

```
ID   ||NAME             ||Reason                                        ||Phone            →
FORM ||AAAAAAAAAAAAAAAAA||AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA      ||(AAA) AAA-AAAA ||
SORT ||                 ||                                              ||                 ||
FIND ||                 ||                                              ||                 ||
1    ||Marshall, Dennis ||Congratulations on promotion                 ||                 ||
2    ||Johnson, Tom_    ||Sales call                                    ||                 ||
3    ||Williamson, Fred ||Renew car insurance                           ||                 ||
4    ||Buford, Alice    ||Confirm Wednesday lunch                       ||                 ||
5    ||Peterson, Don    ||Sales call                                    ||                 ||
NEW  ||███████████████  ||                                              ||                 ||
```

Now, get the phone numbers you need from your ADDRESS data base:

1. Move the cursor to the Phone column of the CALLS data base. Select the column by pressing ⎡SHIFT⎤ ⎡F8⎤.

2. Press ⎡L⎤ for the LookUp command.

3. Type **address**.

4. Press ⎡TAB⎤ to move to the next field. Type **name**, and press ⎡ENTER⎤.

If the ADDRESS data base is not sorted, File displays the message:

    Lookup file will be sorted. Enter Y to continue:

If this message appears, press ⎡Y⎤ to carry out the LookUp command. File must first sort the records in the ADDRESS data base before copying the data to the CALLS data base.

File compares the names in the Name column of the CALLS data base to those in the Name column of the ADDRESS data base. Whenever File finds a pair of names that match, it copies the phone number for that name from the ADDRESS data base to the Phone column of the record containing the same name in the CALLS data base.

Quitting File

Press ⌈CTRL⌉ ⌈F10⌉ to quit File and return to the System Manager screen. File automatically saves the data you entered.

To erase the practice data base you must delete both the work file and the data file:

1. Highlight the **ADDRESS** work file on the System Manager screen, and press ⌈D⌉ for the Delete command. The screen shows:

   DELETE file: ████████████

2. Press ⌈ENTER⌉ to carry out the Delete command. The work file is deleted.

3. Highlight the **ADDRESS** data file on the System Manager screen, and press ⌈D⌉ for the Delete command. The screen shows:

   DELETE file: ████████████

4. Press ⌈ENTER⌉ to carry out the Delete command. The data file is deleted

Chapter 5 Telcom

TELCOM lets you communicate with another computer over the
telephone lines or by a direct connection. Use Telcom on the Tandy 600 to
read news or financial data from an information service, access large
computer databases, exchange information with a friend or colleague, and
transfer files to and from your computer. CompuServe®, Dow Jones
News/Retrieval®, and The Source® are a few examples of the many
information services you can access.

The computer from which you gather information is known as the "host"
computer. Your Tandy 600 is regarded as the "remote" during
telecommunications. To communicate over telephone lines, both the host
and remote must be connected to a "modem."

The modems translate the computers' outgoing communication signals into
a form the telephone lines can transmit and the incoming signals back into
computer-readable information. The Tandy 600 includes a built-in
modem.

Also use Telcom to automatically dial telephone numbers from a list you
create. The dialer generates tone signals for use with long-distance
services. After dialing is complete, pick up the telephone receiver to begin
a normal telephone conversation.

Special Telcom Keys

Function Keys

Telcom uses the following function keys:

F1	Functions the same as LABEL.
F3	Controls the Text Capture mode. Text Capture is turned off when you begin Telcom.
	In Capture mode, all incoming text is sent to (captured in) a temporary storage place in memory called a "buffer file." Cp appears on the status line for the Capture mode.
F4	Controls the Text Print mode. Text Print is turned off when you begin Telcom.
	In Print mode, all incoming text is sent to the printer as it is received. Pr appears on the status line for the Print mode.
F6 — F10	Function as Selection Keys. Refer to "Selection Keys."
SHIFT F1	Functions the same as SHIFT LABEL.
SHIFT F3	Erases, or "Clears," the contents of the buffer file in which incoming text is stored when the Capture mode (F3) is active. Clear the buffer before you begin transferring a large file to your computer.
SHIFT F4	Controls the Voice mode. Voice mode is turned off when you begin Telcom.
	In Voice mode, the computer transmits voice signals, normal telephone conversation, over the telephone lines. Voice appears on the status line for the Voice mode.
CTRL F1 — CTRL F10	Function as system function keys. Refer to "System Function Keys" in the Overview.

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Editing Keys

SHIFT BKSP
(DEL)

In Terminal mode, transmits a Delete character.

In command fields, Deletes the current selection.

In Script mode, Deletes the selected phrases.

Text Selection Keys

F6

Extends the current Selection (highlighted text). F6 works in conjunction with the other selection keys: F7, F8, F9, F10, and the arrows. Press F6 then press a selection key.

←

Selects the next character to the left when used with Extend Select (F6).

→

Selects the next character to the right when used with Extend Select (F6).

↑

Selects the previous line when used with Extend Select (F6).

↓

Selects the next line when used with Extend Select (F6).

F7

Selects (highlights) the first Word to the Left of the cursor that is not already selected. If the cursor is in the middle of a word, F7 selects that word.

F8

Selects (highlights) the first Word to the Right of the cursor that is not already selected. If the cursor is on a word, F8 selects that word.

F9

Selects (highlights) the next Character to the Left.

F10

Selects (highlights) the next Character to the Right.

Command Keys

[PAUSE]	In Terminal mode, temporarily stops the display of the incoming data so that you can review the received data. Press [PAUSE] again to continue displaying the incoming data.
[SHIFT] [PAUSE] ([BREAK])	Goes into the Command mode from the Terminal mode without disconnecting communications. Press [C] for Connect to return to the Terminal mode.
[SHIFT] [ESC]	Goes into the Command mode from the Terminal mode without disconnecting communications. Press [C] for Connect to return to the Terminal mode.
[ESC]	In the Command mode, cancels the command and returns to the Session command menu. Connect is again highlighted as the default command.
[ENTER]	In the Command mode, carries out the current command using default values or values you fill in for the command fields.

Special keys for the command menu are:

[TAB] or space bar	Moves to the next command.
[SHIFT] [TAB] or [BKSP]	Moves to the previous command.

Special keys for the command fields are:

[TAB]	Moves to the next command field.
[SHIFT] [TAB]	Moves to the previous command field.
space bar	Moves to the next item in a menu-type command field.
[BKSP]	Moves to the previous item in a menu-type command field.

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Setting Up a Phonebook File

Telcom uses a phone book to obtain the telephone number and communications settings it needs to establish a connection. You create the phonebook in the File application. At least 3 columns are needed for a phonebook: Name, Number, and Settings.

Set up your phonebook file before you run the Telcom applications. Specific instructions for setting up a phonebook file are given in the "Telcom Tutorial." Refer to the tutorial section of this chapter for more information.

Changing the Settings in the Phonebook File

You can leave the settings field in the phonebook file blank and use the default settings. You can also enter the settings directly. Settings entered directly appear on the File screen as a "string" of setting items, separated by semicolons. For example:

       300;1;8;N;X;F;V;C;L;f

The settings appear in the same order as in the Modify command. Type the first three settings (**300;1;8** in our example) as they appear in the Modify fields (baud rate, stop bits, and word length). Type the other settings as indicated in the following list. Type a semi-colon between each entry. Omit an entry by typing only the semi-colon. Omitted entries use the defaults.

parity	E	for Even
	O	for Odd
	N	for None
	I	for Ignore
xon/xoff	X	for On
	x	for Off
duplex	F	for Full
	H	for Half
terminal	T	for On
	V	for Off
add to EOL	N	for None
	C	for CR
	L	for LF
strip linefeeds	L	for Yes
	l	for No
filter characters	F	for Yes
	f	for No

Starting and Quitting Telcom

Telcom is the next to the last application name that appears on the System Manager screen. When you first start the Tandy 600 or return to the System Manager screen from another application, the cursor highlights the Word application. Run is the default on the System Manager command menu.

To run the Telcom application:

1. Use the arrow keys to place the cursor over TELCOM.

2. Place the command selection marker over Run, and press ENTER. The Telcom screen appears. The Session command menu appears at the bottom of the screen.

"Script" files are the Telcom equivalent of work files in the other applications. You create "script" files to store auto-logon information. As you create script files, their filenames appear to the right of TELCOM on the System Manager screen.

To run an existing Telcom script file:

1. Use the arrow keys to place the cursor over the name of the Telcom script file you want to run.

2. Place the command selection marker over Run, and press ENTER. The first "page" of the script file appears. The cursor appears in the same position as when you last accessed the file.

Quit the Telcom application and return to the System Manager by pressing CTRL F10. Quit the Telcom application and return to the previous application accessed by pressing CTRL F9.

Note: If you are online (connected) to a host and you quit Telcom, you remain online with the host. You must disconnect communications before you quit if you do not plan to remain online.

The Telcom Modes

There are four modes in which you use Telcom: Command, Script, Terminal, and Answer.

Command Mode

The Command mode lets you set up communications. The default communication settings are appropriate for most uses. The most common settings are the proposed responses in the command fields. Whatever settings you use, they **must** match those of the host computer. Telcom begins in the Command mode. Press [SHIFT] [ESC] to return to the Command mode from the Terminal mode and [S] (for Session) from the Script mode.

Script Mode

The Script mode lets you create files that contain communication settings and instructions. You can then use the script files to automatically log on (auto-logon) to an information service or automatically dial a telephone number (auto-dial). Press [S] (for Script) in the Command mode to go to the Script mode and display the Script command menu.

You can also use a script file in conjunction with the System Manager Set Wake command. The Wake command turns on the Tandy 600 at the specified date and time, then enters the Telcom script file. The script file then can connect to a host, download or upload information, and disconnect from the host.

Terminal Mode

Telcom uses the Terminal mode to establish a connection and actually communicate the data. The Terminal mode is interactive. Characters you type are sent to the host and incoming data sent by the host appears on your screen as it is received. The data you send also appears on your screen if the host computer echoes your transmissions. If the host does not echo the data you send, you can set duplex in the Modify command to display your data on the screen as you type (half duplex). Press C (for Connect) in the Command mode to go to the Terminal mode.

Answer Mode

The Answer mode sets up the Tandy 600 to receive incoming calls when it is unattended. Answer mode gives another computer access to your files.

Setting Up Communications

Before you can communicate with another computer or automatically dial a phone number, you must first set up communications. Setting up Telcom communications is a two-part process: connecting the two computers and setting the communication parameters.

Connecting the Computers

The first step in setting up communications is connecting the Tandy 600 to the host. You can "hardwire" two computers that are side-by-side or connect two computers over a telephone line.

Phone line connections can be direct, through the Tandy 600's built-in modem, or indirect, using an acoustic coupler or other modem. A direct connection is much more reliable than an indirect one, and usually necessary for automatic dialing.

Hardwiring the Computers

If you plan to connect to a host computer that is nearby (up to 100', depending on the length of your cable), hardwire the two computers.

1. Connect a DB-25 RS-232C Cable to the RS-232C port at the back of the Tandy 600.

2. Connect the other end of the cable to a Null Modem Adapter, then to the host computer.

Figure 17. Tandy 600 Hardwired to Host

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Directly Connecting over the Phone Line

1. Connect a Direct-Connect Modem Cable (with the Shorting Plug removed) to the PHONE jack on your computer. (Refer to the figure below.)

2. Unplug your telephone cord from the phone, and plug the modem cable plug (at the end of the silver wire) into the telephone.

3. Plug the telephone cord (still connected to the phone's wall jack) into the telephone connector (the beige box) on the modem cable.

4. Set the Direct Connect/Acoustic Coupler Switch on the left side of the computer to DIR.

Figure 18. Direct Phone Line Connection

Note: If you do not plan to use Telcom for normal telephone conversations (Voice), you can remove the Telephone Connector Box from the end of the beige wire of the modem cable. Then, plug the beige wire directly into the phone's wall jack.

Indirectly Connecting over the Phone Line

Acoustic Coupler

There are some phones that do not have removable cords (in some hotel rooms, for example). Use an acoustic coupler to indirectly connect the computers if you cannot disconnect the phone cord.

1. Plug the Acoustic Coupler into the PHONE jack on your computer.

2. Slip the Acoustic Coupler Speaker over the mouthpiece on the phone.

3. Slip the Acoustic Coupler Microphone over the phone speaker.

4. Set the Direct Connect/Acoustic Coupler Switch on the left side of the computer to ACP.

Figure 19. Acoustic Coupler Connection

Other Modems

The built-in modem transmits data at 300 baud. If you want to transmit at a faster speed, you can override the internal modem by connecting another modem to the Tandy 600.

1. Connect the external modem cable to RS-232C port at the back of your computer.

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2. Connect the modem to the phone line as instructed in the modem's user's guide.

Figure 20. RS-232C Connection to Another Modem

Setting the Communication Parameters

The second step in setting up communications is setting the communication parameters. The default parameters proposed by Telcom are sufficient for most communications. Use the Option and Modify commands to check and/or change the settings. Refer to "Option" and "Modify" in this chapter for more information.

The Telcom Screen

When you run the Telcom application, a Session screen appears. The Telcom Session command menu, copyright line, and status line appear at the bottom of the screen. Telcom begins in the Command mode, with the command selection marker highlighting the Connect command.

```
> Answer Connect Disconnect Modify Options Run Script Transfer
Copyright (1984, 1985) Microsoft Corp.
Telcom Session: OFFLINE
```

Figure 21. A Blank Telcom Session Screen

The status line tells you that a Telcom Session is in progress. OFFLINE appears if there is no connection. The name in the connect to field of the Connect command appears. (The connect to value is an entry from the phonebook file listed in the Options command.) ONLINE appears when no phonebook file is used. The time elapsed since you started the connection appears when you are online.

The Telcom Commands

Telcom defaults to the Command mode; when you run Telcom, the program goes into the Command mode automatically. Use the Telcom commands to set up, establish, and disconnect communications, access the other Telcom modes, and send or receive files.

Answer

Use the Answer command to place Telcom in the Answer mode. The Answer mode sets up the Tandy 600 to receive incoming calls. Answer mode gives another computer (host) access to your files.

1. At the Session command menu, press ⬚A⬚ for the Answer command. The Answer command fields appear:

   ```
   ANSWER using modem:  YES No          password:
                greeting:
   ```

2. Yes is the proposed response to using modem. If you want Telcom to respond immediately to an incoming call without the telephone ringing, press the space bar to choose No. If you choose Yes the phone rings before Telcom answers.

3. Press ⬚TAB⬚ to move to the password field. Type the password that the host computer must enter in order to gain access to your computer. Leave the field blank to permit unlimited access. The proposed response is the current password.

4. Press ⬚TAB⬚ to move to the greeting field. Type the message, or "greeting," that the host computer will receive when it gains access. Greetings can be up to 25 characters long. Leave the field blank if you do not wish to display a message. The proposed response is the last greeting entered.

5. Press ⬚ENTER⬚. Telcom goes into the Answer mode. When a call is received, the Answer menu displays on the host's monitor.

   LIST QUIT RECEIVE SEND >

The host operator chooses a command from the menu by typing the first letter of the command, and pressing ⬚ENTER⬚. Each command displays a menu-type command field that the host operator responds to by pressing the first letter of the appropriate response:

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Commands and Prompts	Host Operator Response
LIST	*drive: filename*
QUIT are you sure?	Y for yes N for no
RECEIVE protocol: file to receive:	N for none X for XMODEM *drive: filename*
SEND protocol: file to send:	N for none P for prompt X for XMODEM *drive: filename*

To cancel a command before pressing ENTER, the host operator presses ESC or CTRL C.

Your screen shows a log of the host computer's actions. You can capture text in the capture to file named in the Options command by pressing F3. You can send incoming text to the printer by pressing F4. (Be sure the printer is on and properly connected and set up.) You cannot scroll while in Answer mode.

Connect

Use the Connect command to establish a connection with a host computer and put Telcom in the Terminal mode. Connect is the proposed response on the Session command menu.

Note: Press SHIFT F4 at any time before Telcom begins dialing if you are using Connect to dial a number for a normal telephone conversation. Voice appears on the status line.

1. At the Session command menu, press C for the Connect command. The Connect command fields appear:

```
CONNECT to: █                              number
       using modem (Yes)No
```

2. Skip this step if you are manually entering a number. (In that case, you must also manually enter the communications settings.)

Otherwise, type the name of the person or company you want to reach. This name must be in the phonebook file you created in the File application. (The name of the phonebook file must be recorded in the phonebook field of the Telcom Options command.)

If you type a wildcard character (*) after the name and press an arrow key, Telcom lists all matching phonebook entries. Press an arrow key without entering a name to list all names in the phonebook file.

3. If you are manually entering a number, press ⌧TAB to move to the number field. The number in the phonebook file for the name entered in Step 2 is the proposed response. If no name was entered, or if the number is different, type a number.

4. Press ⌧TAB to move to the using modem field. Choose Yes if you are connecting over the telephone lines. Choose No if you are hard-wired to the host computer. (Any number entered is ignored if you choose No.)

5. Press ⌧ENTER to carry out the Connect command.

If you are using an acoustic coupler or a modem other than the one built into the Tandy 600, Telcom may not successfully dial the number. If not, dial the number manually.

Dialing... appears on the message line. After it dials the number, Waiting... appears. Telcom waits approximately 30 seconds for the host to respond. If no response is made, Host doesn't respond appears.

To carry on a normal telephone conversation, immediately pick up the phone receiver after Telcom dials the number. Skip Steps 6 and 7 if you are using the Voice mode. Press ⌧SHIFT ⌧F4 again when you want to quit the Voice mode.

Telcom automatically goes into the Terminal mode when the host responds (if you are not in Voice mode). A status line appears at the bottom of the Terminal mode screen.

6. Press ⌧SHIFT ⌧ESC in the Terminal mode to choose a command from the Session menu. Telcom temporarily returns to the Command mode. Since the connection has already been established, return to the Terminal mode simply by pressing ⌧C again.

Reviewing Text

When Telcom receives information, the incoming text appears on the screen as it is received. As the information comes in, it scrolls off the top of the screen to make room for each new line. This is called "free forward scrolling." The information usually scrolls off before you can read it all.

You can pause the free forward scrolling in order to review the information on the screen by pressing PAUSE. You can then use the arrow keys to normally scroll through all text received up to that point. After you review the text, press PAUSE again to resume free forward scrolling. Note that pressing the PAUSE key does **not** stop the transmission of the information, only the display of it on your screen.

Capturing Text to a File

An in-depth screen review of incoming data is usually not practical if the transmission is very long. A more practical method for long transmissions is to save, or "capture," the incoming text into the capture to file specified in the Options command, then review the contents of the file at your leisure. This also saves connect time to the host.

There are two ways to capture text. First, you can pause a transmission, select a portion of the text, then turn on the text capture mode (F3). Only the selected text is saved to the file. Second, you can turn on the text capture mode before or during free forward scrolling. All text received after text capture is turned on is saved to the file. In both methods, captured text appends to existing text in the file.

Selected Text

1. Use the arrow keys and the text selection keys to select the text you want to save.

2. Press F3. Telcom appends the selected text to the capture to file named in the Options command.

All Incoming Text

1. While free forward scrolling, press F3. Telcom appends all incoming text to the capture to file named in the Options command.

2. Press F3 again to stop saving the text to the file. You can stop and start the save as many times as you wish.

Capturing Text in More Than One File

If the text capture file reaches its maximum size before you capture all incoming text, Telcom displays an error message and returns to the Command mode. The message line shows:

Output file too large

Perform these steps to continue capturing the incoming information:

1. At the Session command menu, press ☐O☐ for the Options command. The Options command fields appear.

2. Type a new filename at the capture to field, and press ☐ENTER☐.

   Telcom closes (saves) the current text capture file and opens the new file. Remaining incoming text goes into the new file.

3. Press ☐C☐ for Connect to return to the Terminal mode.

Disconnect

Use the Disconnect command to terminate the communications connection, or "disconnect." Note that communication is **not** disconnected until either you use this command or the computer has been left idle for the amount of time specified in the disconnect after field of the Options command.

At the Session command menu, press ☐D☐ for Disconnect. The screen shows:

Enter Y to confirm

Press ☐Y☐ to disconnect or ☐N☐ to continue.

Modify

Use the Modify command to change the Telcom communication settings. The values in the settings field of the phonebook file appear for each listed name. You can modify the settings for each name, and/or for the default field. The settings you use as the default will also be used when you use Telcom without specifying a phonebook file.

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1. At the Session command menu, press ⬛M for the Modify command. The screen shows:

```
MODIFY  name: █                    baud rate  300         stop bits (1)2
        word length: 6 7(8)        parity  Even Odd(None)Ignore
        xon/xoff (Yes)No           duplex  Half(Full)      terminal (Yes)No
        add to EOL (None)CR LF     strip linefeeds (Yes)No  filter chars (Yes)No
```

2. Type new responses for the fields, as needed. Press ⬛TAB to move between the fields. Type values for the name and baud rate fields, and press the space bar to move between the menu-type responses in the other fields. Details of the command fields are presented at the end of this section.

3. Press ⬛ENTER to carry out the Modify command after all the command field entries are correct. The settings are ready to use in a phonebook file.

Name

The name field refers to the names entered in the phonebook file named in the Options command. Press an arrow key to display all the names in the file. The first name in the file appears in the field. Press ⬛→ to scroll through the file, placing subsequent names in the field. To modify the default settings, leave this field blank.

Baud Rate

The baud rate field determines the speed of data transmission. The built-in modem transmits at 300 baud. Change this setting to reflect the correct transmission speed if you are connecting with another modem. Match the baud rate setting of the host computer. Valid baud rates are: 110, 300, 600, 1200, 2400, 4800, 9600, and 19200.

Stop Bits

The stop bits field determines how many stop bits are transmitted with each character (byte). Choose 1 or 2. The proposed response is 1, which is common for most computers. Match the stop bit setting of the host computer.

Word Length

The word length field determines how many bytes are transmitted in one group, or "word." Choose 6, 7, or 8. The proposed response is 8, which is common for most computers. Match the word length setting of the host computer. (The word length must be 8 if you are using XMODEM protocol.)

Parity

The parity field is used to determine if the host computer receives each character correctly. Choose even, odd, none, or ignore. The proposed response is none, which is common for most computers. Match the parity setting of the host computer. (The parity must be none if you are using XMODEM protocol.)

Xon/xoff

The xon/xoff field controls the "flow" of incoming text. If you leave the Terminal mode while data coming in, the remainder of the incoming data is lost unless this field is on (Yes). Some computers do not support this feature. Choose No if xon/xoff is not supported by the host.

Duplex

The duplex field determines whether or not the characters you input from the keyboard appear on the Tandy 600 screen. If the host computer echoes your input, choose full-duplex to prevent the characters from appearing twice. If the host does not echo, half-duplex displays the characters.

Terminal

The terminal field interprets specific escape sequences in specific ways. The Tandy 600 supports these VT52R escape sequences:

ESC A	Cursor up.
ESC B	Cursor down.
ESC C	Cursor right.
ESC D	Cursor left.
ESC E	Clear display.
ESC H	Cursor home.
ESC $P_{cy}P_{cx}$	Direct cursor addressing.
	cy = character line number
	cx = character column number

Choose yes or no. The proposed response is yes, which is common for most computers. Match the terminal setting of the host computer.

Add to EOL

The add to EOL field corrects files you are receiving incorrectly. Choose none, carriage return (CR), or linefeed (LF). The proposed response is none. Choose LF, for example, if lines are written on top of one another. Choose CR to add a carriage return to the end of each line if incoming data lines step across the screen.

```
| line ends here             |
|                 line ends  |
| here                       |
```

Strip Linefeeds

The strip linefeeds field removes, or "strips," extra blank lines that sometimes appear in files transferred without protocol. Choose yes if an extra blank line appears between each text line.

Filter Characters

The filter characters field determines whether or not incoming control characters are filtered out. Choose yes to ignore control characters.

Options

Use the Options command to set some global values for Telcom that reduce the repetition often encountered during communications.

1. At the Session command menu, press ☐ for the Options command. The screen shows:

```
OPTIONS capture to: SESSION.TXT            phonebook:
        dialing prefix:             area code:              call retries: 0
        dialing type:(Tone)Pulse    speed:(Slow)Fast        wait for tone: 2
        review text lines: 30       disconnect after: 10
```

2. Type new responses for the fields, as needed. Press TAB to move between the fields. Press the space bar to move between the menu-type responses in the dialing type and speed fields. Type new values for the other fields. Details of the command fields are presented at the end of this section.

3. Press ENTER to carry out the Options command after all the command field entries are correct. The options go into effect each time you use Telcom.

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Capture To

The capture to field defines the file to which Telcom sends any captured text (after you press ⌈F3⌋). The last filename entered is the proposed response. SESSION.TXT is the default response. Type a new filename to change the proposed response.

Phonebook

The phonebook field defines the data base (File application) file to use as the phonebook. The last filename entered is used if you do not enter a new filename. Type a new filename to change the proposed response.

Dialing Prefix

The dialing prefix field specifies a prefix for Telcom to dial before it dials the number. Type up to 15 characters for the prefix. Type a plus symbol (+) to insert a 1-second pause in the dialing.

Area Code

The area code field specifies the local area code or exchange. If the first few digits of the number in the phonebook file match this number, they are not dialed. (For example, if you use a private telephone in which the exchange is dropped when calling another number in the system, you can use this field to enter that exchange.) Type up to 5 digits.

Call Retries

The call retries field specifies the number of times that Telcom redials a number if it is not answered or is busy. 0 is the proposed response. Type a number from 0 to 15.

Dialing Type

The dialing type field specifies tone or pulse dialing. Tone is the proposed response. Press the space bar to choose pulse.

Speed

The dialing speed field specifies whether the phone dials slow or fast. This depends on the telephone connection. Slow is the proposed response. Press the space bar to choose fast.

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Wait for Tone

The wait for tone field determines how long Telcom will wait for a dial tone before it begins dialing. 5 seconds is the proposed response. Type a number from 1 to 15 to change the proposed response.

Review Text Lines

The review text lines field determines how many lines can be reviewed when you pause free forward scrolling.

Disconnect Time

The disconnect time field determines how long the Tandy 600 can remain idle in the Telcom mode before communications are automatically disconnected. Type a number from 1-99. Type 0 to prevent Telcom from ever automatically terminating a connection.

Run

Use the Run command to run a script file you have created.

1. At the Session command menu, press [R] for the Run command. The screen shows:

   RUN script: ∎

2. The last script file entered is the proposed response. Type the name of a script file to change the proposed response.

3. Press [ENTER] to run the script. The script executes, entering Terminal mode if a Connect command was entered.

4. Upon completion of your Terminal session, press [S] at the Script menu to return to the Session command menu and the Command mode.

Script

Use the Script command to go to the Script mode. You prepare preset communications, or "auto-logon" files in the Script mode. Auto-logon files are especially useful for repetitious communication connections.

An auto-logon script contains specific information that the host requests of you every time you log on. You type the logon information only once, and store it as a script. Then, you simply run the script.

1. At the Session command menu, press ⎡S⎦ for the Script command. The screen shows:

   SCRIPT name: ■

2. The last script file entered is the proposed response. Type the name of a script file to change the proposed response.

3. Press ⎡ENTER⎦ to open the script file. A blank script file screen appears. The Script command menu replaces the Session command menu.

4. Choose the appropriate commands for the script phrases.

   When you choose a command, its command fields appear on the screen. Leave the proposed responses in the fields or change them as needed. After the command field entries are correct, press ⎡ENTER⎦ to place the phrase in the script. Note that whenever you enter a Connect phrase, a Modify phrase is automatically entered.

   Each phrase contains the command's current field values. Type ^? to enter a question mark and ^M to enter a carriage return in a respond to or respond with field. When you run the script, the appropriate action is taken for each command phrase.

   You can insert a script command phrase anywhere within an existing script by highlighting the next phrase, then choosing the command and pressing ⎡ENTER⎦. The new phrase is inserted in front of the highlighted one. Delete a phrase by highlighting it and pressing ⎡SHIFT⎦⎡BKSP⎦ (⎡DELETE⎦).

5. When the script file is complete, press ⎡S⎦ to return to the Session command menu and the Command mode. You can now run the script file you created.

Transfer

Use the Transfer command to send files to or receive files from the host computer.

1. Press ⎡T⎦ at the Sessions command menu. The Transfer subcommands appear.

   TRANSFER: receive Send

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2. Receive is the proposed response. Press the space bar to move to Send if you want to send a file.

3. Press ENTER. The Transfer Receive or Transfer Send command fields appear.

TRANSFER RECEIVE to: ■   protocol:(None)Xmodem   timeout: 10

or

TRANSFER SEND from: ■   protocol:(None)Xmodem

4. Type the name of the file in which to store the incoming information (RECEIVE to) or the name of the file you want to send (SEND from).

5. Press TAB to move to the protocol field. This field ensures complete transmission of data. As a rule, you should choose XMODEM unless the host computer does not support it. The word length must be 8 and the parity must be none to use XMODEM protocol. Choose None when you are transferring a file created with the Print command.

6. (Transfer Receive command only.) Press TAB to move to the timeout field. If you choose none for the protocol command, Telcom stops receiving the incoming information after the number of minutes entered in this field elapses. The proposed response is 10 minutes.

7. Press ENTER to carry out the Transfer Receive or Transfer Send command.

Receiving Text in More Than One File

If the file in which you are receiving text reaches its maximum size before you receive all incoming text, Telcom displays an error message and returns to the Command mode. The message line shows:

Output file too large

Perform these steps to continue receiving the incoming information:

1. At the Session command menu, press T for the Transfer command, then press R for the Receive subcommand again.

2. Type a new filename in the RECEIVE to field, and press ENTER.

Telcom closes (saves) the current file and opens the new one. The remainder of the received file goes into the new file.

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The Telcom Tutorial

The Telcom tutorial gives step-by-step instructions for establishing a communications connection. For these examples, we assume that you have a subscription and an account number with which to access your host. We also assume that you have the two computers properly connected.

To run the Telcom application, place the cursor over TELCOM on the System Manager screen. Choose the Run command, and press ENTER.

Creating a Phonebook and a Listing

Before you use Telcom, you create your phonebook using the File program.

1. Use the arrow keys to place the cursor over and highlight FILE on the System Manager screen.

2. Press ENTER.

3. Press TAB to move to the file field. Type **phonebook** as the filename.

4. Press ENTER. A File screen appears.

First, decide how many columns (fields) you want the phonebook to contain. A phonebook file **must** contain at least 3 fields: name, number, and settings. You can, however, enter more than these 3 fields. They are simply ignored by Telcom. The cursor appears in the first column, next to NEW. Edit is the proposed command menu response.

Formatting the Phonebook File

Now, format the phonebook columns. The default File column width is 10 characters. We will change the name, number, and settings columns to 16, 10, and 8 characters, respectively.

1. Use ↑ to move the cursor to the FORM row of column 1 (NEW). This will be the name column.

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2. Press ⌈E⌋ for the Edit command, and type **aaaaaaaaaaaaaaaa** (16 A's). Press ⌈→⌋. Column 1 is extended to 16 characters, **C1** appears at the top of the column, and a new column appears to the right of it.

   (Note that File remains in the Edit mode. You can also press ⌈ENTER⌋ instead of ⌈→⌋ after you change a format, and File returns to the Command mode.)

3. The next column will contain the phone numbers. Type **(aaa) aaa-aaaa**. The parentheses, space, and dash are "boilerplate" characters; File inserts them in the field without disturbing the field content. Press ⌈→⌋. Column 2 is formatted as indicated, **C2** appears at the top of the column, and a new column appears to the right of it.

4. The next column will contain the communications settings. Type aaaaaaaa. Press ⌈↑⌋. Column 3 is shortened to 8 characters, **C3** appears at the top of the column, and a new column appears to the right of it. The cursor appears at the top of column 3.

Naming the Phonebook Fields

The next step is naming the phonebook fields by entering column headings. You left File in the Edit mode with the cursor at the top of column 3, so start there.

1. Column 3 is the settings column. Type **Settings**, and press ⌈←⌋. The heading appears at the top of column 3, and the cursor moves to column 2.

2. Column 2 is for the phone numbers. Type **Number**, and press ⌈←⌋. The heading appears at the top of column 2, and the cursor moves to column 1.

3. The first column is for the names. Type **Name**, and press ⌈↓⌋ four times. The heading appears at the top of column 1, and the cursor moves to down to the first data row (NEW) of column 1.

Entering the Phonebook Listings

Type the first name and number in your phonebook on the first row (NEW). For this example, type a fictional name and number.

1. Type **Smith, William**, and press ⊏→⊐.

2. Type **8175551212** in the phone number column. Press ⊏ENTER⊐. The number is edited as indicated in the Form field.

3. Leave the settings field blank to use the default values.
   Enter as many phone listings as you like. If you want to practice making a connection, be sure to include one or more valid telephone numbers.

4. Quit File and return to the System Manager by pressing ⊏CTRL⊐ ⊏F10⊐.

Starting Telcom

Position the cursor over TELCOM, and press ⊏ENTER⊐.

The first time you use Telcom, an empty screen appears. The Session command menu appears at the bottom of the screen. Telcom begins in the Command mode.

Specifying the Phonebook File

1. Press ⊏O⊐ for the Options command.

2. Press ⊏TAB⊐ to move to the phonebook field, and type **phonebook** (the name of the file in this example).

3. Press ⊏ENTER⊐ to carry out the Options command and return to the Command mode.

For this example, use the default communications settings. You can now establish a communications connection.

Establishing a Connection

1. Press ⬚C⬚ for the Connect command. Telcom displays the Connect command fields.

    CONNECT to: █   number:
             using modem: (Yes)No

2. Type one of the names from the phonebook file. You can include an asterisk (*) to choose from all matching names. For example, **Smith***
displays a list of all the Smiths listed in the phone book (if the last name was entered first).

    You can also press an arrow key to display a list of names. All names in the phonebook file display. Press ⬚→⬚ to move through the names. As you highlight a name, it also appears in the CONNECT to field.

3. Press ⬚TAB⬚ to move to the number field. The number corresponding to the name in the previous field appears. Change the number or leave it as it is.

4. Press ⬚TAB⬚ to move to the using modem field. Press ⬚Y⬚ to indicate that the connection will be over the telephone line, using a modem.

5. Press ⬚ENTER⬚ to carry out the Connect command. Telcom dials the number.

Press ⬚SHIFT⬚ ⬚F4⬚ for the Voice mode if you want to carry on a normal telephone conversation. Pick up the phone receiver anytime after the number is dialed.

Terminating the Connection

1. Press ⬚D⬚ for the Disconnect command. The screen shows:

    Enter Y to confirm

2. Press ⬚Y⬚ to disconnect.

Note that simply hanging up the phone after a voice communication does **not** disconnect communications. You must use the Disconnect command.

Quitting Telcom

Press CTRL F10 to quit Telcom and return to the System Manager.

To erase the Telcom Session file you created:

1. Highlight the SESSION file (on the .TXT line of the System Manager screen), and press D for the Delete command. The screen shows:

   DELETE file: SESSION.TXT

2. Press ENTER to carry out the Delete command. The file is deleted.

Chapter 6 Multiplan

MULTIPLAN® stores, displays, prints, and performs mathematical operations on numerical data in rows and columns. This "spreadsheet" concept lets you easily and quickly perform complex and/or multiple. Use Multiplan for budgeting, forecasting, statistical analysis, engineering and other repetitive calculations, and many other previously tedious tasks.

Special Multiplan Keys

Function Keys

Multiplan uses the following function keys:

F1	Functions the same as LABEL.
F2	Moves to the next window created with the Window Split command. The cursor moves to the last cell accessed in the window. At the last window, F2 moves to the first window.
F3	Changes relative references you create with the arrow keys to absolute references. Press F3 immediately after you build a formula composed of relative references.
F4	Changes a formula entered in the Edit mode to its resulting value. Press F4 immediately after typing or building the formula. Then press ENTER or an arrow key to move to another cell; the value is inserted in the cell instead of the formula.
F5	Controls the Scrap mode. Replace is the default mode; copied or deleted data replaces the current scrap contents. No scrap indicator appears on the status line for the Replace mode.
	Press F5 once for the Append mode; copied or deleted data is appended to the current scrap contents. Ap appears on the status line.
	Press F5 twice for the No Scrap mode; copied or deleted data is lost. Ns appears on the status line. Press F5 again to return to the Replace scrap mode.
F7 – F10	Function as Selection Keys. Refer to "Selection Keys."
SHIFT F1	Functions the same as SHIFT LABEL.

[SHIFT] [F2]	Moves to the previous window created with the Window Split command. The cursor moves to the last cell accessed in the window. At the first window, [SHIFT] [F2] moves to the last window.
[CTRL] [F1] –[CTRL] [F10]	Function as system function keys. Refer to "System Function Keys" in the Overview.

Editing Keys

Multiplan uses the following editing keys in the Edit mode:

[BKSP]	Moves the cursor back one space (BACKSPACEs), erasing the character it moves over.
[SHIFT] [BKSP] ([DEL])	Deletes the contents of the cell.

Window Scrolling Keys

Multiplan uses the following window scrolling keys in the Command mode:

[←]	Moves the cursor one cell to the left in the current row of the current window.
[→]	Moves the cursor one cell to the right in the current row of the current window.
[↑]	Moves the cursor one cell up in the current column of the current window.
[↓]	Moves the cursor one cell down in the current column of the current window.
[SHIFT] [←]	Scrolls the previous screen of columns into view in the current window.
[SHIFT] [→]	Scrolls the next screen of columns into view in the current window.
[SHIFT] [↑]	Scrolls the previous screen of rows into view in the current window.

`SHIFT` `↓`	Scrolls the next screen of rows into view in the current window.
`CTRL` `←`	Scrolls to the next active cell to the left in the current row or the last active cell in a previous row (the previous active cell).
`CTRL` `→`	Scrolls to the next active cell to the right in the current row or the first active cell in a following row (the next active cell).
`CTRL` `↑`	Scrolls to cell R1C1.
`CTRL` `↓`	Scrolls to the last active cell on the spreadsheet.

Selection Keys

`F7`	In the Edit mode, selects (highlights) the first Word to the Left of the cursor that is not already selected. If the cursor is in the middle of a word, `F7` selects that word.
`F8`	In the Edit mode, selects (highlights) the first Word to the Right of the cursor that is not already selected. If the cursor is on a word, `F8` selects that word.
`F9`	In the Edit mode, selects (highlights) the first Character to the Left of the cursor.
`F10`	In the Edit mode, selects (highlights) the first Character to the Right of the cursor.

Command Keys

Multiplan uses the following command keys:

[ESC]   In the Command mode, cancels the current command and returns to the command menu. Edit is again highlighted as the default command.

[ENTER]   In the Command mode, carries out the current command using default values or values you fill in for the command fields.

Special keys for the command menu are:

[TAB]   Moves to the next command.
or space bar

[SHIFT] [TAB]   Moves to the previous command.
or [BKSP]

Special keys for the command fields are:

[TAB]   Moves to the next command field.

[SHIFT] [TAB]   Moves to the previous command.

space bar   Moves to the next item in a menu-type command field.

[BKSP]   Moves to the previous item in a menu-type command field.

Starting and Quitting Multiplan

Multiplan is the last application name that appears on the System Manager screen. When you first start the Tandy 600 or return to the System Manager screen from another application, the cursor highlights the Word application. Run is the default on the System Manager command menu.

To create a Multiplan file:

1. Use the arrow keys to place the cursor over PLAN, place the selection marker over Run, and press ENTER. The Run command fields appear:

   ```
   RUN application: PLAN                    file:
   ```

2. Press TAB. Type a name for the work file you are creating. If you do not type a filename, Multiplan names your file WORK.

3. Press ENTER. A Multiplan spreadsheet appears.

To run an existing Multiplan file:

1. Use the arrow keys to place the cursor over the name of the Multiplan work file you want to run.

2. Place the command selection marker over Run, and press ENTER. The Multiplan spreadsheet appears. The cursor appears in the same position as when you last accessed the file. Multiplan begins in the Command mode.

Quit the Multiplan application and return to the System Manager by pressing CTRL F10. Quit the Multiplan application and return to the previous application by pressing CTRL F9.

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The Multiplan Screen

When you create a new file or open an existing file, the Multiplan screen, or spreadsheet, appears. The Multiplan command menu, message line, and status line appear at the bottom of the screen. Multiplan begins in the Command mode, with the command selection marker highlighting the Edit command.

```
:31        1              2         3         4         5         6         7
   1  ███████████████████
   2
   3
   4
   5
   6
   7
   8
   9
  10
  11
> Copy Delete ЄDIT Format Jump Insert Lock Move Name Options Print Sort Window
Select option or type command letter
Plan: WORK           R1C1
```

Figure 22. A Blank Multiplan Screen

The Multiplan spreadsheet is a rectangular grid of rows and columns. Row numbers appear down the left side of the spreadsheet. Column numbers appear across the top of the screen.

Each intersection of a row and column is a "cell." You enter, calculate, and manipulate text, formulas, and numbers using cells. The row and column location of a cell is its "cell reference," which identifies the cell. (For example, the cell reference for the cell in Row 1, Column 1 is R1C1.) Highlight a cell with the cursor to select it for editing or other operations.

Multiplan uses a "window" concept. While only 7 columns and 11 rows appear at one time, each spreadsheet can have up to 63 columns and 255 rows. Scroll the remainder of each window's cells into view with the arrow keys. Use the Jump command to move to a specific cell in any one of the spreadsheet windows. Up to 8 windows can be opened, or "split," on a spreadsheet at one time. (Note that the number of columns that appear on a screen vary according to the width you set, the number of windows open, and the window border you choose.)

The Command Area

The command menu, message line, and status line appear at the bottom of the screen. The status line displays the name of the current application (Plan) and file, the cell reference, the contents of the currently selected cell, and various indicators. An example of a Multiplan command area is shown below.

```
> Copy Delete ЗЛ Format Jump Insert Lock Move Name Options Print Sort Window
Select option or type command letter
Plan: TEST          R2C1      R1*0.3
```

In this example, the cursor is on the cell in Row 2, Column 1. The contents of the cell is a formula that multiplies the value in Row 1 of the current column by 30%. No indicators appear on the status line yet.

The formula in cell R2C1 was entered in the Edit mode. When you press [E] to choose the Edit mode, an edit line replaces the command menu. The proposed response for the cell is the current cell contents, for example:

```
EDIT: █████
Enter formula
Plan: TEST          R2C1      R1*0.3
```

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Setting Up a Spreadsheet

Determine the information you want to display and calculate on your spreadsheet. Note the format and length of your headings and numeric data. The column width and format default to 10 characters (including one blank space for column spacing), right justified, with no decimal places.

If a non-integer is entered in a cell that uses the default format, any trailing zeros (after the decimal) are truncated. If a number consisting of more than 9 digits (or 8 digits plus a decimal point or a minus sign) is entered, non-essential digits (after the decimal) are truncated. The number is represented by an exponential (1E+12 for 1,000,000,000,000, for example) if the exponential or general format code was chosen in the Format Cells command. If the number cannot be truncated or represented by an exponential, number symbols (# # # # #) fill the cell.

No setup is needed to use the default column width and format. You can begin entering your spreadsheet data right away. You can, however, tailor the spreadsheet more specifically to your needs with the Format Cells and Format Width commands. Refer to the "Format" section in this chapter for more details.

Adding Data to a Spreadsheet

After you set up your spreadsheet, you are ready to add data to it. Press ⟦E⟧ to choose the Edit mode for data entry. There are three types of data you can add to a cell: numeric data, formulas, and text.

Numeric data can consist of: numbers, minus and plus signs, decimals, and an exponentiation symbol (0 1 2 3 4 5 6 7 8 9 – + . E). Numeric data can be expressed as integers, decimal fractions, or exponential expressions. Add numeric data to a cell by selecting the cell, then typing the data. As you type, the data appears on the edit line. Press ⟦ENTER⟧ to enter the data into the cell, leave the Edit mode, and return to the command mode. Type the data, then press an arrow key to enter the data without leaving the Edit mode.

Formulas are mathematical expressions that perform some operation on one or more numbers. The operands of the formula may be cell references or numbers. The formula operators available are listed in "Multiplan Operations" in this chapter. Enter a formula into a cell by selecting the cell, then typing the formula.

Text is used on a spreadsheet for row and column headings, notes, and so forth. All text must be enclosed by quotes ("). Except for the quotes, enter text as you would enter numeric data. Text that does not fit in a cell is truncated.

Cell References

When you refer to a cell within a formula, the cell reference can be "absolute" or "relative." Absolute cell references are entered directly, relative references are entered with an arrow key.

To enter a formula that uses absolute references:

1. Select the cell in which to enter the formula.

2. Press ⟦E⟧ to choose the Edit command.

3. Type the formula, including cell references. Separate cell references with the appropriate arithmetic operators.

4. Press ENTER to enter the formula in the cell.

If:	R1C2 = 20 R2C2 = 30
Then, for this formula:	R1C2 + R2C2
The result is:	50

To enter a formula that uses relative references:

1. Select the cell in which to enter the formula.

2. Press E to choose the Edit command.

3. Type an equal sign (=).

   The = does not appear in the EDIT command field. = signals Multiplan
   to add the contents of the current cell to the formula you are building.

4. Use the arrow keys to highlight the first cell to use as an operand in the
   formula, then type the operator that describes its relationship to the next
   cell in the formula. The cursor moves back to the original cell.

5. Repeat Step 4 for each operand, until the formula is complete.

6. Press ENTER to enter the formula in the cell and perform the
   calculation.

For this formula: R[-2]C[+1]+R[-1]C
In this spreadsheet:

	1	2
1		20
2	40	30
3		

If Step 1 begins in cell R3C1, Multiplan adds the 20 from R1C1 (up 2 rows, over 1 column) and the 40 from R2C1 (up 1 row, in the same column). The result appears in R3C1.

In the absolute references example, assume the original cell (Step 1) is R3C2. The results of both these calculations are:

	1	2
1		20
2	40	30
3	60	50

R[-2]C[+1]+R[-1]C
(relative
references)

R1C2+R2C2
(absolute
references)

Performing Calculations

Multiplan performs calculations according to cell contents, from left to right and top to bottom. Individual cell values are recalculated each time you enter new numbers and formulas. The largest number that Multiplan can calculate is 9.9999999999999E62; the smallest number is 1E-64. (Positive numbers in scientific notation include a plus symbol after the E when they appear on the screen.)

Using Cell Groups

Formulas can apply to the relationships between single cells or between groups of cells. The simplest cell group is a row or column. Cell references can also describe any combination of rows and columns that form a rectangular area on the spreadsheet. These areas form a range, union, or intersection, as described below:

Ranges

Any single rectangular grouping of cells comprises a range. To describe a range, reference the cells in the upper left and lower right corners of the rectangular area. Separate the two references with a colon (:).

Unions

Two or more ranges comprise a union. To describe a union, reference the cells in the upper left and lower right corners for each range. Separate the two ranges with a comma (,).

Intersections

The area where two ranges overlap (intersect) is an intersection. To describe an intersection, first name the two ranges (using the Name command), then separate the two range names with a blank space.

The areas shaded with the / and \ characters in this example are ranges. The first range (/) is referenced by R1C1: R7C5. The second range (\) is referenced by R4C3: R11C7.

Both shaded areas together comprise a union. The union is referenced by R1C1: R7C5, R4C3: R11C7.

The intersection of the two shaded areas is shown in this example by x characters. The intersection is referenced by *name1 name2*. *Name1* represents the name of the first range (R1C1: R7C5). *Name2* represents the name of the second range (R4C3: R11C7). The names of the two intersecting ranges are separated by a blank space.

Using cell groups is similar to using references to individual cells. For instance, suppose you want to add the values in the two ranges (the union) in the example above. You could type:

SUM (R1C1: R7C5,R4C3: R11C7)

Notice however, that because the two ranges in the union intersect (overlap), the values in the intersection would be counted twice. To correct this problem, subtract the intersection:

SUM (R1C1: R7C5, R4C3: R11C7) – SUM (*name1 name2*)

Note also that, after you name the two ranges, you can use the range names in the first part of the formula to denote the union:

SUM (*name1, name2*) – SUM (*name1 name2*)

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Using Names

You can simplify the spreadsheet even more by naming cells and cell groups. You then refer to the cell or cell group by its name instead of its reference.

Names must begin with a letter (a-z or A-Z). The other characters may consist of letters, numbers (0-9), periods (.), and/or underlines (___). Names can be up to 32 characters long; no spaces are allowed. Also, names cannot look like absolute or relative cell references (for example, R1C1 or R[-1]C[+2]).

Use the Multiplan Name command to define a name. Defined names can be used anywhere on a spreadsheet, the same as a cell reference. An example of names follows:

```
 ##        1              2          3            4
  1                    JANUARY    FEBRUARY      MARCH
  2  Rent             $750.00     $750.00      $750.00
  3  Maintenace       $100.00     $100.00       $75.00
  4  Electricit       $275.00     $245.00      $200.00
  5  Phone             $75.00      $45.00       $40.00
  6  Water             $46.00      $38.00       $26.00
  7
  8  Subtotal:       $1246.00    $1173.00     $1091.00
  9  Building:       $2525.00
 10  Utilities:       $990.00
 11  Total:          ████████
```

In the example above, the "Subtotal" amounts in Row 8 are calculated from the formula: R2 + R3 + R4 + R5 + R6 in cells R8C2, R8C3, and R8C4.

The "Building," "Utilities," and "Total" amounts are calculated using names, as follows:

Spreadsheet Heading	Name Fomula	Spreadsheet Area
Building	SUM(BLDG)	R2C2: R3C4
Utilities	SUM(UTIL)	R4C2: R6C4
Total	SUM(BLDG, UTIL)	R9C2+R10C2
		or R2C2: R6C4
		or R8C2: R8C4

Using Iteration

Circular references, cells that contain formulas that refer to one or more uncalculated cells, are often used in target-seeking analysis, solving simultaneous equations, and performing numerical analysis and other complex tasks. Multiplan does not calculate these formulas using normal calculation. Instead, to build formulas that depend on each other for answers, use iteration.

Circular references can also be accidental. When the iteration field is No, an error message appears after the normal calculation is complete:

Circular references unresolved

If you do not want to use circular references, check the logic of your formulas. You may have to rearrange the spreadsheet or redesign the formulas to break the circle.

When you choose yes at the iteration field in the Options command, Multiplan calculates the spreadsheet over and over until some condition is satisfied. Multiplan uses the results of the previous calculation for each new calculation.

Multiplan first calculates in the normal manner, then checks the iteration field for a Yes response. Multiplan then evaluates the completion test at field (the default is DELTA ( ) < 0.001). If the completion test is FALSE, Multiplan increments the iteration count by one, then begins the first iteration. Iterations continue until the completion test is TRUE.

Values become more precise with each iteration. This is referred to as "convergence." As the model converges, values change less and less between iterations. The default completion ensures that the results are precise to 1/10th of a percent.

During iteration, Multiplan calculates the cells down the columns instead of across the rows, as in normal calculations:

As a general guideline, put all circular references in a single column in order to keep track of the order of evaluation. Also, in some situations, the order of calculation can cause your model to "diverge" instead of converge.

```
# 1        1        2            # 1        1        2
1  R2C1                          1  R2C1
2  -2*R1C1 + 3                   2  (2-R1C1)/2
3                                3
```

The solution to both of these models is R1C1 = 1 R2C1 = 1. The first model, however, will diverge during iteration.

To stop a diverging model, press [SHIFT] [PAUSE] ([BREAK]). If your answers diverge during iteration, reorder the formulas, then begin iteration again.

Limiting Iteration

Multiplan stops iterating when one of three things occurs:

● The amount of change between iterations is less than 0.001 (unless you have set your own completion test).

● The conditions of a completion test you have designed are met.

● You press [SHIFT] [PAUSE] ([BREAK]).

Completion Tests

To keep Multiplan from iterating endlessly when a model diverges, or to change the degree of accuracy (from 0.001), you can set a completion test.

A completion test is a logical expression that returns either TRUE or FALSE. Multiplan checks the expression before beginning each iteration. If the expression is TRUE, iteration stops. If the expression is FALSE, another iteration is performed.

Multiplan uses DELTA ( ) $<$ 0.001 if no other completion test is entered. This expression is FALSE if any cell changes by more than 0.001. It is TRUE when no cell changes by more than 0.001.

You can set up completion tests, using one of these three conditions:

● The built-in ITERCNT operation, which defines the maximum number of iterations.

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- The built-in DELTA operation, which defines the maximum change between calculated values for each iteration.
- A logical expression, which defines a condition that stops iteration when the expression is TRUE.

To set your own completion test, design a logical expression that describes the completion test. Enter the expression in a cell on the spreadsheet, then type the cell reference at the completion test at field. If you do not enter a value, Multiplan uses the default, DELTA ( ) < 0.001.

The ITERCNT Operation

Use the ITERCNT operation to provide initial values for iterating models, create a table of iteration results, and set up a completion test.

Initial Values

Many spreadsheet models require a set initial value, even though the actual values are calculated with a formula during iteration. Use the IF operation to provide both the formula and a set initial value.

> IF (ISNA (ITERCNT ( )), Initial Value, Gross Profit – Bonus)
>
> During the first calculation after a change to the spreadsheet, ITERCNT ( ) produces #N/A. Therefore, ISNA ( ) is TRUE, and Multiplan uses the value from the cell named "Initial Value."
>
> Then, ITERCNT ( ) produces a number, and ISNA ( ) is FALSE. Multiplan then uses the formula (Gross Profit – Bonus) to calculate the value.

Results Tables

Create a table of partial results from an iteration by copying the formula into successive rows.

> IF(ITERCNT()=ROW()-9,Net Profit, RC)
>
> Each row receives the value of Net Profit during a particular iteration and remains unchanged (RC) for all other iterations, before and after.

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Completion Tests

Use ITERCNT to limit the number of iterations. Enter the ITERCNT formula in a cell, and enter the cell reference in the completion test at field of the Options command.

> ITERCNT ( ) = 20 limits the number of iterations to 20. Multiplan stops after the 20th iteration.

The DELTA Operation

Each time Multiplan encounters a DELTA operation, it resets the internal DELTA value to zero. By entering more than one DELTA, you can isolate the maximum change in a particular part of the model.

A DELTA value that applies only to the differences in a pariticular part of the model is called a "local" DELTA. Begin and end that part of the spreadsheet with cells that contain the DELTA operations.

Enter the first DELTA in the cell immediately above the block of cells for which you want a local DELTA value. (Otherwise, you can encounter problems with the order of evaluation.) Then, enter the test DELTA in the cell immediately below the block of cells for which you want a local DELTA value.

IF (1 = 1, " ", DELTA ( ))   DELTA ( ) < n

# 1	1	2	3	4	5
1		DELTA			
2		///////////////////////////			
3		///////////////////////////			
4		///////////////////////////			
5				DELTA	

Multiplan recalculates the block of cells by columns. The model provides local DELTA values only if the columns contain no other circular references.

A better model design is:

First DELTA

# 1	1	2	3	4	5
1		DELTA			
2		///////////////////////////////			
3		//////////////////////////////			
4		///////////////////////////////			
5		——DELTA			

Second DELTA

Note that subsequent evaluations of DELTA normally include changes to the cell with the first DELTA operation. The simple formula, DELTA(), is usually not sufficient to isolate local DELTA values. Instead, enter a formula such as: IF(TRUE(),"",DELTA()). This clears the maximum DELTA, appears blank on the screen, and presents no value for the following DELTA to evaluate.

If you enter the DELTA operation as a completion test and the ITERCNT operation by itself, divergence may occur. DELTA also reads the cell that contains the ITERCNT operation. Because ITERCNT changes by 1 for each iteration, DELTA always returns at least 1 unless you set up the model to return local DELTA values or you eliminate the ITERCNT operation. An ITERCNT formula (ITERCNT( ) > 20, for example) always returns TRUE or FALSE, and does not affect convergence.

Iteration Example

The following model shows how to use iteration to solve a simple circular reference. This model is designed to calculate a bonus that is 10% of net profit.

Gross Profit (GP) = $1.000.00
Net Profit (NP) = Gross Profit - Bonus
Bonus (B) = Net Profit * 10%

Because the formulas for Net Profit and Bonus depend on each other for their solutions, they are circular references.

The Gross Profit is entered in R1C2. The Bonus formula, NP * .10, is entered in R2C2. The Net Profit formula, R1C2 - B, is entered in R3C2. The results of the calculations are:

First Iteration

# 1	1	2
1	Gross Profit	$1,000.00
2	Bonus	$90.00
3	Net Profit	$900.00

Second Iteration

$900.00 * .10	=	$90.00
$1,000.00 – $90.00	=	$910.00

Third Iteration

$910.00 * .10	=	$91.00
$1,000.00 - $91.00	=	$909.00

Fourth Iteration

$909.00 * .10	=	$90.90
$1,000.00 – $90.90	=	$909.10

Fifth Iteration

$909.10 * .10	=	$90.91
$1,000.00 – $90.91	=	$909.09

$90.91 is 10% of $909.09, and $909.09 equals $1,000.00 minus $90.91. The values have become more precise (converged) with each iteration.

Converging values change less and less with each iteration. Multiplan stops iteration when all values on the model change by less than 0.001 (1/10th of a percent). The model is solved.

# 1	1	2
1	Gross Profit	$1,000.00
2	Net Profit	$909.09
3	Bonus	$90.91

If you change the Gross Profit to $1100, Multiplan quickly recalculates the new Bonus as $100 and the Net Profit as $1000.00.

Arithmetic Operations

Multiplan formulas can include the following arithmetic operations: addtion, subtraction, multiplication, division, percentages, and exponentiation. Operators express the relationship between the formula parts, or "operands."

The arithmetic operators you can use in a formula are:

Operator	Operation
+	addition
-	subtraction
*	multiplication
/	division
%	percentage
^	exponentiation

Comparison Operations

Multiplan formulas can also include comparison operations. Comparison operations compare two values and return a logical value of TRUE or FALSE.

Example:	Are 1984 net profits larger than in 1983 ?
Formula:	R2C2 > 3000.00
Assume:	R2C2 = 32000*10%
Result:	TRUE (3200 > 3000)

The comparison operators you can use in a formula are:

Operator	Operation
=	equal to
<	less than
>	greater than
< =	less than or equal to
> =	greater than or equal to
< >	not equal to

Order of Evaluation

Within a formula, mathematical operations are performed from left to right. Parenthetical operations are performed first. When parentheses are nested, the innermost operations are performed first. Otherwise, arithmetic and comparison operations are performed in the following order:

Operator	Operation
$-$	negation (negative number sign)
$*$ and $/$	multiplication and division
%	percentage
^	exponentiation
$+$ and $-$	addition and subtraction
$=$	equal to
$<$	less than
$<\,=$	less than or equal to
$>$	greater than
$>\,=$	greater than or equal to
$<\,>$	not equal to

Built-In Multiplan Operations

In addition to simple arithmetic and comparison operations, Multiplan can perform more complex operations that perform several internal calculations within a formula. The most common algebraic and trigonometric, logical, conversion, statistical, financial, and control operations are built into Multiplan.

Following is a complete list of the complex built-in operations that Multiplan can perform. Operations are entered as part of a formula. Items enclosed by parentheses follow the operation names. Do not type a space before the left parenthesis. Items in parentheses consist of:

N	A number or a formula that yields a number. Only one N is allowed in each operation.
T	Text or a formula that yields text.
L	A logical value; a cell reference, a formula expressing a relation ($=$, $<$, $>$, $<\,=$, $>=$, or $<\,>$), or a function that yields a logical value.

list   A list of up to 5 logical values, separated by
                          commas. The list can contain numbers, cell
                          references, and/or formulas. A list may represent
                          any number of values through references.

ABS(N)

Multiplies *N* by -1 if (and only if) it is a negative number (returns the
absolute value).

Example: ABS (– 2 * 1000)
Result: – 2000 * – 1 = 2000

AND *(list)*

Tests the values in the list. TRUE appears if all values are true.
Otherwise, FALSE appears. #VALUE ! appears if other than logical values
are entered.

Assume: R1C2 = 40 R1C3 = 30

Examples: Results:
AND(R1C2=R1C3)   FALSE
AND(R1C2=R1C3+10) TRUE

ATAN *(N)*

Calculates the arctangent of *N*. The arctangent is the angle whose tangent
is equal to *N*. The arctangent displays in radians; use ATAN *(N)*
*57.29578 to display the angle in degrees.

Example: ROUND ((ATAN(R3C5)*57.29578),0)
Assume: R3C5 = 0.5773501683919
Result: 30 (a 30 degree angle)

AVERAGE *(list)*

Totals the numbers in the list, then divides by the number of items in the
list (averages the values). Separate each item with a comma.

Example: AVERAGE (100, R1C1, 500/5)
Assume: R1C1 = 400
Result: (100 + 400 + 100) / 3 = 200

COLUMN ( )

Returns the number of the column in which the formula containing this
function appears.

Example: 1981 + COLUMN ( ) –4
Result: Placed into column 4, then copied right, this
                   formula produces the following sequence of years:
                   1981, 1982, 1983, and so forth.

COS *(N)*

Calculates the cosine of *N*. The value *N* should be in radians. If *N* is expressed in degrees, use COS (N*.01745329) to compute the cosine.

Example:	COS (R3C5*.01745329)
Assume:	R3C5 = 30 (a 30 degree angle)
Result:	0.8660254

COUNT *(list)*

Returns the count of the number values you list. Multiplan counts cells only if they contain number values.

DELTA ( )

Returns the maximum absolute value of the changes in values from one iteration to the next. #N/A appears if you choose No at the iteration field in the Options command.

Multiplan counts only the values in the cells that it evaluates between two successive DELTA operations.

The DELTA operation displays the #N/A error when ITERCNT ( ) = 1 or when ISNA (ITERCNT ( )) returns TRUE (during the first calculation of a circular model). In these cases, no previous values exist from which to calculate changes.

Use the DELTA operation in a convergence test formula to calculate the results of an interaction. Each time Multiplan encounters a DELTA operation, it resets the internal DELTA value to 0. By entering more than one DELTA function, you can isolate the maximum change in a particular part of the spreadsheet. To create a DELTA that applies only to the differences of a part of the spreadsheet, bracket the cells with cells that contain the DELTA function.

To avoid problems with order of evaluation, enter the first DELTA function in the cell immediately above the block of cells for which you want a local DELTA value. Then, enter the test DELTA formula in the cell immediately below the block of cells to return a local DELTA value.

DOLLAR *(N)*

Converts N to text showing a dollar amount, as in $ of the Format Cells command. Multiplan rounds *N* to 2 decimal places, places a 0 in the units position if $N < 1$, and adds a dollar sign ($) in front of the leftmost digit. If $N < 0$, Multiplan encloses *N* in parentheses.

Examples:	Results:
DOLLAR(2.715)	$2.72
DOLLAR(-1)	($1.00)
DOLLAR(.15)	$0.15

EXP *(N)*

Calculates e (2.7182818..., the base of the natural, or Napierian, logarithm) raised to the power of N. This is the inverse function of LN. Use the exponentiation operator (^) to calculate the powers of other bases.

Examples: Results:
EXP(2.30258)   9.9999491 (10 if the number is rounded)
FIXED(EXP(1),14) 2.71828182

FALSE ( )

Acts as a logical value for testing, to substitute for a more complicated condition.

Example: IF(R1C1,"TRUE","NOT TRUE")
Result: NOT TRUE (if R1C1 contains FALSE())

FIXED *(N, digits)*

Converts N to text that has the fixed-number of decimal *digits* specified, as in Fix of the Format Cells command. *Digits* must be an integer between 0 and 30. If N is negative, Multiplan places a minus sign (–) before the left digit. If *digits* is negative, Multiplan rounds to the left of the decimal point.

Example: FIXED ((3/17)*100, 2) &" percent"
Result: 17.65 percent

IF (*L*, THEN *value*, ELSE *value*)

If the logical *(L)* is true, the THEN *value* appears. Otherwise, the ELSE *value* appears. *Values* can be numeric, text, or logical.

Example: IF (grade = 100,"Perfect Paper !", grade)
Result: Perfect Paper ! (if grade equals 100)
Result: 97 (actual grade if less than 100)

INDEX *(area, subscripts)*

Returns the value of the cell defined by *subscripts* from the rectangular *area*. Include 1 or 2 subscripts. With 1 subscript, the area must be part of one row or column. If the value of the first subscript is 1, the first cell in the row or column is returned, if the value is 2, the second cell is returned, and so forth.

If you include 2 subscripts, separated by commas, the area can be rectangular. The subscripts define the row and column in the area, starting at 1 in each case. If any index exceeds the limits of the area, #N/A appears.

Examples:
If totals is the partial row: 15   20   35

                    Results:
INDEX (totals, 2)   20
INDEX (totals, 1)   15

If table is the rectangular area: 15   20   35
                                    50   75   10

                    Results:
INDEX (table, 1, 3)   35
INDEX (table, 2, 1)   50

INT (*N*)
Returns the largest integer less than or equal to *N*.

Examples: Results:
INT (8.9)   8
INT (–123.123)   –124

ISERROR (*value*)
Returns the logical value TRUE if the *value* is any of the error values:
#N/A, #VALUE!, #REF!, #DIV/0!, #NUM!, #NAME?, #NULL!.
Otherwise, returns FALSE.

Example: IF (ISERROR (ratio), "Check numbers !", " ")
Result: Check numbers ! (if ratio contains an error)

ISNA (*value*)
Returns the logical value TRUE if the *value* is #N/A (not available).
Otherwise, returns FALSE.

Example: IF (ISNA (balance),"0", balance)
Result: displays balance if available, 0 if not

ITERCNT ( )
Returns the current iteration count, starting with 1 for the first iteration.
During the first recalculation after each change to the spreadsheet,
ITERCNT returns the #N/A error value. The ITERCNT operation
provides initial values for iterative models, creates a table of iterative
results, and provides a completion test.

LEN (*T*)
Returns the number of characters in *T* (text).

Example: If T = fourscore and seven years ago
Result: 29

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LN (N)

Calculates the natural, or Napierian (base e), logarithm of N. $e = 2.7182818...$ N must be positive. #NUM! appears if N equals 0 or is negative.

Examples:	Results:
LN (10)	2.3025851
"log2 = " & FIXED (LN (4)/LN (2), 8)	log2 = 2.0

LOG10 (N)

Calculates the base 10 logarithm of N. N must be positive. #NUM!# appears if N is negative.

Example:	LOG10 (100)
Result:	2

LOOKUP (N, table)

Searches for N in the first row or column or *table*. *Table* is a group of cells on the spreadsheet. Returns the contents of a cell from the last row or column or table.

The dimensions of *table* determine the direction of the search. If *table* is higher than it is wide (has more rows than columns), Multiplan searches in the first column until it finds the cell with the largest value less than or equal to N. The value in the last cell in that row is the result of the operation. If the values in all cells in the first column are less than N, it uses the last row of the *table*. If the values in all cells in the first column are greater than N, #N/A appears.

If *table* is wider than it is high (has more columns than rows), Multiplan searches for N in the first row of the *table*. The value in the last cell in that column is the result of the operation. If the values in all cells in the first row are less than N, the last column of the *table* is used. If the values in all cells in the first row are greater than N, #N/A appears.

Table must be a cell reference to a rectangular area in the active spreadsheet. The result returned can be a number, a text value, or a logical value.

LOOKUP expects that the values in the first row or column are in ascending order. If values are not in ascending order, LOOKUP displays #VALUE! or L#N/A.

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LOOKUP Example

Assume that Column 1 lists base salaries, Column 2 lists minimum tax, and Column 3 lists marginal tax rates as percents:

C1	C2	C3
0	0	0%
2300	0	14%
3400	154	16%
4400	314	18%
6500	692	19%
8500	1072	21%

Also assume that a name, Salary, is defined and contains a value N. The tax on a salary in one of the tables tax brackets can be expressed as:

LOOKUP (Salary, C1 : C2) + (Salary – LOOKUP (Salary, C1))*
    LOOKUP (Salary, C1 : C3)

The first LOOKUP finds the tax on the base amount (using C1 to find a value in C2). The second LOOKUP finds the actual base amount (using C1 to find a value in itself). The third LOOKUP finds the marginal tax rate for the amount of salary that exceeds the base amount (using C1 to find a value in C3).

Example:	Salary = 6800
Result:	692 + (6800 – 6500)*19%
	= 749

MAX (*list*)

Returns the largest number value from the list. Returns 0 if there are no number values in the list.

Example:	"Best of "&FIXED (COUNT (scores), 0) &" is "&FIXED (MAX (scores), 2)
Assume:	scores = 95, 80, 73, 74, 89, 95, 98, 97
Result:	Best of 8 is 98

MID (*T, start, count*)

Returns characters from *T*. *Start* specifies the position of the first character of *T*, counted from the left. (The first character is position 1.) *Count* specifies the number of characters to return.

If *count* is 0 or if *start* is greater than the result of *T*, MID returns no characters. *Start* and *count* must be *N* values. If either *start* or *count* are not integers, MID truncates the fractional portion of the numbers.

Examples:	MID ("FFFFFDCBAA", INT (grade/10), 1)
Assume:	grade = 95 80 73 74 89 95 98 97
Results:	A B C C B A A A

Note that each result is calculated individually in this example.

MIN *(list)*

Returns the smallest number value from the list.

Example:	"Lowest of "&FIXED (COUNT (times), 0) & " is " &FIXED (MIN (times), 0)
Assume:	scores = 95, 80, 73, 74, 89, 95, 98, 97
Result:	Lowest of 8 is 73

MOD *(dividend, divisor)*

Returns the remainder of *dividend* divided by *divisor*. The result has the same sign as *divisor*. Both the dividend and the divisor must be *N* values. If the divisor is 0, a #DIV/0! error appears.

Examples:	Results:
MOD (3, 2)	1
MOD (-3, 2)	1
MOD (-3, -2)	-1
MOD (3, -2)	-1

NA ( )

Returns the #N/A (not available) special value. Use this value to mark data points not yet defined.

| Example: | By assigning NA ( ) to an interest rate, all values that depend on the interest rate change to #N/A. |

NOT *(L)*

Returns the opposite of the logical value *L* (FALSE if the argument is true; TRUE if the argument is false).

| Example: | NOT (TRUE ( )) is equivalent to FALSE ( ). |

NPV *(rate, list)*

Net Present Value (NPV) calculates the amount of money required now to produce a specified cash flow in the future, given some interest rate.

The formula used is:

$$\sum_{i=1}^{n} \frac{list_i}{(1 + rate)^i}$$

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Rate is an interest rate, expressed as a decimal fraction (0.11 for 11%, for example). It must be an *N* value. The first value in the list is income required at the end of the first period; the second, income required at the end of the second period, and so forth.

Example
You are given the opportunity to lease a parking lot for five years for an $80,000 one time payment. The lot currently generates $15,000 net operating income annually. Based on research and profit studies, you expect the income to increase 30% annually.

Enter $15,000 in cell R1C1. Enter RC[−1]*1.3 in cell R1C2, then copy it right to the next 3 cells. Name the area "Flow." Now, you can figure the net present value of the cash flow.

If your opportunity rate is 15%, then NPV (15%, Flow) gives you a net present value of $82,287.98. Because this is greater than the cost of the lease, you conclude that it is a worthwhile investment.

OR (*list*)
Returns the logical value TRUE if any value in the list is true. Otherwise, returns FALSE. If the list contains anything but logical values, a #VALUE! error appears.

Example:	IF (OR (grade > 80, final >= 150),"good work"," ")
Results:	good work (if conditions are met)

PI ( )
Returns the value 3.1415928535898, an approximation of the mathematical constant pi (π).

Example:	COS (PI ( ))
Result:	−1

REPT (*T, count*)
Returns a text value consisting of *count* repetitions of *T*. If *count* is 0 or negative, #VALUE!# appears. Otherwise, the length of the result is the length of *T* multiplied by *count*.

This function can create bar graphs, or repeating patterns (such as printer's rules) to separate areas of the spreadsheet. *T* is usually a single character, but it can be any number of characters. *Count* must be an *N* value, which the operation truncates to an integer.

Example:	REPT ("+", RnC1/10) is entered in Cells R2C2, R3C2, and R4C2 (n refers to the current row number).
Result:		

# 1	1	2
1		
2	74	+++++++
3	86	++++++++
4	64	++++++

ROUND (N, *digits*)

Returns a value rounded to the number of decimal places specified by *digits*, if *digits* is greater than 0.

Example:	ROUND (3.14167,3)
Result:	3.142

If *digits* is 0, it rounds the result to an integer. If *digits* is negative, rounding is carried into the integer, to the nearest 10, 100, and so forth.

Examples:	Results:
ROUND (994, –1)	990
ROUND (994, –2)	1000

ROW ( )

Returns the number of the row where the formula containing this operation appears.

SIGN (N)

Returns a number representing the algebraic sign of N. If the argument is positive, 1 is returned. If the argument is negative, –1 is returned. If the argument is equal to 0, 0 is returned.

Examples:	Results:
SIGN (–10)	–1
SIGN (0)	0
SIGN (3)	1
SIGN (–7)*–7	7 (the absolute value)

SIN (N)

Calculates the sine of N, an angle in radians. Use SIN ((N)*.01745329) if the angle is in degrees.

Example:	ROUND (SIN(R2C4*.01745329), 1)
Assume:	R2C4 = 30 (a 30 degree angle)
Result:	0.5

SQRT (N)

Returns the square root of the argument. N must be positive. If N is negative, it returns a #NUM!# error value.

Examples:	Result:
SQRT (64)	8
SQRT (8*8 + 6*6)	10

STDEV (*list*)

Calculates the sample standard deviation (sd) of n number of values, x (the values in the list), according to the formula:

$$\sigma = sd = \sqrt{\frac{\sum\limits_{i=1}^{n}\left(X - \frac{\sum\limits_{i=1}^{n} X}{n}\right)^2}{n-1}}$$

$$\sigma = sd = \sqrt{\frac{\sum\limits_{i=1}^{n} X^2 - \frac{\left(\sum\limits_{i=1}^{n} X\right)^2}{n}}{n-1}}$$

Example:	STDEV(scores)
Assume:	scores = 95, 80, 73, 74, 89, 95, 98, 97
Result:	10.4

SUM (*list*)

Returns the sum of the values in the list.

Example:	(1 + rate)*SUM (charges)
Assume:	rate = 1.5% (a monthly interest rate)
	charges = $150
Result:	152 (the total charges plus interest for the month)

TAN (N)

Calculates the tangent of N, an angle in radians. Use TAN ((N)*.01745329) if N is expressed in degrees.

Example:	TAN ((R4C3)*.01745329)
Assume:	R4C3 = 30 (a 30 degree angle)
Result:	0.5773502

TRUE ( )

Returns the logical value true.

Example:	Assume:	Result:
IF (R1C1,"YES","NO")	R1C1 = TRUE ( )	YES
		NO

VALUE (T)

Returns *T*, represented as text. *T* must be the text form of a number, similar to those produced by the formats used in the Format Cell command. It can contain a leading dollar sign, a leading minus sign, or scientific notation.

If *T* does not describe a number (includes letters or 2 decimal points, for example), a #VALUE! error appears.

Example: VALUE (MID (date, 3, 2))
Assume: date = 6/14/85
Result: 14

Error Values

When a Multiplan function, operation, or reference is used incorrectly, an error value appears in the cell(s). All error values are preceded with a . Error values "propagate," meaning that an error in one cell causes errors in all cells that refer to it. Therefore, if several error values appear, you must trace the problem back to the source of the error.

The error values and their causes are:

Error	Cause
#DIV/0!	Division by 0 was attempted.
#NAME?	A reference was made to an undefined label.
#N/A	The value is not available. This can also be a special value created with the NA() operation, which is propagated by arithmetic.
#NULL!	An intersection of disjointed areas was specified.
#NUM!	An arithmetic operation was used incorrectly, or an overflow occurred (a number was entered or calculated that was too small or large).
#REF!	A relative reference reached outside the spreadsheet, or a reference was made to a deleted area.
#VALUE!	Text was used where a number is needed, a number was used where text is needed, or references were used where a value is needed.

The Multiplan Commands

Multiplan defaults to the command mode. Use the 13 Multiplan commands to create and control the spreadsheet files. Choose the Edit command to go into the Edit mode and begin entering cell data. You can enter data in more than one cell by copying the contents of a single cell (a number, formula, or text) to one or more cells. You can also move an entire row or column to a different place on the spreadsheet. All references to the moved row or column are updated to reflect its new location.

Copy

Use the Copy command to duplicate, or "copy," a value in a cell or group of cells. You can copy across a row (Right), down a column, or from one area of cells to another. When you copy to a cell, the new value replaces the current one unless the cell is locked. You cannot copy to a locked cell.

The Copy command consists of a menu containing the Right, Down, and From subcommands.

Copy Right

1. Press `C` for the Copy command. The screen shows:

   COPY: ⬛RIGHT Down From

2. Press `ENTER` to use the proposed response, Right. The Copy Right command fields appear:

   COPY RIGHT number of cells: starting at:

3. Type the number of cells into which you want the contents of the copied cell(s) placed. The copy begins at one position and continues across the spreadsheet.

4. Press `TAB` to move to the next field. Type the reference for the cell or group of cells. The proposed response is the currently highlighted cell. You can use the arrow keys to select a different cell. As you move the cursor, the cell references appear in the command field.

   If you want to reference a group of cells, press `:` in the starting at field. A colon is placed after the current cell reference. Then, type the bottom reference for the range or move the cursor to another cell to select it. As you move the cursor, the cell references appear in the command field.

5. Press ENTER to carry out the Copy Right command.

Copy Down

1. Press C for the Copy command. The screen shows:

    COPY: █████ Down From

2. Press D for the Down subcommand. The Copy Down command fields appear:

    COPY DOWN number of cells: starting at:

3. Type the number of cells into which you want the contents of the copied cell(s) placed. The copy begins at one position and continues down the spreadsheet.

4. Press TAB to move to the next field. Type the reference for the cell or group of cells. The proposed response is the currently highlighted cell. You can use the arrow keys to select a different cell. As you move the cursor, the cell references appear in the command field.

    If you want to reference a group of cells, press ☐ in the starting at field. A colon is placed after the current cell reference. Then, type the bottom reference for the range or move the cursor to another cell to select it. As you move the cursor, the cell references appear in the command field.

5. Press ENTER to carry out the Copy Down command.

Copy From

1. Press C for the Copy command. The screen shows:

    COPY: █████ Down From

2. Press F for the From subcommand. The Copy From command fields appear:

    COPY FROM cells: to cells:

3. Type the reference for the cell or group of cells you want to copy. The proposed response is the currently highlighted cell. You can use the arrow keys to select a different cell. As you move the cursor, the cell references appear in the command field.

    If you want to reference a group of cells, press ☐ in the starting at field. A colon is placed after the current cell reference. Then, type the bottom reference for the range or move the cursor to another cell to select it. As you move the cursor, the cell references appear in the command field.

4. Press ⌷TAB⌷ to move to the next field. Type the reference for the cell or the cell or group of cells to which you want to copy. The proposed response is the currently highlighted cell. You can use the arrow keys to select a different cell. As you move the cursor, the cell references appear in the command field.

If you want to reference a group of cells, press ⌷:⌷ in the starting at field. A colon is placed after the current cell reference. Then, type the bottom reference for the range or move the cursor to another cell to select it. As you move the cursor, the cell references appear in the command field.

5. Press ⌷ENTER⌷ to carry out the Copy From command.

>   *Note:* Use the Copy From command to place data into, or retrieve data from, the scrap when transferring data between Multiplan and other application programs. Refer to Appendix C for more information.

Delete

Use the Delete command to remove, or "delete," parts of spreadsheets you no longer need or to reduce the size of your spreadsheet. The Delete command removes entire rows or columns from the spreadsheet, not merely the cell contents. The remaining rows or columns are renumbered, and all cell references are changed to reflect the deletion.

Important Note:

Multiplan does not ask for confirmation before deleting rows or columns. The contents of deleted rows or columns are lost **completely** unless the Replace or Append scrap mode is chosen. We recommend that you use the Move command to move rows or columns.

Deleting Rows

1. Press ⌷D⌷ for the Delete command. The screen shows:

   DELETE: ▓▓▓ Column

2. Press ⌷ENTER⌷ to use the proposed response, Row. The Delete Row command fields appear:

   DELETE ROW # of rows: starting at:

3. Type the number of rows you want to delete.

4. Press ⎡TAB⎤ to move to the next field. Type the reference for the first row you want to delete.

5. Press ⎡ENTER⎤ to carry out the Delete Row command.

Deleting Columns

1. Press ⎡D⎤ for the Delete command. The screen shows:

   DELETE: ▓▓▓ Column

2. Press ⎡C⎤ for the Column subcommand. The Delete Column command fields appear:

   DELETE COLUMN # of columns: starting at:

3. Type the number of columns you want to delete.

4. Press ⎡TAB⎤ to move to the next field. Type the reference for the first column you want to delete.

5. Press ⎡ENTER⎤ to carry out the Delete Column command.

Edit

Use the Edit command to put Multiplan in the Edit mode for entering numbers, formulas, or text into a cell. Also use the Edit mode to delete the contents of a cell. Edit is the proposed response on the Multiplan command menu.

Entering Numbers

1. Use the arrow keys to move the cursor to the cell in which you want to enter a number.

2. Press ⎡E⎤ for the Edit command.

3. Type the number (integer, decimal fraction, or exponential expression) you want to enter in the cell. Numbers include these characters only:

$$1\ 2\ 3\ 4\ 5\ 6\ 7\ 8\ 9\ 0\ -\ +\ .\ E$$

The letter E (uppercase or lowercase) identifies the numbers that follow it as the exponent of the number.

> An exponential is entered in the following form:
> *mantissa* E *exponent*, and is interpreted as *mantissa* times 10 to the power of *exponent*.
>
> 14000 becomes: 1.4E4   displayed as: 1.4E + 04

4. Press ENTER to enter the number and return to the Command mode. Press an arrow key to enter the number (without leaving the Edit mode) and move to the next cell.

Entering Text

1. Use the arrow keys to move the cursor to the cell in which you want to enter text.

2. Press E for the Edit command.

3. Type the text you want to enter into the cell, enclosing it in quotation marks.

4. Press ENTER to enter the text and return to the Command mode. Press an arrow key to enter the text (without leaving the Edit mode) and move to the next cell.

If the text does not fit in the column, only the part that fits appears on the screen. Press E for the Edit command to display the entire contents of the cell. Use the Format Width command to widen the column in order to display all the text.

Entering Formulas

Using Absolute Cell References

1. Move the cursor to the cell in which you want to enter the formula.

2. Press E for the Edit command.

3. Type the formula, including each cell reference. Separate cell references with the appropriate arithmetic operators.

4. Press ENTER to enter the formula and return to the Command mode. Press an arrow key to enter the formula (without leaving the Edit mode) and move to the next cell. The result of the formula appears in the cell; the formula appears on the status line.

Using Relative Cell References

1. Move the cursor to the cell in which you want to enter a formula.

2. Press E for the Edit command.

3. Press =. The equal sign does not appear in the EDIT command field; it signifies to Multiplan that you are building a formula that uses relative cell references.

4. Use the arrow keys to move to the first cell in the formula.

5. Type the operator that describes its relationship to the next cell in the formula.

6. Repeat Steps 4 and 5 until you complete the formula.

7. Press ENTER to enter the formula and return to the Command mode. (Note that you **cannot** press an arrow key to enter a formula that contains relative references.) The result of the formula appears in the cell in which you entered the formula; the formula appears on the status line.

Deleting the Contents of a Cell

1. Move the cursor to the cell you want to delete.

2. Press E for the Edit command.

3. Press SHIFT BKSP (DELETE).

4. Press ENTER to carry out the Edit command and delete the contents of the cell. (Note that you **cannot** press an arrow key to delete the cell contents and remain in the Edit mode.)

Delete the contents of several adjoining cells by deleting one cell, then copying it to the others. The blank contents are copied.

Note: SHIFT BKSP deletes only the contents of a cell, not the cell itself. Use the Delete command to delete an entire row or column of cells. The Delete command removes the actual cells from the spreadsheet.

Format

Use the Format command to determine the appearance, or "format," of cell contents. The Format command consists of a menu containing the Cells, Default, Options, and Width subcommands.

If you do not want any special formats and you want all text aligned to the left of the cells and all numbers to the right of the cells, you can skip the Format command and use Multiplan's proposed responses.

For formats more specific for your data, use the Format command. The values you set are saved only for the current spreadsheet.

Formatting Cells

Use the Format Cells command to change the alignment, format, or number of decimal places for a single cell or a group of cells. (Use Format Default Cells to change the values for the entire spreadsheet.)

1. Press ⎡F⎤ for the Format command.

2. Press ⎡ENTER⎤ to choose the Cells subcommand. The screen shows:

```
FORMAT cells:   ■                    alignment:(Def)Ctr Gen Left Right -
          format code:(Def)Cont Exp Fix Gen Int $ * % -    # of decimals:  0
Enter reference to cell or group of cells
```

3. Type the reference for the cell or group of cells you want to format. The proposed response is the currently highlighted cell. You can use the arrow keys to select a different cell. As you move the cursor, the cell references appear in the cells command field.

   If you want to reference a group of cells, press ⎡:⎤ in the cells field. A colon is placed after the current cell reference. Then, type the bottom reference for the range or move the cursor to another cell to select it. As you move the cursor, the cell references appear in the command field.

4. Press ⎡TAB⎤ to move to the alignment field. Press the space bar to choose one of the alignments:

Def	Uses the Default alignment for the cell(s).
Ctr	Centers text and numbers within the cell(s).
Gen	General. Aligns text to the left and numbers to the right.

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Left	Aligns text and numbers at the Left of the cell(s).
Right	Aligns text and numbers at the Right of the cell(s).
–	Retains the current cell alignments. Use this code when changing format but not alignment.

5. Press TAB to move to the format code field. Press the space bar to choose one of the formats:

Def	Uses the Default format for the cell(s).
Cont	Continues text into the next column if it does not fit in one cell. The cell in the next column must be empty and also formatted as Continuous.
Exp	Scientific notation (Exponential). Displays numbers as an integer or decimal number (mantissa) times 10 to the power of a positive or negative integer (exponent). (For example, 1.85E2 or 1.85E+02, represents 185.)

Note that the number of decimal places you choose (in the next field) should be one less than the number of significant digits in your numbers (or greater).

> If 0 decimal places are chosen, 14000 appears as 1E+04 in scientific notation. Because decimal places do not appear when you choose 0, the number (which should appear as 1.4E+04) appears to be inaccurate. The correct number will always appear in the EDIT field of the Edit command.

Fix	Rounds numbers to the number of decimal places you specify in the # of decimals field.
Gen	General. Displays numbers as precisely as possible in the available cell width.
Int	Rounds fractional numbers into Integers.

$	Dollar. Displays numbers with a dollar sign ($) and 2 decimal places. Encloses negative numbers in parentheses.
*	Bar Graph. Displays asterisks instead of the number entered (8 asterisks for the number 8, and so forth). Fractional numbers are rounded into integers. You can use this format to create a simple horizontal bar chart. Also, Left alignment is usually used with this format.
%	Percent. Displays numbers as percentages. (1 = 100%, .5 = 50%, and so forth.)
–	Retains the current cell formats. Use this code when changing alignment but not format.

6. Press ENTER to carry out the Format Cells command.

Setting the Default Format

Use the Format Default command to set default cell formats and column widths for the entire spreadsheet. You can change any individual cell formats or column widths that are different from the default using the Format Cells and Format Width commands. Until you set a format with Format Default Cells, all cells use the General format.

1. Press F for the Format command.

2. Press D for the Default subcommand. The screen shows the Format Default command menu:

    FORMAT DEFAULT: **CELLS** Width

3. Press the space bar to choose the Cells or Width subcommand. Refer to "Formatting Cells" and "Formatting Column Widths" for specific instructions for these subcommands.

Setting the Format Options

Use the Format Options command to display commas in values or display the formula used to arrive at a value instead of the value itself.

1. Press F for the Format command.

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2. Press ⌷O⌷ for the Options subcommand. The screen shows:

```
FORMAT OPTIONS commas: Yes NO    formulas: Yes(No)
```

3. The default for the commas field is No. Press the space bar if you want commas to appear in numbers equal to and greater than 1000.

4. Press ⌷TAB⌷ to move to the formulas field. The default is No. Press the space bar if you want to display the formulas used to arrive at the values on the spreadsheet instead of the values themselves.

Formatting Column Widths

Use the Format Width command to change column widths on the spreadsheet. (Use Format Default Width to change the column widths for the entire spreadsheet.)

1. Press ⌷F⌷ for the Format command.

2. Press ⌷W⌷ for the Width subcommand. The screen shows:

```
FORMAT WIDTH in chars or d(efault): d    column: 1    through: 1
```

3. The proposed response is d, which uses the default width specified in the Format Default Width command or the last width entered in the field. Use the proposed response or type the number of characters for the width(s) of the column(s).

4. Press ⌷TAB⌷ to move to the column field. The proposed response is the current column (the one in which a cell is highlighted). Use the proposed response, or type the reference for the first column to format.

5. Press ⌷TAB⌷ to move to the through field. The proposed response is the current column (the one in which a cell is highlighted). Use the proposed response, or type the reference for the last column to format.

6. Press ⌷ENTER⌷ to carry out the Format Width command.

Insert

Use the Insert command to insert new, blank rows or columns any place in the worksheet. Insert adjusts all references that the new row or column affects. You cannot insert rows or columns if they cause the existing spreadsheet to extend beyond the 255-column and 63-row limit.

Note: Rows in the scrap must be inserted in rows and columns in columns. If a mixed insertion is attempted, only the first cell in the row or column is added to the new column or row.

Inserting a Row

1. Press ☐ for the Insert command.

2. Press ENTER for the Row subcommand (the proposed response). The screen shows:

   ```
   INSERT ROW # of rows: 1█          before row:
   ```

3. The default number of rows to insert is 1. The proposed response is the default or the last number entered. Use the proposed response, or type a new number.

4. Press TAB to move to the next field. The proposed response is the current row (the one in which a cell is highlighted). Use the proposed response, or type the reference for the row in front of which the new row(s) are to be inserted.

5. Press ENTER to carry out the Insert Row command.

Inserting a Column

1. Press ☐ for the Insert command.

2. Press C for the Column subcommand. The screen shows:

   ```
   INSERT COLUMN # of columns: 1█   before column:
   ```

3. The default number of columns to insert is 1. The proposed response is the default or the last number entered. Use the proposed response, or type a new number.

4. Press TAB to move to the next field. The proposed response is the current column (the one in which a cell is highlighted). Use the proposed response, or type the reference for the column in front of which the new column(s) are to be inserted.

5. Press ENTER to carry out the Insert Column command.

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Jump

Use the Jump command to quickly move to cell, name, or window. The Jump command consists of a command menu containing the Name, Row-col, and Window subcommands.

Jumping to a Cell or Name

1. Press ⌨J for the Jump command.

2. Press ⌨N for the Name subcommand. The screen shows:

   ```
   JUMP name: ■      column:
   ```

3. Type the reference for the cell or group of cells or the name to which you want to jump.

4. Press ⌨ENTER to carry out the Jump Name command.

Jumping to a Specific Cell

1. Press ⌨J for the Jump command.

2. Press ⌨R for the Row-col subcommand. The screen shows:

   ```
   JUMP row:
   ```

3. The current row is the proposed response. Type the row number of the cell to which you want to jump.

4. Press ⌨TAB to move to the column field. The current column is the proposed response. Type the column number of the cell to which you want to jump.

5. Press ⌨ENTER to carry out the Jump Row-col command.

Jumping to a Window

1. Press ⌨J for the Jump command.

2. Press ⌨W for the Window subcommand. The screen shows:

   ```
   JUMP WINDOW window number:      row:      column:
   ```

3. The current window is the proposed response. Use the proposed response, or type the number of the window to which you want to jump.

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4. Press ⎡TAB⎤ to move to the row field. The current row is the proposed response. Type the row number of the cell to which you want to jump.

5. Press ⎡TAB⎤ to move to the column field. The current column is the proposed response. Type the column number of the cell to which you want to jump.

6. Press ⎡ENTER⎤ to carry out the Jump Window command.

Lock

Use the Lock command to protect, or "lock," a cell, group of cells, or a formula so that it cannot be edited. The Lock command consists of a command menu containing the Cells and Formulas subcommands.

Note: Locking a cell, group, or formula does **not** protect it from deletion if you use the Delete Row or Delete Column commands.

Locking and Unlocking Cells

1. Press ⎡L⎤ for the Lock command.

2. Press ⎡C⎤ for the Cells subcommand. The screen shows:

   LOCK cells·   status: Locked(Unlocked)

3. Type the reference for the cell or group of cells you want to lock. The proposed response is the currently highlighted cell. You can use the arrow keys to select a different cell. As you move the cursor, the cell references appear in the cells command field.

   If you want to reference a group of cells, press⎡:⎤ in the cells field. A colon is placed after the current cell reference. Then, type the bottom reference for the range, or move the cursor to another cell to select it. As you move the cursor, the cell references appear in the command field.

4. Press ⎡TAB⎤ to move to the status command field. The status of the currently highlighted cell is the proposed response. Press the space bar to change the status.

5. Press ⎡ENTER⎤ to carry out the Locked command.

Locking and Unlocking Formulas

1. Press ⌑L⌑ for the Lock command.

2. Press ⌑F⌑ for the Formulas subcommand. The screen shows:

    ```
    LOCK FORMULAS:
    Enter Y to confirm ■
    ```

3. Press ⌑Y⌑ to lock all the formulas on the spreadsheet.

4. Press ⌑ENTER⌑ to carry out the Lock Formulas command.
   Use the Lock Cell command to unlock formulas. Each cell that contains a formula must be included in the cells field.

Move

Use the Move command to transfer, or "move," 1 or more rows or columns of cells from one area of a spreadsheet to another. The rows or columns affected by the move are renumbered, and all cell references are changed to reflect the move.

Moving Rows

1. Press ⌑M⌑ for the Move command. The screen shows:

    ```
    MOVE:  ROW Column
    ```

2. Press ⌑ENTER⌑ to use the proposed response, **Row.** The Move Row command fields appear:

    ```
    MOVE ROW from row: 1■     to before row: 1     # of rows: 1
    ```

3. The current row (the one in which a cell is highlighted) is the proposed response. Use the proposed row, or type the first row you want to move.

4. Press ⌑TAB⌑ to move to the next field. Type the row before which you want to move the row(s).

5. Press ⌑TAB⌑ to move to the next field. Type the number of rows you want to move.

6. Press ⌑ENTER⌑ to carry out the Move Row command. The row(s) are removed from their current location and inserted at the new location.

Moving Columns

1. Press [M] for the Move command. The screen shows:

    MOVE: **Row** Column

2. Press [C] for the Column subcommand. The Move Column command fields appear:

    MOVE COLUMN from column: **1** to left of column: 1   # of columns: 1

3. The current column (the one in which a cell is highlighted) is the proposed response. Use the proposed column, or type the first column you want to move.

4. Press [TAB] to move to the next field. Type the column before which you want to move the column(s).

5. Press [TAB] to move to the next field. Type the number of columns you want to move.

6. Press [ENTER] to carry out the Move Column command. The column(s) are removed from their current location and inserted at the new location.

Name

Use the Name command to define your own names for certain cells or cell groups. You can then refer to the cell names instead of the cell references.

1. Press [N] for the Name command. The Name command fields appear:

    NAME define name: **■**   to refer to: R1C1

2. Type the name you want to define, up to 32 characters. Refer to the rules for names in "Using Names" in the "Performing Calculations" section of this chapter.

3. Press [TAB] to move to the next field. Type an absolute cell reference. The reference can be to a single cell or a range, union, or intersection of cells.

4. Press [ENTER] to carry out the Name command.

After you define a name, you can use it anywhere you would use a cell reference.

Options

Use the Options command to set up the way Multiplan calculates the spreadsheet. You can set Multiplan to recalculate all cells each time you change a cell (the default) or to recalculate only when you press ‾F4‾. You can also choose iteration and set default completion test criteria.

1. Press 〔O〕 for the Options command. The screen shows:

```
OPTIONS recalc: ▓▓▓ No
            iteration: Yes(No)    completion test at:
Select option
```

2. The proposed response for the recalc field is **Yes**. Use the proposed response, or press the space bar to choose **No**.

   If you choose **No**, each new cell is calculated (based on the last values of the other cells) when it is entered, but other cells that may be affected are not recalculated. The entire spreadsheet is recalculated **only** when you press 〔F4〕 or when you quit Multiplan and return to the System Manager screen by pressing 〔SHIFT〕〔F10〕.

3. Press 〔TAB〕 to move to the iteration field. The proposed response is **No**. Use the proposed response, or press the space bar to choose **Yes**.

   If you choose **Yes**, Multiplan calculates values from formulas that form a circle of references. Refer to "Using Iteration" for more information.

4. Press 〔TAB〕 to move to the completion test at field. Enter a value in this field only if you chose **Yes** at the previous field. Refer to "Using Iteration" for more information.

5. Press 〔ENTER〕 to carry out the Options command.

Print

Use the Print command to print a spreadsheet or portion of a spreadsheet. Choose the device (printer or file), area, and style in which it is printed.

Before you print a spreadsheet, be sure your printer is connected properly, turned on, and ready to print.

Multiplan uses the printing format from System Manager's Set Printer command. It prints as many columns across the page as will fit. Any columns left over print on a second page.

1. Press ⬚P⬚ for the Print command. The screen shows:

```
PRINT to: PRN:          area: R1:255
         row-col numbers: Yes(No) style:(Text)Sylk
```

2. The proposed response is PRN: (to the printer). Use the proposed response, or type a filename to save the spreadsheet to a file. (Do not use an existing filename.)

3. Press ⬚TAB⬚ to move to the area field. The proposed response is R1 : 255 (the entire spreadsheet). Use the proposed response or type a reference to a cell or group of cells. Multiplan prints as many rows as fall within the specified range.

4. Press ⬚TAB⬚ to move to the next field. The proposed response is No. Use the proposed response, or press the space bar to choose Yes and print the spreadsheet's row and column numbers.

5. Press ⬚TAB⬚ to move to the next field. The proposed response is Text.

   Choose Text to print a spreadsheet normally, on the printer, or when printing it to a file. Choose Sylk (SYmbolic LinK format) to print the spreadsheet to a file in order to transfer it to a desktop computer application.

6. Press ⬚ENTER⬚ to carry out the Print command.

Note: To print formulas instead of values on the worksheet, choose Yes in the formulas field of the Format Options command before you print.

Sort

Use the Sort command to rearrange the rows of a worksheet in alphabetical or numerical, ascending or descending order. Multiplan sorts the data in this order:

* Numbers
* Text
* Logical and error values
* Blank cells

Text is sorted according to the standard ASCII character sequence. In ascending order, this is:

!@ # $ % ^ ( ) * + , − . / 0 − 9 : ; < = > ? @ A−Z [ ] ^ ' a-z { }

Equal values are left in their original order.

To sort multiple columns of information, sort 1 column at a time, from least to most significant.

1. Press [S] for the Sort command. The screen shows:

   SORT by column: 1█   between rows: 1   and: 255   order: ()><

2. The proposed response is 1. Use the proposed response or type the number of the column on which to base the sort. The contents of the column entered determine the sorted order of the rows.

3. Press [TAB] to move to the next field. The proposed response is 1. Use the proposed response, or type the number of the first row you want to sort.

4. Press [TAB] to move to the next field. The proposed response is 254. Use the proposed response, or type the number of the last row you want to sort.

5. Press [TAB] to move to the order field. The proposed response is > (ascending). Use the proposed response, or press the space bar to choose descending order.

6. Press [ENTER] to carry out the Sort command.

Window

Use the Window command to open up to 8 windows to view different parts of a spreadsheet at once on the screen. The Window command consists of a command menu containing the Split, Border, Close, and Link subcommands.

Opening Windows (Split)

Use the Window Split command to open horizontal and/or vertical windows. You can scroll these windows and, by pressing [F2] or [SHIFT] [F2], move the marker to the next window or previous window, respectively.

Horizontal and Vertical Windows

1. Press [W] for the Window command.

2. Press ⌐S⌐ for the Split command to open a new window. The screen shows:

```
WINDOW SPLIT: Horizontal Vertical Titles
```

3. Horizontal is the proposed response. Use the proposed response, or press the space bar to choose Vertical. The Window Split Vertical or Horizontal command fields appear:

```
WINDOW SPLIT VERTICAL at column:      linked: Yes(No)
WINDOW SPLIT HORIZONTAL at row:       linked: Yes(No)
```

4. The proposed column or row number is the current one. Use the proposed response, or type the column or row number at which to open a new window.

5. Press ⌐TAB⌐ to move to the linked field. The proposed response is **No**. Press the space bar to choose **Yes** if you want to scroll this window with the one from which it is split.

6. Press ⌐ENTER⌐ to carry out the Window Split command.

Title Windows

Use the Titles subcommand to split one window into 4 windows that are suitable for displaying the spreadsheet row and column headings, or "titles."

1. Press ⌐W⌐ for the Window command.

2. Press ⌐S⌐ for the Split command to open a new window. The screen shows:

```
WINDOW SPLIT: Horizontal Vertical Titles
```

3. Press the space bar twice to choose **Titles**. The Window Split Titles command fields appear:

```
WINDOW SPLIT TITLES # of rows:      # of columns:
```

4. Type the number of rows (beginning with Row 1) you want to include in the title window.

5. Press ⌐TAB⌐ to move to the next field. Type the number of columns (beginning with Column 1) you want to include in the title window.

6. Press ⌐ENTER⌐ to carry out the Window Split command.

Note: The Window Link command cannot remove links between windows created with the Window Split Titles command.

Changing Window Borders

Use the Window Border command to add or remove a border for a specific window.

1. Press ⬚W⬚ for the Window command.

2. Press ⬚B⬚ for the Border command. The screen shows:

   WINDOW change border in window number:

   The current window is the proposed response. Use the proposed response, or type the number of the window whose border you want to change.

4. Press ⬚ENTER⬚ to carry out the Window Border command.

If the window already has a border, Border removes it; if not, Border adds one. Because the border takes up 1 character position on each side of the window, the screen shows less information. If you split a window that has borders, the 2 resulting windows also have borders.

Closing Windows

Use the Window Close command to close windows opened with the Window Split command.

1. Press ⬚W⬚ for the Window command.

2. Press ⬚C⬚ for the Close command. The screen shows:

   WINDOW CLOSE window number:

3. The current window is the proposed response. Use the proposed response, or type the number of the window you want to close.

4. Press ⬚ENTER⬚ to carry out the Window Close command.

Multiplan increases the size of the remaining windows to fill the rest of the screen and renumbers the windows. If there is only 1 window open, Multiplan ignores the Window Close command. Closing windows does not affect the contents of cells.

Linking Windows

Use the Window Link command to link two windows so that they scroll together.

1. Press ⬚W⬚ for the Window command.

2. Press ⬚L⬚ for the Link command. The screen shows:

   WINDOW LINK window number: with window number: linked: Yes(No)

3. The proposed response is the current window. Use the proposed response, or type the number of the first window you want to link.

4. Press ⬚TAB⬚ to move to the next field. The proposed response is the next window. Use the proposed response, or type the number of the window you want to link to the first one.

5. Press ⬚TAB⬚ to move to the linked field. The current state of the two windows is the proposed response. Press the space bar to change the proposed response.

6. Press ⬚ENTER⬚ to carry out the Window Link command.

The Multiplan Tutorial

The Multiplan tutorial takes you through the step-by-step process of building a simple profit statement. These exercises give you practical experience with most of the basic features of Multiplan.

Creating a Multiplan Work File

1. At the System Manager screen, place the cursor over PLAN, and press ⌐R⌐ for the Run command. The screen shows:

   RUN application: ▓PLAN▓   file:

2. Press ⌐TAB⌐ to move the marker to the file field.

3. Type **profit**, and press ⌐ENTER⌐. A blank spreadsheet appears. The Multiplan command menu, message line, and status line appear at the bottom of the screen.

```
▓▓                1          2        3        4        5        6        7
 1 ▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓
 2
 3
 4
 5
 6
 7
 8
 9
10
11

> Copy Delete ▓Edit▓ Format Jump Insert Lock Move Name Options Print Sort Window
Copyright (1982, 1983, 1984, 1985) Microsoft Corp.
Plan: PROFIT            R1C1
```

Profit Statement for Month

In a profit statement, different categories of revenue and costs spread over a period of time. When you work out a profit statement on paper, you first write down the names of categories, such as "revenue" and "costs." You do this in a Multiplan spreadsheet by entering text in a cell.

Note: To Multiplan, text is any combination of letters or numbers that you do not calculate. Any text you enter must be enclosed by quotation marks.

Follow the steps below to enter text in your spreadsheet. If you make a mistake while typing, press [BKSP] to backspace over it, and retype. Or, if you've already pressed [ENTER], reselect the cell, and type the correct entry.

Entering Text

Notice that the command marker highlights the Edit command, the one you use most frequently when building a spreadsheet. To enter text:

1. Press [E] to choose the Edit command. The EDIT command field appears.

2. Type "**Revenue**". Revenue appears in R1C1. The quotation marks do not appear in the cell.

3. Press [↓] twice. The marker highlights R3C1.

4. Type "**Overhead**", and press [↓].

5. Type "**Materials**", and press [↓].

6. Type "**Advertising**", and press [↓] twice.

7. Type "**Costs**", and press [↓] twice.

8. Type "**Profit**". Press [ENTER] to return to the command menu.

Your spreadsheet now looks like this:

```
            1         2         3         4         5         6         7
 1 Revenue
 2
 3 Overhead
 4 Materials
 5 Advertisin
 6
 7 Cost
 8
 9 Profit
10
11

> Copy Delete Edit Format Jump Insert Look Move Name Options Print Sort Window
Select option or type command letter
Plan: WORK               R9C1      "Profit"
```

Changing Column Widths

Notice that Column 1 is too narrow to contain the entire Row 5 entry, "Advertising." To display the entire entry, use the Format Default Width command to widen your columns.

1. Press ⎡F⎤, then ⎡D⎤, then ⎡W⎤ to choose the Format Default Width command. The screen shows:

   FORMAT DEFAULT width in chars: 10

   The proposed response in the command field is 10, the default width for all columns on your spreadsheet. Widen the columns on your spreadsheet by 3 characters to avoid crowding the titles in Column 1 with the data you enter in Column 2.

2. Type **13**, and press ⎡ENTER⎤ to carry out the command.

Multiplan changes the width of all columns from 10 to 13 characters.

```
         1            2           3          4          5
    1 Revenue
    2
    3 Overhead
    4 Materials
    5 Advertising
    6
    7 Cost
    8
    9 Profit
   10
   11

2 Copy Delete Edit Format Jump Insert Lock Move Name Options Print Sort Window
Select option or type command letter
Plan: WORK                    R9C1        "Profit"
```

Increasing the width of the columns scrolls Columns 6 and 7 off the screen.

Entering Revenue and Costs

The amounts for each category go in Column 2.

1. Use the arrow keys to move to cell R1C2.

2. Press ⎡E⎤ for the Edit command.

3. Type **24680**. Your entry appears in R1C2.

4. Press ⎡↓⎤ twice. The marker highlights R3C2.

5. Type **5600**, and press ⎡↓⎤.

6. Type **5700**, and press ⎡↓⎤.

7. Type **4850**, and press ⎡↓⎤.

Changing the Format of the Cell Contents

Multiplan normally aligns text to the left and numbers to the right within a cell, unless you change the alignment with the Format command. To display all numbers on the spreadsheet in dollars:

1. Press F, then D, then C to choose the Format Default Cells command. The screen shows:

```
FORMAT DEFAULT CELLS alignment: Ctr Gen Left Right
             format code: Cont Exp Fix(Gen)Int $ * %    # of decimals: 0
```

2. Press TAB to move the cursor to the format code field.

3. Press the space bar until the cursor highlights $, and press ENTER.

Multiplan redraws the screen to display all numbers with a dollar sign and 2 decimal places. From now on, all numbers you enter appear in the dollar format.

To display all numbers on the spreadsheet with commas:

1. Press F, then O to choose the Format Options command. The screen shows:

```
FORMAT OPTIONS commas: Yes No     formulas: Yes(No)
```

2. At the commas field, press the space bar to choose Yes, and press ENTER.

Multiplan redraws the screen to display all numbers with commas.

Your spreadsheet now looks like this:

```
              1            2          3          4          5
 1 Revenue        $24,680.00
 2
 3 Overhead       $5,600.00
 4 Materials      $5,700.00
 5 Advertising    $4,850.00
 6
 7 Costs
 8
 9 Profit
10
11
```

Format commands affect only numbers, not cells containing text. But, if you later replace the text with a number, Multiplan displays the number in the format you choose.

Adding Up Costs

Calculate amounts for Costs or Profit from the amounts for Revenue and the 3 categories, which are already on the spreadsheet.

To build a formula, first select the cell to receive the result of the calculation, then select the other cells to be included in the formula. Each time you select a cell, you type an arithmetic operator, such as to indicate that you are performing an operation on the cell.

Add the following formula to your spreadsheet:

Costs = Overhead + Materials + Advertising

1. Press E for the Edit command.

2. Select the cell at R7C2.

3. Press =.

   The equal sign does not appear in the EDIT field. If you don't press the equal sign, Multiplan selects another cell the next time you press an arrow key instead of adding the contents of that cell to the formula you are building.

   As you select cells in the formula and type your entries, the formula develops in the EDIT field.

4. Select the cell containing $5,600.00, and type +. The cursor returns to R7C2, and the plus sign is added to the formula.

5. Select the cell containing $5,700.00, and type +. The cursor returns to R7C2, and the plus sign is added to the formula.

6. Select the cell containing $4,850.00.

   The formula now looks like this:

   R[-4]C+R[-3]C+R[-2]C

7. Press ENTER.

The formula represents the last 3 cells you selected. A plus sign separates each cell, numbers in brackets indicate the position of a cell relative to the position of R7C2.

After Multiplan calculates the formula, your spreadsheet looks like this:

```
▓▒            1              2           3         4         5
  1  Revenue        $24,680.00
  2
  3  Overhead       $5,600.00
  4  Materials      $5,700.00
  5  Advertising    $4,850.00
  6
  7  Costs          ███$16,150.00█
  8
  9  Profit
 10
 11
```

Revenue Minus Costs Equals Profit

To use names instead of cell references, use the Name command:

1. Press ⌷N⌷ for the Name command. The screen shows:

   NAME define name: ▉   to refer to: R7C2

2. Type **Revenue** in the first command field.

3. Press ⌷TAB⌷ to move to the second field. Type **R1** (for Row 1). Your entry replaces the proposed response of R7C2, the current cell.

4. Press ⌷ENTER⌷. Multiplan now regards the name, **Revenue**, as equivalent to Row 1.

When you name a cell or group of cells, the name must be 1 word. Don't type spaces or hyphens. Multiplan cannot use these in a name. Also, because you don't actually enter names on the spreadsheet itself, do not enclose them in quotation marks.

To assign the name *Costs* to Row 7:

1. Choose the Name command.

2. Type **Costs** in the first command field.

3. Type **R7** in the second command field.

4. Press ⌷ENTER⌷.

Entering a Formula

The formula for calculating your profit is: Profit = Revenue - Costs.

You can now use the names you've just entered, instead of cell references, to calculate your profit. To write the formula:

1. Select cell R9C2, then press ⌷E⌷ for the Edit command.

2. Type **Revenue-Costs**, and press ⌷ENTER⌷.

Multiplan calculates the amount left over after costs and shows the result in cell R9C2 on the spreadsheet.

```
░▒▓        1              2          3          4          5
   1  Revenue       $24,680.00
   2
   3  Overhead       $5,600.00
   4  Materials      $5,700.00
   5  Advertising    $4,850.00
   6
   7  Costs         $16,150.00
   8
   9  Profit        ▇▇▇$8,530.00▇
  10
  11
```

Extending the Spreadsheet

You can extend the profit statement for any number of months by adding titles and copying work already done.

First, insert a row at the top to label columns for different months:

1. Press ⌷I⌷, then press ⌷R⌷ for the Insert Row command.

2. Use the proposed response (1) in the **# of rows** field by pressing ⌷TAB⌷.

3. Type **1** in the **before row** field, and press ⌷ENTER⌷.

Multiplan inserts a row and then renumbers all the rows. Multiplan also adjusts the names and formulas to get accurate results.

Now add titles for the months:

1. Select R1C2.

2. Press ⎡E⎤ for the Edit command.

3. Type "**January**", and press ⎡→⎤. This enters the text into R1C2 and selects R1C3.

4. Type "**February**", and press ⎡→⎤.

5. Type "**March**", and press ⎡→⎤.

6. Type "**Total**", and press ⎡ENTER⎤.

Your spreadsheet now looks like this:

```
▓▓          1              2            3          4                5
           1            January    February    March            ▓▓▓▓▓
           2 Revenue     $24,680.00                            Total▓▓▓▓▓
           3
           4 Overhead     $5,600.00
           5 Materials    $5,700.00
           6 Advertising  $4,850.00
           7
           8 Costs       $16,150.00
           9
          10 Profit       $8,530.00
          11
```

Aligning the Cells

Notice that all the text on the spreadsheet is aligned on the left edge of the cells; all the numbers are aligned at the right. This is the way Multiplan lines up cell contents unless you specify otherwise with either the Format Cells or Format Default Cells command.

To improve the appearance of the spreadsheet, center the titles in Row 1:

1. Press ⎡F⎤, then ⎡C⎤ to select the Format Cells command.

2. Type **R1** in the cells field, and press ⎡TAB⎤.

3. In the second command field, press the space bar to highlight Ctr.

4. Press ENTER.

```
 ▓▓       1              2            3          4           5
  1               January      February     March      �\blacksquare▓Total▓\blacksquare
  2   Revenue       $24,680.00
  3
  4   Overhead        $5,600.00
  5   Materials       $5,700.00
  6   Advertising     $4,850.00
  7
  8   Costs          $16,150.00
  9
 10   Profit          $8,530.00
 11
```

Profit Statement for a Quarter

Copy the numbers and formulas for January into the February and March columns; afterwards, you can make any necessary changes to the amounts.

To copy the January data into Columns 3 and 4:

1. Place the cursor in R2C2, and press C, then press R to choose the Copy Right command.

2. Type 2 in the number of cells field.

3. Press TAB. Press F10 to move the cursor to the end of the proposed response (R2C2), then type : R10C2 in the starting at field.

   The above entry tells Multiplan to copy the cells in Rows 2 through 10 in Column 2 to the corresponding cells in the 2 columns to the right of Column 2.

4. Press ENTER.

```
 ▓▓       1              2            3            4            5
  1               January      February     March       Total
  2   Revenue    ▓$24,680.00▓   $24,680.00   $24,680.00
  3
  4   Overhead     $5,600.00     $5,600.00    $5,600.00
  5   Materials    $5,700.00     $5,700.00    $5,700.00
  6   Advertising  $4,850.00     $4,850.00    $4,850.00
  7
  8   Costs       $16,150.00    $16,150.00   $16,150.00
  9
 10   Profit       $8,530.00     $8,530.00    $8,530.00
 11
```

The profit statement now shows the same figures for each month. To change the figures in Columns 3 and 4, select individual cells, and type new entries in them:

1. Select cell R2C3.

2. Press ⎡E⎤ for the Edit command.

3. Type **27540**, and press ⎡↓⎤. Multiplan puts $27,540.00 in cell R2C3 and recalculates Profit for February.

4. Change the other entries for February and March.

   Select each cell in turn, and type the new number. After you enter all the numbers, press ⎡ENTER⎤.

   R4C3 to **5200**

   R5C3 to **6590**

   R6C3 to **4030**

   R2C4 to **29760**

   R4C4 to **6100**

   R5C4 to **7480**

   R6C4 to **4390**

Each time you select the next cell, Multiplan recalculates costs and profit.

```
 ▓▌       1              2              3              4              5
  1                   January       February        March         Total
  2  Revenue        $24,680.00    $27,540.00    $29,760.00
  3
  4  Overhead        $5,600.00     $5,200.00     $6,100.00
  5  Materials       $5,700.00     $6,590.00     $7,480.00
  6  Advertising     $4,850.00     $4,030.00    ███████████
  7
  8  Costs          $16,150.00    $15,820.00    $17,970.00
  9
 10  Profit          $8,530.00    $11,720.00    $11,790.00
 11
```

The formula "Revenue-Costs" is now in 3 cells: R10C2, R10C3, and R10C4.

The formula in the January column subtracts January "Costs" from January "Revenue," the one in the February column subtracts February "Costs" from February "Revenue."

Shortcuts to Formulas

You can use the built-in complex operations to enter a formula more complex than you can create with +, −, *, or /. For example, use SUM( ) to calculate the 3-month sum for Revenue:

1. Select the Total cell for Revenue (R2C5).

2. Pres ⌈E⌉ for the Edit command.

3. Type **SUM(**

   Since you want the sum of cells R2C2 through R2C4, enter that range of cells:

4. Select R2C2.

5. Press ⌈:⌉

6. Select cell R2C4.

7. Type) to close the parentheses left open in Step 3. The formula looks like this: SUM(RC[−3]:RC[−1]).

8. Press ⌈ENTER⌉.

The sum of Revenue for January through March appears in the cell.

You can use the same formula to calculate the 3-month sum for Overhead, Materials, Advertising, Costs, and Profit:

1. Press ⌈C⌉, then ⌈D⌉ to choose the Copy Down command.

2. Type **8** in the number of cells field.

3. Accept the proposed response (R2C5) in the starting at field by pressing ⌈ENTER⌉.

Multiplan fills the other cells with the formula from R2C5 and calculates the results for each formula.

	1	2 January	3 February	4 March	5 Total
2	Revenue	$24,680.00	$27,540.00	$29,760.00	$81,980.00
3					$0.00
4	Overhead	$5,600.00	$5,200.00	$6,100.00	$16,900.00
5	Materials	$5,700.00	$6,590.00	$7,480.00	$19,770.00
6	Advertising	$4,850.00	$4,030.00	$4,390.00	$13,270.00
7					$0.00
8	Costs	$16,150.00	$15,820.00	$17,970.00	$49,940.00
9					$0.00
10	Profit	$8,530.00	$11,720.00	$11,790.00	$32,040.00

Seeing It on Paper

If you have a printer connected to your computer, you can print a paper copy of your spreadsheet. (If you don't have a printer, skip this section.) Be sure the printer is connected and ready to print. Your printer uses the page size and margin specifications set in the System Manager Options command.

To print your spreadsheet:

1. Press ⎡P⎤ for the Print command.

2. Accept the proposed response (PRN:) in the file field by pressing ⎡TAB⎤.

3. Accept the proposed response (R1: 255) in the area field by pressing ⎡ENTER⎤. Your printer begins to print the spreadsheet.

Quitting Multiplan and Saving the Spreadsheet

When you quit Multiplan, it automatically saves your spreadsheet under the name you gave it when you started Multiplan.

Press ⎡CTRL⎤ ⎡F10⎤ to save your spreadsheet.

Multiplan saves the "Profit" spreadsheet as a RAM file and returns you to the System Manager screen. Each time you change your spreadsheet, Multiplan replaces the old version with the new one.

Deleting the Spreadsheet from Memory

Once you save the "Profit" spreadsheet, it appears to the right of PLAN on the System Manager screen. To delete the spreadsheet:

1. Place the cursor over PROFIT on the System Manager screen.

2. Press ⎡D⎤ for the Delete command.

3. Profit is the proposed response. Press ⎡ENTER⎤ to carry out the Delete command.

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Appendix A
Format and Diskcopy Instructions

Preparing Diskettes with Format

Before you store files on diskette, you first prepare the diskette(s) by formatting them. Use the FORMAT program to format data diskettes.

1. With the computer turned on and the System Manager screen showing, insert a diskette that includes the FORMAT program into the built-in disk drive on the right side of the computer.

2. Press ☐O☐ for the Options command to initialize the disk drive. Type A as the drive name, and press ☐ENTER☐. The System Manager screen is redrawn to include only the system applications and the files on the diskette.

3. Use the arrow keys to place the cursor over FORMAT, and press ☐C☐ for the Copy command. The screen shows:

```
COPY file: ᗒᔉᗝᖇᓰᗩᖶᘙᓴ        to:
```

Press ☐ENTER☐ to copy the file to RAM.

(If you do not enter a to filename in the COPY command, COPY defaults to the same filename, without the drive name – a RAM file.)

4. Press ☐F3☐ to redraw the System Manager screen. The FORMAT program appears on the screen.

5. Place the cursor over FORMAT, and press [R] for the Run command. The FORMAT fields appear.

FORMAT drive: ▓▓   configuration string:

6. Press the Disk Release Button on the right side of the computer, and remove the diskette. Now, insert a blank diskette into the disk drive.

7. A is the default FORMAT drive. Press [TAB] to move to the next field. Leave this field blank, or type v to verify the format.

8. Press [ENTER]. The screen shows:

    About to format disk type Y to confirm

9. Press [Y] to format the diskette in Drive A or [N] to return to the FORMAT fields for editing.

After you format the diskette in Drive A, the FORMAT fields appear again.

Perform Steps 6-9 for as many diskettes as you want to format. After all diskettes are formatted, press [CTRL] [F10] to return to the System Manager screen.

Duplicating Diskettes with Diskcopy

Make a copy of the master diskette included with your Tandy 600, then store it in a safe place. **Never** use the master diskette for data storage or routine operations. Also make backups of your data diskettes periodically to guard against data loss.

Before you begin the diskcopy, remove as many unnecessary files from RAM as possible. This frees all available memory for the diskcopy. The more memory available (up to 64K), the faster the diskcopy.

Recommendations

● Do not use the Diskcopy utility when running on battery power; first plug the unit into an AC power source.

● Use Diskcopy only to copy a diskette that contains a large number of files or a diskette that contains a very large file (too large to fit into RAM). Most other copies are more efficiently performed using the Copy command.

1. First, format a blank diskette ("destination" diskette) for the diskcopy. Follow the instructions in "Preparing a Diskette with Format."

2. With the computer turned on and the System Manager screen showing, insert a diskette that includes the DISKCOPY program into the built-in disk drive on the right side of the computer.

3. Press ☐O☐ for the Options command to initialize the disk drive. Type **A** as the drive name, and press ☐ENTER☐. The System Manager screen is redrawn to include only the system files (applications) and the files on the diskette.

4. Use the arrow keys to place the cursor over DISKCOPY, and press ☐C☐ for the Copy command. The screen shows:

   COPY file: **DISKCOPY.SYS**   to:

   Press ☐ENTER☐ to copy the file to RAM.

   (If you do not enter a to filename in the COPY command, COPY defaults to the same filename, without the drive name – a RAM file.)

5. Press ☐F3☐ to redraw the System Manager screen. The DISKCOPY program appears on the screen.

6. Now, place the cursor over DISKCOPY, and press ☐R☐ for the Run command. The DISKCOPY fields appear.

   DISKCOPY from drive: **A**   to drive: A

7. A is the default for both diskcopy drives. Press ☐ENTER☐ to begin the diskcopy. The screen shows:

   Insert source disk and type Y to continue

8. Press the Disk Release Button on the right side of the computer, and remove the diskette containing DISKCOPY.

9. Now, insert the diskette you want to copy (the "source" diskette), and press ☐Y☐. The screen shows:

   Reading...

10. After a few moments, the screen shows:

    Insert destination disk and type Y to continue

Remove the source diskette, and insert the destination diskette (formatted in Step 1) into the disk drive. Press ⟨Y⟩ to continue. (⟨SHIFT⟩ ⟨PAUSE⟩ cancels, or "breaks," the diskcopy.) The screen shows:

Writing...

After each write, the screen shows the number of sectors left to copy.

11. After a few moments, the screen shows:

Insert source disk and type Y to continue

Remove the destination diskette, and insert the source diskette again. Press ⟨Y⟩ to continue.

Repeat Steps 10 and 11 until Copy Complete appears. The Diskcopy fields appear again.

Perform Steps 7-11 for as many diskettes as you want to diskcopy. After all diskcopies are complete, press ⟨CTRL⟩ ⟨F10⟩ to return to the System Manager screen.

Appendix B
Device Drivers

Device drivers set up your computer for use with peripheral devices, such as: printers, disk drives, and so forth. The PRN, CON, and COM devices are already set up for you. Type a filename or one of these device driver names in the to command fields of the PRINT and LIST commands. PRN prints or lists to the printer. CON lists to the console (computer screen). COM lists to the communications, or RS-232 port.

The Tandy 600 line feeds after every line of text. Because of this, the printer driver (PRN) is set up for printers that do **not** add a linefeed at the end of every line. If your printer **does** line feed automatically, you must change PRN to suppress the extra linefeed and avoid double-spaced lines.

To determine whether your printer adds the extra line feed, print a small Word document or other Tandy 600 file. If it prints single-spaced, no changes are needed. If it is double-spaced, you must either change the PRN driver using the INSTALL program that is included on your master diskette or change the setting of the CR function control (DIP) switch to CR = CR (carriage return only, no line feed).

For example, when printing to a DMP-2100P, an extra linefeed appears if you do not change the PRN driver or the DIP switch. To suppress the extra linefeed, perform one of these actions:

A – Change the PRN driver according to the instructions in "Installing the Printer Driver."

B – Turn off the printer, and set the DIP switch 6 to CR = CR by putting it in the ON position (towards the front of the printer). Turn on the printer.

Installing the Printer Driver

Install the PRINTER.DVR file that is included on your master diskette to suppress extra linefeeds in printed data. Steps 1-4 copy the files into RAM, and Steps 5-7 install the new printer driver.

1. With the computer turned on and the System Manager screen showing, insert a diskette that includes the INSTALL.!70 and PRINTER.DVR programs into the built-in disk drive on the right side of the computer.

2. Press ⎣O⎦, type **A**, then press ⎣ENTER⎦ to initialize the disk drive with A as the drive name. (Simply press ⎣F3⎦ if the drive is already initialized.) The System Manager screen is redrawn to include only the system applications and the files on the diskette.

3. Place the cursor over **INSTALL**, and press ⎣C⎦, then ⎣ENTER⎦ to copy the INSTALL.!70 file into RAM.

4. Now, place the cursor over **PRINTER**, and press ⎣C⎦, then ⎣ENTER⎦ to copy the PRINTER.DVR file into RAM.

5. Press ⎣F3⎦ to redraw the System Manager screen. The INSTALL program and PRINTER.DVR file appear on the screen.

6. Place the cursor over **PRINTER**, and press ⎣R⎦ for the Run command. The Run command fields appear:

   ```
   RUN application: ▮                    file: PRINTER.DVR
   ```

7. PRINTER.DVR is the proposed file. Type **INSTALL** as the application name, and press ⎣ENTER⎦. The PRN driver is changed to suppress the extra linefeed, and the System Manager screen appears again.

Returning to the Original Printer Driver

If you change printers to one that does not add linefeeds, you must return to the original printer driver by "uninstalling" PRINTER.DVR in the PRN driver. The INSTALL file must be in RAM.

1. Place the cursor over PRINTER or over **any** unspecified filename (no extension), and press ⬚R⬚ for the Run command. The Run command fields appear, for example:

   RUN application: ■   file: SCRAP

2. Type **INSTALL** as the application name, and press ⬚TAB⬚ to move to the file field.

3. The unspecified file is proposed; type **PRN** as the new filename.

4. Press ⬚ENTER⬚. The original PRN driver, which line feeds at the end of every line, is reinstalled. The System Manager screen appears again.

Appendix C
Transferring Data

Transfer data from one Tandy 600 application to another or between the Tandy 600 and a desktop computer, such as the Tandy 1000, 1200HD, or 2000. Only data "types" compatible to the target application can be transferred. Data types stored by the Tandy 600 applications are:

Multiplan	Numbers, formulas, text
File	Numbers, dates, times, text
Calendar	Dates, times, text
Word	Text

Transferring Data Between Applications

The Tandy 600 uses the Delete or Copy commands along with the Insert command to transfer compatible data to another application.

1. Run the appropriate application, opening the file you want to transfer, the "source" file.

2. Select (highlight) the data you want to transfer.

   Multiplan: Skip to Step 3.

   Before you transfer text from Word to Multiplan, File, or Calendar, first separate each group of text into cells or fields (TAB) or records or rows (SHIFT ENTER).

3. Press F5 to select the appropriate scrap mode (Replace or Append), if necessary.

4. Use the Copy or Delete command to place the data in scrap.

   Multiplan: Type the cell references of the entire area (range) to copy in the Copy From cells field. Type **scrap** in the to cells field. Press ⌈ENTER⌉.

5. Press ⌈CTRL⌉⌈F10⌉ to quit the source program, then run the application and open the file into which you are transferring the data, the "destination" file.

6. Specify the area into which you want to insert the scrap data.

   Word: Place the cursor at the position before which you want to insert the data.

   File and Calendar: Highlight the field(s) into which you want to insert the data.

   Multiplan: Skip to Step 7.

7. Use the Insert command to insert the scrap contents into the highlighted area.

   Multiplan: Type the number of rows or columns and the position of the first row or column to insert in the Insert Row or Insert Column command fields. If the column widths are not large enough to show all the data inserted, use the Format Width command to change them (up to 32 characters).

Printing to Text Files

Transfer compatible data to a desktop computer application by printing the data to a text (source) file, then transferring the text file to the desktop application (output file). For example, Multiplan or Word files can be transferred to Multiplan or Word on the Tandy 1000, Tandy 1200HD, or Tandy 2000. File application files can be transferred to a variety of data base filing programs, such as dBaseII®.

To create a text file in Word, Calendar, File, or Multiplan:

1. Run the appropriate application, opening the file you want to transfer, the "source" file.

2. In the Command mode, press ⌈P⌉ for the Print command.

3. Type a filename, including an extension (such as .TXT), in the Print to command field.

4. Press ENTER.

To create a Telcom text file:

1. Run the Telcom application.

2. Press T for the Transfer command.

3. Press R for the Receive subcommand.

4. Type a filename, including an extension (such as .TXT), in the to command field. (Choose the appropriate protocol and timeout seconds. Refer to the Telcom chapter for more information.)

5. Press ENTER. The file is received as a text file.

We recommend that you use the same extension for all text files to identify them as such.

Maximum File Size

No more than 64K bytes of information can be stored in any one file. When you print data from one ("source") file to another ("output" file), the output file often contains formatting, margins, and so forth, that is not stored in the source file. Therefore, an output file can require more than 64K. The computer stops printing when it reaches the 64K limit, and displays:

Output file too large

If you see this message, delete or move any data in the source file that you do not need, then print it again. You can also print the file in segments to several different files.

The destination file cannot contain less available bytes than the source file, and the source file cannot use more bytes than available in the system. For example, you cannot print a Word document containing 40,000 bytes of information to a text file if the available system memory (storage space) is less than 40,000 bytes.

Merging a Text File into a Word Document

To place the contents of a text file into a Word document:

1. Open the Word document.

2. If necessary, move the cursor to the position in the document where you want to place the merged text file.

3. Press ESC to enter the Command mode, then press M for the Merge command.

4. Type the name of the text file you want to merge at the MERGE from field, and press ENTER. The computer merges data from the text file into the document. Existing text moves down to make room for the merged data.

Notes on Text File Transfers

To transfer data between desktop and Tandy 600 application programs, save files in the appropriate formats. Once you save a file in the proper format, you can transfer it to or from a desktop telecommunications program, a desktop computer, or a disk.

Word

To transfer data from Tandy 600 Word, choose No in the formatted command field of the Print command.

To transfer a text file from desktop Word to Tandy 600 Word, choose No in formatted field of the Transfer Save command of Microsoft Word.

Multiplan

To transfer a spreadsheet from Tandy 600 Multiplan, choose Sylk in the style field of the Print command.

To transfer from desktop Multiplan to Tandy 600 Multiplan, choose Sylk in the mode field of the Transfer Options command in the desktop Multiplan, then save the file with the Transfer Save command.

File

To transfer a data base from Tandy 600 File to a desktop data base filing program, choose Interchange in the style field of the Print command.

Data Transfer: Examples

The following example illustrates the process of transferring data between application programs.

You are responsible for keeping records on the monthly sales figures for your company's sales staff. You also calculate, and report to the payroll department, the amount of each salesperson's monthly commission.

You keep the records on monthly sales figures in a File data base called SALES.

1. Create a SALES data base in the File application.

2. Enter the following records:

```
ID      Salesperson             Sales 11/85  NEW
FORM    AAAAAAAAAAAAAAAAAA      $ ##,###.##  AAAAAAAAAAA
SORT
FIND
1       Baxter, Diane           $  7,360.00
2       Fitzgerald, John        $  9,560.00
3       Hill, Carol             $ 11,850.00
4       Johnson, Lee            $ 10,750.00
5       Lloyd, Stephen          $  8,990.00
6       Peters, Jill            $  9,170.00
7       Rogers, Cheryl          $ 10,560.00
8       Scott, Henry            $ 12,300.00
```

Monthly commissions are 11.5 percent of monthly sales. You could, of course, calculate each commission by hand. However, it would be faster to simply transfer the data in your SALES data base to a Multiplan spreadsheet, where Multiplan can calculate the commissions for you.

You can then transfer the data from your spreadsheet to a Word document containing the memo you write to the payroll department.

Transferring Data from File to Multiplan

The first step is to select the data in the SALES data base that you want to transfer to the Multiplan worksheet, then copy the selected data to the scrap.

1. Press [SHIFT] [F10] to highlight all data records.

2. Set the scrap mode to Replace.

3. In the Command mode, press [C] for the Copy command. The 8 records are copied into the scrap.

You will calculate the commissions on a Multiplan spreadsheet called COMM. Create the spreadsheet, and copy the scrap data to it.

1. Press [CTRL] [F10] to return to the System Manager.

2. Create a COMM spreadsheet in the Multiplan application.

3. Press [C] for the Copy command; then press [F] for the From subcommand.

4. Type **scrap** in the COPY FROM cells field, and press [ENTER].

The data appears on the COMM spreadsheet:

```
 ::#          1            2        3       4       5       6       7
    1    Baxter, Wi     7360
    2    Fitzgerald     9560
    3    Hill, Caro    11850
    4    Johnson, L    10750
    5    Lloyd, Ste     8990
    6    Peters, Ji     9170
    7    Rogers, Ch    10560
    8    Scott, Hen    12300
    9
   10
   11
```

Use the COMM spreadsheet to reformat the data for transferring it to a Word document and to calculate the commission for each salesperson.

Preparing the Data in Multiplan

All cells on a Multiplan spreadsheet are initially 10 characters wide. Because the longest name is 16 characters, increase the width of Column 1 by 7 characters to allow for the longest name plus one blank space between columns. Also, increase the width of Column 2 by 2 characters.

1. Use the arrow keys to move to cell R1C1.

2. Press ⎡F⎤, then ⎡W⎤ for the Format Width command. Type **17** as the width, and press ⎡ENTER⎤. Column 1 is expanded to 17 characters wide.

3. Again, press ⎡F⎤, then ⎡W⎤ for the Format Width command. Type **12** as the width. Press ⎡TAB⎤ to move to the next field, and type **2**. Press ⎡TAB⎤ again, and type **2** again. Press ⎡ENTER⎤. Column 2 is expanded to 12 characters wide. One character space appears between the two columns.

Now, change the format of the cells.

1. Use the arrow keys to move to cell R1C1.

2. Press ⎡F⎤, then ⎡D⎤, then ⎡C⎤ for the Format Default Cells command.

3. Press ⎡TAB⎤ to move to the format code field, and press the space bar twice to choose $, then press ⎡ENTER⎤. All numeric fields now appear in a dollar amount format.

4. Press ⎡F⎤, then ⎡O⎤ for the Format Options command.

5. Press the space bar at the commas field to choose Yes, then press ⎡ENTER⎤.

The spreadsheet now looks like this:

```
 R1                 1                 2             3        4        5        6
  1 Baxter, Diane          $7,360.00
  2 Fitzgerald, John       $9,560.00
  3 Hill, Carol           $11,850.00
  4 Johnson, Lee          $10,750.00
  5 Lloyd, Stephen         $8,990.00
  6 Peters, Jill           $9,170.00
  7 Rogers, Cheryl        $10,560.00
  8 Scott, Henry          $12,300.00
  9
 10
 11
```

Now, you can calculate the commission for each salesperson by entering a formula that multiplies the monthly sales amounts in Column 2 by the 11.5% commission rate somewhere on the spreadsheet.

1. Use the arrow keys to move to R1C3.

2. Press ⌈E⌉ for the Edit command, and type **11.5%***, then press ⌈←⌉.

11.5%∗RC[–1] appears in the **EDIT** field. Multiplan has completed the formula for you by entering the relative reference.

3. Press ⌈ENTER⌉.

The commission for the first salesperson on your spreadsheet appears in R1C3.

It is not necessary to reenter the formula for each dollar amount in Column 2. Instead, copy the formula from R1C3 to the other cells in Column 3:

1. Press ⌈C⌉, then ⌈D⌉ for the Copy Down command.

2. Type **7** as the number of cells, and press ⌈ENTER⌉.

The commission for each salesperson now appears in Column 3:

```
 ▓█▓         1              2         3          4        5         6
  1 Baxter, Diane      $7,360.00  ▓$846.40▓
  2 Fitzgerald, John   $9,560.00  $1,099.40
  3 Hill, Carol       $11,850.00  $1,362.75
  4 Johnson, Lee      $10,750.00  $1,236.25
  5 Lloyd, Stephen     $8,990.00  $1,033.85
  6 Peters, Jill       $9,170.00  $1,054.55
  7 Rogers, Cheryl    $10,560.00  $1,214.40
  8 Scott, Henry      $12,300.00  $1,414.50
  9
 10
 11
```

One small task remains before you transfer the data for the memo to the payroll department from COMM to WORD. In your memo, you need to include only the data from Columns 1 and 3. However, data you copy from Multiplan to the scrap must form a rectangular block of adjoining cells. Therefore, you must reverse the positions of Columns 2 and 3.

1. Press ⌈M⌉, then ⌈C⌉ for the Move Column command.

2. Because the cursor is still in Column 3, it is the proposed response to the first field.

3. Press ⌈TAB⌉ to move to the next field. Type **2**, and press ⌈ENTER⌉ to move Column 3 to the left of Column 2.

The spreadsheet now looks like this:

```
███      1              2              3          4      5      6
   1 Baxter, Diane      $846.40   ███$7,860.00███
   2 Fitzgerald, John   $1,099.40    $9,560.00
   3 Hill, Carol        $1,362.75   $11,850.00
   4 Johnson, Lee       $1,236.25   $10,750.00
   5 Lloyd, Stephen     $1,033.85    $8,990.00
   6 Peters, Jill       $1,054.55    $9,170.00
   7 Rogers, Cheryl     $1,214.40   $10,560.00
   8 Scott, Henry       $1,414.50   $12,300.00
   9
  10
  11
```

Now, copy the data from Columns 1 and 2 into the scrap:

1. Use the arrow keys to move the cursor to R1C1.

2. Press ⎡C⎤, then ⎡F⎤ for the Copy From command.

3. **R1C1** is the proposed response in the cells field. Press ⎡F8⎤, then press ⎡:⎤, and move the cursor to R8C2. **R1C1: R8C2** appears in the COPY FROM cells field.

4. Press ⎡TAB⎤ to move to the next field, and type **scrap**. Press ⎡ENTER⎤. All spreadsheet data in Columns 1 and 2, Rows 1-8 is copied to the scrap.

Transferring the Data from Multiplan to Word

Now, write the memo to the payroll department.

1. Press ⎡CTRL⎤ ⎡F10⎤ to return to the System Manager.

2. Create a document named MEMO in the Word application.

When the new Word document appears on the screen, the status line shows you that the data from the COMM worksheet is in the scrap:

```
Word: MEMO        {Baxter, Diane→  $846.40↵Fitzgerald, John→$...}
```

Important Note

As a precaution before you begin the memo, press ⎡F5⎤ until **Ns** appears on the status line. Should you delete anything from the memo before you insert the spreadsheet data from the scrap, this ensures that the deleted words or characters do **not** replace the scrap data.

Next, type the first part of the memo:

```
To:  Payroll ¶
From:  Sales ¶
Date:  12/1/85 ¶
Re:  November Commissions ¶
¶

¶
¶
Here are the November commissions due the sales staff: ¶
¶
¶
⸎
```

Finally, insert the data from the scrap.

1. Press ESC to go into the Command mode.

2. Press I for the Insert command. The computer inserts the data from the scrap at the current cursor location.

```
To:  Payroll ¶
From:  Sales ¶
Date:  12/1/85 ¶
Re:  November Commissions ¶

¶
¶
¶
Here are the November commissions due the sales staff: ¶
¶
¶
Baxter, Diane                    $846.40↓
Fizgerald, John                  $1,099.40↓
Hill, Carol                      $1,362.75↓
Johnson, Lee                     $1,236.25↓
Lloyd, Stephen                   $1,033.85↓
Peters, Jill                     $1,054.55↓
Rogers, Cheryl                   $1,214.40↓
Scott, Henry                     $1,414.50↓
⸎
```

Only the last 2 lines of data appear on the screen. Now, finish typing the memo:

```
Rogers, Cheryl                    $1,214.40
Scott, Henry                      $1,414.50
¶
¶
Please make sure that the sales commissions are added to the
December paychecks.
¶
¶
Thank you, ¶
¶
¶
¶
John Smith,
Sales Manager
⌂
```

You can now print the memo by pressing [ESC], then [P], choosing the appropriate responses to the Print command fields, and pressing [ENTER]. Be sure your printer is properly set up before you print.

The finished memo appears like this:

To: Payroll
From: Sales
Date: 12/1/85
Re: November Commissions

Here are the November commissions due the sales staff:

Baxter, Diane $846.40
Fitzgerald, John $1,099.40
Hill, Carol $1,362.75
Johnson, Lee $1,236.25
Lloyd, Stephen $1,033.85
Peters, Jill $1,054.55
Rogers, Cheryl $1,214.40
Scott, Henry $1,414.50

Please make sure that the sales commissions are added to the December paychecks.

Thank you,

John Smith

John Smith,
Sales Manager

Appendix D
ASCII Character Codes

Decimal	Hexa-decimal	Binary	Printed Character	Key Top Character
0	00	00000000	(Space)	CTRL 2
1	01	00000001	☺	CTRL A
2	02	00000010	■	CTRL B
3	03	00000011	♥	CTRL C
4	04	00000100	♦	CTRL D
5	05	00000101	♣	CTRL E
6	06	00000110	♠	CTRL F
7	07	00000111	•	CTRL G
8	08	00001000	Backspace	CTRL H
9	09	00001001	Tab	CTRL I
10	0A	00001010	◙	CTRL J
11	0B	00001011	♂	CTRL K
12	0C	00001100	♀	CTRL L
13	0D	00001101	Carriage Return	CTRL M
14	0E	00001110	♫	CTRL N
15	0F	00001111	☼	CTRL O
16	10	00010000	▶	CTRL P
17	11	00010001	◀	CTRL Q
18	12	00010010	↕	CTRL R
19	13	00010011	‼	CTRL S
20	14	00010100	¶	CTRL T
21	15	00010101	§	CTRL U
22	16	00010110	─	CTRL V
23	17	00010111	↨	CTRL W
24	18	00011000	↑	CTRL X
25	19	00011001	↓	CTRL Y
26	1A	00011010	→	CTRL Z
27	1B	00011011	←	ESC
28	1C	00011100	└	CTRL >
29	1D	00011101	╫	CTRL]
30	1E	00011110	▲	CTRL 6

Decimal	Hexa-decimal	Binary	Printed Character	Key Top Character
31	1F	00011111	▼	CTRL _
32	20	00100000	(Space)	Space
33	21	00100001	!	!
34	22	00100010	"	"
35	23	00100011	#	#
36	24	00100100	$	$
37	25	00100101	%	%
38	26	00100110	&	&
39	27	00100111	'	'
40	28	00101000	(	(
41	29	00101001	)	)
42	2A	00101010	*	*
43	2B	00101011	+	+
44	2C	00101100	'	,
45	2D	00101101	—	-
46	2E	00101110	•	.
47	2F	00101111	/	/
48	30	00110000	0	0
49	31	00110001	1	1
50	32	00110010	2	2
51	33	00110011	3	3
52	34	00110100	4	4
53	35	00110101	5	5
54	36	00110110	6	6
55	37	00110111	7	7
56	38	00111000	8	8
57	39	00111001	9	9
58	3A	00111010	:	:
59	3B	00111011	;	;
60	3C	00111100	<	<
61	3D	00111101	=	=
62	3E	00111110	>	>
63	3F	00111111	?	?

Decimal	Hexa-decimal	Binary	Printed Character	Key Top Character
64	40	01000000	a	@
65	41	01000001	A	A
66	42	01000010	B	B
67	43	01000011	C	C
68	44	01000100	D	D
69	45	01000101	E	E
70	46	01000110	F	F
71	47	01000111	G	G
72	48	01001000	H	H
73	49	01001001	I	I
74	4A	01001010	J	J
75	4B	01001011	K	K
76	4C	01001100	L	L
77	4D	01001101	M	M
78	4E	01001110	N	N
79	4F	01001111	O	O
80	50	01010000	P	P
81	51	01010001	Q	Q
82	52	01010010	R	R
83	53	01010011	S	S
84	54	01010100	T	T
85	55	01010101	U	U
86	56	01010110	V	V
87	57	01010111	W	W
88	58	01011000	X	X
89	59	01011001	Y	Y
90	5A	01011010	Z	Z
91	5B	01011011	[	[
92	5C	01011100	\	CTRL /
93	5D	01011101	]	]
94	5E	01011110	^	ê
95	5F	01011111	—	—
96	60	01100000	`	è

Decimal	Hexa-decimal	Binary	Printed Character	Key Top Character
97	61	01100001	a	a
98	62	01100010	b	b
99	63	01100011	c	c
100	64	01100100	d	d
101	65	01100101	e	e
102	66	01100110	f	f
103	67	01100111	g	g
104	68	01101000	h	h
105	69	01101001	i	i
106	6A	01101010	j	j
107	6B	01101011	k	k
108	6C	01101100	l	l
109	6D	01101101	m	m
110	6E	01101110	n	n
111	6F	01101111	o	o
112	70	01110000	p	p
113	71	01110001	q	q
114	72	01110010	r	r
115	73	01110011	s	s
116	74	01110100	t	t
117	75	01110101	u	u
118	76	01110110	v	v
119	77	01110111	w	w
120	78	01111000	x	x
121	79	01111001	y	y
122	7A	01111010	z	z
123	7B	01111011	{	CTRL 9
124	7C	01111100	|	CTRL :
125	7D	01111101	}	CTRL 0
126	7E	01111110	~	CTRL =
127	7F	01111111	(Space)	CTRL BKSP
128	80	10000000	Ç	SHIFT ALT F
129	81	10000001	ü	SHIFT CTRL U

Decimal	Hexa-decimal	Binary	Printed Character	Key Top Character		
130	82	10000010	é	SHIFT	CTRL	D
131	83	10000011	â	SHIFT	CTRL	1
132	84	10000100	ä	SHIFT	CTRL	Q
133	85	10000101	à	SHIFT	CTRL	Z
134	86	10000110	à	SHIFT	CTRL	A
135	87	10000111	ç	SHIFT	CTRL	F
136	88	10001000	ê	SHIFT	CTRL	3
137	89	10001001	ë	SHIFT	CTRL	E
138	8A	10001010	è	SHIFT	CTRL	C
139	8B	10001011	ï	SHIFT	CTRL	I
140	8C	10001100	î	SHIFT	CTRL	8
141	8D	10001101	ì	SHIFT	CTRL	<
142	8E	10001110	Ä	SHIFT	ALT	Q
143	8F	10001111	Å	SHIFT	ALT	W
144	90	10010000	É	SHIFT	ALT	D
145	91	10010001	æ	SHIFT	CTRL	X
146	92	10010010	Æ	SHIFT	ALT	X
147	93	10010011	ô	SHIFT	CTRL	9
148	94	10010100	ö	SHIFT	CTRL	O
149	95	10010101	ò	SHIFT	CTRL	>
150	96	10010110	û	SHIFT	CTRL	7
151	97	10010111	ù	SHIFT	CTRL	M
152	98	10011000	ÿ	SHIFT	CTRL	Y
153	99	10011001	Ö	SHIFT	ALT	O
154	9A	10011010	Ü	SHIFT	ALT	U
155	9B	10011011	¢	SHIFT	ALT	4
156	9C	10011100	£	SHIFT	ALT	3
157	9D	10011101	¥	SHIFT	CTRL	6
158	9E	10011110	Pt	SHIFT	CTRL	4
159	9F	10011111	f	SHIFT	ALT	C
160	A0	10100000	á	SHIFT	CTRL	A
161	A1	10100001	í	SHIFT	CTRL	K
162	A2	10100010	ó	SHIFT	CTRL	L

Decimal	Hexa-decimal	Binary	Printed Character	Key Top Character		
163	A3	10100011	ú	SHIFT	CTRL	J
164	A4	10100100	ñ	SHIFT	CTRL	N
165	A5	10100101	Ñ	SHIFT	ALT	N
166	A6	10100110	ª	SHIFT	CTRL	2
167	A7	10100111	º	SHIFT	CTRL	O
168	A8	10101000	¿	SHIFT	ALT	?
169	A9	10101001	⌐	SHIFT	ALT	6
170	AA	10101010	¬	SHIFT	ALT	7
171	AB	10101011	½	SHIFT	CTRL	?
172	AC	10101100	¼	SHIFT	CTRL	P
173	AD	10101101	¡	SHIFT	ALT	1
174	AE	10101110	«	SHIFT	ALT	K
175	AF	10101111	»	SHIFT	ALT	L
176	B0	10110000	░	CTRL	ALT	1
177	B1	10110001	▒	CTRL	ALT	Q
178	B2	10110010	▓	CTRL	ALT	DEL
179	B3	10110011	│	CTRL	ALT	M
180	B4	10110100	┤	CTRL	ALT	B
181	B5	10110101	╡	CTRL	ALT	5
182	B6	10110110	╢	CTRL	ALT	T
183	B7	10110111	╖	CTRL	ALT	7
184	B8	10111000	╕	CTRL	ALT	P
185	B9	10111001	╣	CTRL	ALT	G
186	BA	10111010	║	CTRL	ALT	J
187	BB	10111011	╗	CTRL	ALT	K
188	BC	10111100	╝	CTRL	ALT	I
189	BD	10111101	╜	CTRL	ALT	8
190	BE	10111110	╛	CTRL	ALT	+
191	BF	10111111	┐	CTRL	ALT	<
192	C0	11000000	└	CTRL	ALT	"
193	C1	11000001	┴	CTRL	ALT	X
194	C2	11000010	┬	CTRL	ALT	C
195	C3	11000011	├	CTRL	ALT	V

Decimal	Hexa-decimal	Binary	Printed Character	Key Top Character		
196	C4	11000100	—	CTRL	ALT	Z
197	C5	11000101	+	CTRL	ALT	N
198	C6	11000110	╞	CTRL	ALT	4
199	C7	11000111	╟	CTRL	ALT	R
200	C8	11001000	╚	CTRL	ALT	O
201	C9	11001001	╔	CTRL	ALT	L
202	CA	11001010	╩	CTRL	ALT	S
203	CB	11001011	╦	CTRL	ALT	D
204	CC	11001100	╠	CTRL	ALT	F
205	CD	11001101	═	CTRL	ALT	A
206	CE	11001110	╬	CTRL	ALT	H
207	CF	11001111	╧	CTRL	ALT	W
208	D0	11010000	╨	CTRL	ALT	2
209	D1	11010001	╤	CTRL	ALT	E
210	D2	11010010	╥	CTRL	ALT	3
211	D3	11010011	╙	CTRL	ALT	O
212	D4	11010100	╘	CTRL	ALT	]
213	D5	11010101	╒	CTRL	ALT	_
214	D6	11010110	╓	CTRL	ALT	9
215	D7	11010111	╫	CTRL	ALT	Y
216	D8	11011000	╪	CTRL	ALT	6
217	D9	11011001	┘	CTRL	ALT	:
218	DA	11011010	┌	CTRL	ALT	>
219	DB	11011011	█	SHIFT	ALT	E
220	DC	11011100	▄	SHIFT	ALT	R
221	DD	11011101	▌	SHIFT	ALT	H
222	DE	11011110	▐	SHIFT	ALT	Y
223	DF	11011111	▀	SHIFT	ALT	T
224	E0	11100000	α	SHIFT	CTRL	5
225	E1	11100001	β	SHIFT	CTRL	B
226	E2	11100010	Γ	SHIFT	CTRL	G
227	E3	11100011	π	SHIFT	CTRL	]
228	E4	11100100	Σ	SHIFT	ALT	S

Decimal	Hexa-decimal	Binary	Printed Character	Key Top Character		
229	E5	11100101	σ	SHIFT	CTRL	S
230	E6	11100110	μ	SHIFT	ALT	]
231	E7	11100111	τ	SHIFT	CTRL	T
232	E8	11101000	φ	SHIFT	ALT	V
233	E9	11101001	θ	SHIFT	ALT	G
234	EA	11101010	Ω	SHIFT	CTRL	H
235	EB	11101011	δ	SHIFT	CTRL	R
236	EC	11101100	∞	SHIFT	ALT	5
237	ED	11101101	ø	SHIFT	CTRL	V
238	EE	11101110	∈	SHIFT	ALT	"
239	EF	11101111	∩	SHIFT	CTRL	"
240	F0	11110000	≡	SHIFT	CTRL	+
241	F1	11110001	±	SHIFT	ALT	+
242	F2	11110010	≥	SHIFT	ALT	>
243	F3	11110011	≤	SHIFT	ALT	<
244	F4	11110100	⌐	SHIFT	ALT	:
245	F5	11110101	⌡	SHIFT	CTRL	:
246	F6	11110110	÷	SHIFT	ALT	9
247	F7	11110111	≈	SHIFT	CTRL	_
248	F8	11111000	°	SHIFT	ALT	0
249	F9	11111001	∙	SHIFT	ALT	I
250	FA	11111010	∙	SHIFT	ALT	P
251	FB	11111011	√	SHIFT	ALT	_
252	FC	11111100	ⁿ	SHIFT	ALT	8
253	FD	11111101	2	SHIFT	ALT	2
254	FE	11111110	∎	SHIFT	ALT	J
255	FF	11111111	Space	SHIFT CTRL BKSP		

Ordinary face

```
POWER                                    ⊙    [72]
BREAK
EXT.[142][143][59][60]  [61][62][63][64]  [65][66][67][68]  [75][80][77]
PAUSE PRINT  F1  F2   F3  F4  F5  F6    F7  F8  F9  F10    ←   ↓   →

[ESC 27][1][2][3][4][5][6][7][8][9][0][-][=][BKSP 8]
[TAB 9][q][w][e][r][t][y][u][i][o][p][(][RETURN 13]
[a][s][d][f][g][h][j][k][l][;][']
[z][x][c][v][b][n][m][,][.][/]
[EXT. 59][SPACE 32]
```

SHIFT face

```
POWER                                    ⊙    [73]
BREAK
EXT.[0][/][84][85]  [86][87][88][89]  [90][91][92][93]  [133][81][134]
PAUSE PRINT  F1  F2   F3  F4  F5  F6    F7  F8  F9  F10    ←   ↓   →

[EXT. 138][!][@][#][$][%][^][&][*][(][)][_][+][EXT. 83]
[EXT. 15][Q][W][E][R][T][Y][U][I][O][P][]][EXT. 135]
[A][S][D][F][G][H][J][K][L][:][']
[SHIFT][Z][X][C][V][B][N][M][<][>][?][SHIFT]
[EXT. 84][SPACE 32]
```

CTRL face

```
POWER                                    ⊙    [132]
BREAK
Ext.[/][/][94][95]  [96][97][98][99]  [100][101][102][103]  [71][118][79]
PAUSE PRINT  F1  F2   F3  F4  F5  F6    F7  F8  F9  F10    ←   ↓   →

[Ext. 139][/][Ext. 3][/][/][/][30][/][/][{][}][31][~][127]
[/][17][23][5][18][20][25][21][9][15][16][29][Ext. 136]
[CTRL][1][19][4][6][7][8][10][11][12][:][.]
[26][24][3][22][2][14][13][/][28][\]
[Ext. 94]
```

SHIFT CTRL face

POWER

BREAK

Ext [141]

PAUSE PRINT F1 F2 F3 F4 F5 F6 F7 F8 F9 F10

| â 131 | å 166 | ê 136 | Pt 158 | α 224 | ¥ 157 | û 150 | î 140 | ô 147 | φ 167 | ≈ 247 | ≡ 240 | 255 |

| ä 132 | à 133 | ë 137 | ƃ 235 | τ 231 | ÿ 152 | Ü 129 | ï 139 | Ö 148 | ¼ 172 | π 227 |

CTRL | á 160 | σ 229 | é 130 | ç 128 | Γ 226 | Ω 234 | ú 163 | í 161 | ó 162 | ∪ 245 | ∩ 239 |

SHIFT | à 133 | æ 145 | è 138 | φ 237 | β 225 | π 164 | ù 151 | ì 141 | ò 149 | ½ 171 | SHIFT

SPACE 32   ALT

ALT face

POWER

BREAK

119

PAUSE PRINT F1 F2 F3 F4 F5 F6 F7 F8 F9 F10

104 105 106 107 108 109 110 111 112 113 117 ← ↓ →

| Ext. 140 | Ext. 120 | Ext. 121 | Ext. 122 | Ext. 123 | Ext. 124 | Ext. 125 | Ext. 126 | Ext. 127 | Ext. 128 | Ext. 129 | Ext. 130 | Ext. 131 |

| Ext. 16 | Ext. 17 | Ext. 18 | Ext. 19 | Ext. 20 | Ext. 21 | Ext. 22 | Ext. 23 | Ext. 24 | Ext. 25 | Ext. 137 |

| Ext. 30 | Ext. 31 | Ext. 32 | Ext. 33 | Ext. 34 | Ext. 35 | Ext. 36 | Ext. 37 | Ext. 38 |

| Ext. 44 | Ext. 45 | Ext. 46 | Ext. 47 | Ext. 48 | Ext. 49 | Ext. 50 |

ALT

SHIFT ALT face

POWER

BREAK

PAUSE PRINT F1 F2 F3 F4 F5 F6 F7 F8 F9 F10   ← ↓ →

| ¡ 173 | ² 253 | £ 156 | ¢ 155 | ∞ 236 | ⌐ 218 | ¬ 170 | ∏ 252 | ÷ 246 | ° 248 | √ 251 | ± 241 |

| Ä 142 | Å 143 | ■ 219 | ▬ 220 | ▀ 223 | ▮ 222 | Ü 154 | + 249 | Ö 154 | ≠ 250 | μ 230 |

| Σ 228 | É 144 | Ç 128 | Θ 233 | ▪ 221 | ▪ 254 | « 174 | » 175 | ⌐ 244 | ε 238 |

SHIFT | Æ 146 | ƒ 159 | φ 232 | Ñ 165 | ≤ 243 | ≥ 242 | ¿ 168 | SHIFT

SPACE 32   ALT

266

CTRL ALT face

POWER

BREAK
PAUSE PRINT F1 F2 F3 F4 F5 F6 F7 F8 F9 F10 ← ↓ →

176 208 210 198 181 216 183 189 214 211 213 190 178
177 207 209 199 182 215 188 200 184 212
CTRL 205 202 203 204 185 206 186 187 201 217 192
196 193 194 195 180 197 179 191 169

SPACE 32   ALT

Number face

POWER

BREAK
PAUSE PRINT F1 F2 F3 F4 F5 F6 F7 F8 F9 F10 ← ↓ →

7 8 9
4 5 6 + %
1 2 3 - ×
0 ÷ SHIFT ↑

Note of input character set:
Following optional extended codes are supported:

ASCII NUL (Control – @)
ALT – 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, –, =

Glossary

absolute reference. A reference to a cell that uses specific row and column numbers; for example, R17C12. *See also* **reference; relative reference.**

acoustic coupler. A type of modem designed to transmit and receive data through a telephone handset. It consists of a cradle (into which you place the telephone handset) equipped with 2 rubber cups: one for the telephone's earpiece and one for the mouthpiece.

active cell. The highlighted cell (Multiplan). The contents of the active cell appear on the status line.

alarm. A reminder that is automatically set each time you create a new appointment record in Calendar. The alarm goes off at whatever time you enter in the Start field. Set a secondary alarm by filling in the R (Reminder) field. Calendar does not set an automatic alarm for a task; you must fill in the R field. *See also* **reminder**.

alignment. The horizontal position of text within the width of a line. The position of text as related to the left and right margins. *See also* **justified; ragged.**

Answer mode. A mode in which Telcom transfers control to the host computer.

appointment. An activity that has a Start and Stop time as opposed to a Start and Stop date. *See also* **task.**

arithmetic operator. A symbol used to perform arithmetic calculations in Multiplan. *See also* **comparison operator.**

baud rate. The speed of data transmission. One of 6 communications setting items most computers require.

boilerplate. Any character or characters (such as $, %, /, and so forth), other than standard text, number, or date/time format characters, you include in fields of the FORM record. Boilerplates allow you to clearly identify the nature of your data; for example, $ distinguishes dollar amounts from decimal fractions in hundredths.

bottom margin. The number of blank lines from the last text line to the bottom edge of the page. *See also* **first line indent; hanging indent; indent; left margin; margins; right margin; top margin.**

break. A place where you deliberately stop the text and a new start follows. Examples of breaks are word breaks, line breaks, paragraph breaks, and page breaks. *See also* **hard break; soft break.**

buffer. A storage area inside your portable computer, which stores incoming text that has already scrolled off the screen, so that you may review it (sometimes called a review buffer).

byte. A unit of storage equivalent to 1 character.

calculator window. An area, or window, of the screen in which you can perform simple calculations using the Calculator function (CTRL F2).

cancel. To instruct your computer to ignore a command by pressing ESC before it is carried out. *See also* **terminate.**

cell contents. The text, value, or formula that you enter in a cell, as well as any formatting characters (such as $ or %) that you specify. If the cell contains a formula, the screen displays the value produced by the formula.

column. A vertical group of adjoining cells on a worksheet. Up to 63 columns are allowed. *See also* **row.**

Command mode. The mode in which you may choose and carry out commands.

command field. An area within a command in which you specify information about how the command should be carried out. *See also* **menu-type command field; fill-in command field.**

command menu. Lines on the screen that display the commands currently available.

communications connection. Two computers connected and communicating with each other via the telephone lines.

communications settings. The technical specifics of the agreement between your Tandy 600 computer and the other (host) computer on how they will communicate. There are 6 items in a typical setting.

comparison. Any specification (such as =, >, or <) you can enter in a key field of a FIND record. *See also* **FIND record; key field.**

comparison operator. A symbol, such as > (greater than) or < (less than), used to perform logical comparisons between 2 or more values. *See also* **arithmetic operator.**

control record. A record that you use to name (ID), format (FORM), sort (SORT), or find (FIND) records in a data base. (Control records determine the structure, order, and appearance of the data base.) *See also* **data record.**

copy. To use the Copy command to duplicate text and store it in the scrap without changing the original text. *See also* **scrap; scrap mode.**

current settings. The last setting items used to establish a communications connection.

cursor. A blinking rectangle or area on the screen that appears highlighted. *See also* **selection marker.**

Daily Diary. The format of the daily screen in Calendar. *See also* **Month calendar.**

data base. A grid of File application fields in which data is stored.

data file. A file containing data.

data record. Any record, other than a control record, in which you enter data. A database is made up of data records. *See also* **control record.**

default response. A command field response that is supplied by the system or application program. The default is the response that the system always returns to if memory is reset. You may replace a default response with your own response. *See also* **proposed response; response.**

delete. (1) To use the Delete command to erase a file from memory or from a disk. (2) To use the Delete command or ⌈DELETE⌋ key to erase data from a file (with or without placing it in the scrap). *See also* **scrap.**

disk file display. A listing of files stored on a disk, which appears on the System Manager screen when the System Manager Options command is set and you press the Disk Reference key (⌈F3⌋). *See also* **memory file display.**

download. To transfer information from another (host) computer to your Tandy 600 computer. *See also* **upload.**

duplex. Tells Telcom whether or not to display transmitted characters on the screen. Half duplex displays transmitted characters; full duplex does not. Many hosts are full duplex; they echo received characters back to the other computer. In most cases, set Telcom to full duplex. One of 6 communications setting items most computers recognize.

edit. (1) To change a response in a command field. (2) To change data in a document, data base, spreadsheet, or other file.

edit key. Any key used to alter a response in a command prompt, such as ⌈BKSP⌉ and ⌈DEL⌉. The keys ⌈F7⌉-⌈F10⌉.

extend. Enlarging the current selection to include a larger area. ⌈F6⌉ is the extend selection key.

extension. A suffix added to a filename. An extension may be any 3 legal filename characters. A period separates extensions from the filename. For example: in EXAMPLE.DOC, .DOC is the extension. Extensions identify the type of a particular file. For example, you can assign an extension of .TXT to any data file containing text. *See also* **filename.**

field. The basic unit of information in a file.

file. The unit of storage for your data. Documents, data bases, and spreadsheets are examples of files.

filename. The name by which the computer recognizes and accesses a file. The names of all files stored in your computer's memory appear on the System Manager screen. *See also* **extension.**

fill-in command field. A command field that requires you to type information. *See also* **menu-type command field.**

FIND record. The control record in which you enter comparisons instructing File to search a data base for, and then display, a specific set of data records. *See also* **comparison; key field.**

first line indent. The distance between the left margin of the page and the first line of each paragraph. A positive measurement indents the line; a negative measurement "hangs" the indent (sometimes called an "outdented" paragraph). *See also* **bottom margin; hanging indent; indent; left margin; margins; right margin; top margin.**

flow control. A means by which you can control scrolling. Identified as xon/xoff, this is one of 6 communications setting items most computers recognize.

format. (1) The appearance and alignment of a cell's contents. The format controls numeric punctuation and the alignment of text or values. Use the Format Cells or Format Default command to specify cell formats. (2) The appearance of a data base column.

FORM record. The control record in which you enter the format for each column of data in a data base.

formula. A combination of operations that produces a value. Whenever you change the contents of a cell, Multiplan recalculates all formulas on the spreadsheet affected by the change (unless you choose No in the recalc field of the Options command).

group of cells. A collection of adjoining cells (range), the cells between two ranges (intersection), or a combination of two ranges (union). *See also* **intersection; name; range; union.**

hanging indent. A negative first line indent, which makes the first line appear to the left of the body of the paragraph. The paragraph must be indented from the left margin (left indent) at least as many characters as the hanging indent. For example, if the first line indent is -5, the left margin must be 5 or greater. *See also* **bottom margin; first line indent; indent; left margin; margins; right margin; top margin.**

hard break. A new line (SHIFT ENTER), paragraph (ENTER), or page (CTRL ENTER) that you start in a document. Word always observes these breaks. *See also* **soft break.**

horizontal scroll. To move the text left or right so that parts of the document outside the window move into view. *See also* **scroll; vertical scroll.**

host. Any other computer with which you are communicating.

ID record. The control record in which you enter column names.

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indent. The distance between the left page margin and the beginning of a line (left indent) or the right page margin and the end of a line (right indent). Indents normally make text narrower than margins. *See also* **bottom margin; first line indent; hanging indent; left margin; margins; right margin; top margin.**

insert. (1) To use the Insert command or Insert function key (F3) to place the scrap text in front of the cursor or currently selected text. (2) To type new characters into a document while in the Edit mode.

input line. The bottom line of the Calculator window.

intersection. A group of cells that forms the overlapping area of 2 ranges. Use the Name command to name the two ranges that intersect; then, separate the 2 range names with a blank space. *See also* **name; range; union.**

justified. Text in which the left and right edges are flush with the left and right indents. Spaces are enlarged between words to make the text fill the lines. *See also* **alignment; ragged.**

keep. An instruction to keep all the specified text together (usually a paragraph or table).

key field. (1) The field of a SORT record in which you enter a sort specification. (2) The field of a FIND record in which you enter a comparison. *See also* **comparison; primary sort; secondary sort.**

left margin. The number of blank spaces (sometimes called columns) from the left edge of the page to the first text character, not including any left or first line paragraph indents. *See also* **bottom margin; first line indent; hanging indent; indent; margins; right margin; top margin.**

link. To use the Multiplan Window Link command to cause 2 windows to scroll together rather than independently.

lock. To use the Lock command to protect cells or formulas from inadvertent alteration.

logon. The typing sequence required to gain access to a host computer.

margins. The areas from the edges of the page to the edges of the text, without indents. *See also* **bottom margin; first line indent; hanging indent; indent; left margin; right margin; top margin.**

memory file display. The listing of files stored in your computer's memory as they normally appear on the System Manager screen. *See also* **disk file display.**

menu. A list of the currently available commands.

menu-type command field. A command field in which two or more choices are shown. Press the space bar to move between the command field choices. *See also* **fill-in command field.**

message. A notice that appears at the bottom of the screen to instruct you or explain an error. *See also* **message line.**

message line. The next to the last line on the screen on which messages are displayed. *See also* **message.**

modem. A device that translates the signals coming from your computer into a form that can be transmitted over standard telephone lines. A modem also translates incoming signals into a form your computer can understand.

Month calendar. The format of the monthly screen. *See also* **Daily Diary.**

name. A descriptive term that refers to a cell or range of cells. *See also* **range; reference.**

NEW column. The last column of a data base.

NEW record. The last record of a data base.

operation. A built-in mathematical or statistical formula used in Multiplan.

Overtype mode. A Word option that allows you to type new text directly over old text, by pressing [SHIFT] [F5] or choosing Yes in the Overtype field in the Option command.

paragraph attributes. Fields in the Format Paragraph command that control line layout and spacing.

paragraph. The text between 2 paragraph marks, including the trailing paragraph mark. *See also* **paragraph attributes; paragraph mark.**

paragraph mark. A character which identifies the end of a paragraph.

parity. A form of error checking used to ensure correct character transmission. One of 6 communications setting items most computers recognize.

phonebook. The data base file that contains the 3 fields (Name, Number, and Settings) Telcom uses when performing automatic dialing.

phrase. An element of a script. Telcom has 8 different phrases: connect, disconnect, options, transfer, respond to, respond with, modify, and pause. *See also* **script.**

preset format. Format specifications affecting such characteristics as tab stops, page size, and margins. These constitute the proposed format for all documents printed, systemwide. Set individual document formats with the Word Format Document command.

primary sort. A specification in a SORT record field that tells File to sort data records according to the data in that column. "1" specifies a primary sort. *See also* **key field; secondary sort.**

priority. One of the 5 fields of the Calendar Daily Diary screen. Priorities are: urgent, high, moderate, and low.

proposed response. A command field response that is supplied by the application program. A proposed response is usually based on your most recent use of the command or the current status of the program. You may replace a proposed response with your own response. *See also* **default; response.**

protocol. Assures proper transfer of a file from one computer to another.

ragged. Text that has uneven left (ragged left) or right (ragged right) edges. *See also* **alignment; justified.**

range. Any rectangular group of cells on a worksheet. A colon (:) separates the reference of the cell in the upper left corner and the reference of the cell in the lower right corner of the rectangle. *See also* **intersection; name; union.**

record. (1) A horizontal row of fields. (2) The specifics of a given appointment or task in Calendar.

reference. A designation that includes the row and column numbers for a cell or group of cells. *See also* **absolute reference; name; relative reference.**

relative reference. The location of a cell relative to the location of another cell. For example, R[-1]C refers to the cell 1 row above the current row in the same column. Relative references are most frequently used in formulas. *See also* **absolute reference; name; reference.**

reminder. One of the 5 fields of the daily screen. Setting a reminder alarm is optional. If you fill in this field for an appointment, an alarm goes off at the Reminder time as well as the Start time. Filling in this field for a task sets an alarm for the task. *See also* **alarm.**

replace. To use the Replace command or the Replace function (SHIFT F3) to replace the currently selected text with the text from the scrap.

response. Information you type into a field or select from a list. Completes a command so that it can be carried out.

right margin. The number of blank spaces (sometimes called columns) from the right edge of the text (the last character) to the right edge of the page, not including any right paragraph indents. *See also* **bottom margin; first line indent; hanging indent; indent; left margin; margins; top margin.**

row. A horizontal group of adjoining cells across a worksheet. There are 255 possible rows in Multiplan, designated by the numbers 1 through 255. *See also* **column.**

save. To preserve your work in a file stored in your computer's memory. When you press CTRL F10, the current file is automatically saved in memory.

scientific notation. The exponential form of a number, used to represent very large or very small values.

scrap. A special part of your computer's memory in which data is temporarily stored. The Copy and Delete commands and the DEL key can store data in the scrap if the proper command mode is chosen. *See also* **copy; delete; insert; scrap mode.**

scrap mode. The Replace or Append mode, in which deleted or copied data is stored in the scrap. In the No Scrap mode, all deleted data is lost; all copied data remains unchanged. *See also* **copy; delete; scrap.**

script. A pre-recorded file that lets you automate all or part of a communications connection or session. Scripts commonly contain logon and request sequences. *See also* **phrase.**

scroll. To move the text up, down, left, or right so that parts of the document outside the window move into view. *See also* **horizontal scroll; vertical scroll.**

search. To use the Search command to look for a group of characters, a word, or a phrase within a document.

search-and-replace. To use the Replace command to look for a group of characters, a word, or a phrase within a document and to replace it with the specified text. *See also* **search; replace.**

secondary sort. A specification in a SORT record field that tells File to sort data records according to the data in that column after the primary sort is performed. "2" specifies a secondary sort. *See also* **key field; primary sort.**

select. To highlight a character, word, field, cell, row, column, record, and so forth so that it is affected by the next command.

selection. The highlighted character, word, field, cell, row, column, record, and so forth so that it is affected by the next command.

selection marker. The highlight on the command menu that indicates the active command or command field. *See also* **cursor.**

Session menu. The list of commands available to you during a Telcom session. Press ⌜SHIFT⌝ ⌜ESC⌝ to go to Command mode.

settings. *See* **communications settings.**

soft break. A page or line break determined by the page or line layout. Soft breaks may change after further editing of the document. *See also* **hard break.**

SORT record. The control record in which you enter sort criteria for each column. The sort criteria determines the order in which the records are sorted.

spreadsheet. A grid of cells displayed by Multiplan in which you store formulas and values.

status line. A line at the bottom of the screen that displays the current status (the name of the current application and file, the indicators, and so forth).

stop bits. The internal code transmitted at the end of each character that indicates how to transmit it. One of 6 communications setting items most computers recognize.

subcommand. A list, or menu, of commands necessary to carry out a particular command.

tab stop. A position for aligning text in columns using tab characters.

task. An activity that has a Start (and an optional Stop) date as opposed to a Start (and Stop) time. *See also* **appointment.**

Terminal mode. The Telcom mode in which data is communicated to a host computer.

terminate. To interrupt the execution of a command; for example, to halt the printing of a file. You terminate a command by pressing $\boxed{\text{BREAK}}$. *See also* **cancel.**

text. (1) A string of characters (usually letters) that may be used for titles in a spreadsheet. (2) Any data file containing text rather than binary code. (3) The data in a Word file.

text file. A file that stores data in text form only. In Multiplan, you print data to a text file to store it for printing later or to prepare it for transfer to a Word document. Text files are listed to the right of the .TXT extension on the System Manager screen. *See also* **extension.**

top margin. The number of blank lines from the top edge of the page to the first text line. *See also* **bottom margin; first line indent; hanging indent; indent; left margin; margins; right margin.**

union. A reference to 2 cells or ranges of cells. A comma (,) separates the two cells or ranges. *See also* **intersection; name; range.**

upload. To transfer information from your Tandy 600 computer to another (host) computer. *See also* **download.**

value. The information you enter in a cell, not including the format of the cell. Values can be numbers, text, or formulas. If you enter a formula in a cell, the value is the result of the calculation performed by the formula.

vertical scroll. To move the text up or down so that parts of the document outside the window move into view. *See also* **horizontal scroll; scroll.**

wildcard character. Characters that represent an unknown character (?) or characters (*) in a search phrase, filename, or extension.

window. The area of a spreadsheet that appears on the screen. Up to 8 windows are allowed.

word length. The size of the "packet" in which the host computer transmits and receives characters. One of 6 communications setting items most computer recognize.

word wrapping. Automatic placement of a word on the next line when it does not fit on the current line.

work file. Files created by the application programs.

worksheet *See* **spreadsheet.**

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SERVICE POLICY

Radio Shack's nationwide network of service facilities provides quick, convenient, and reliable repair services for all TANDY/Radio Shack computer products, in most instances. Warranty service will be performed in accordance with Radio Shack's Limited Warranty. Non-warranty service will be provided at reasonable parts and labor costs.

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