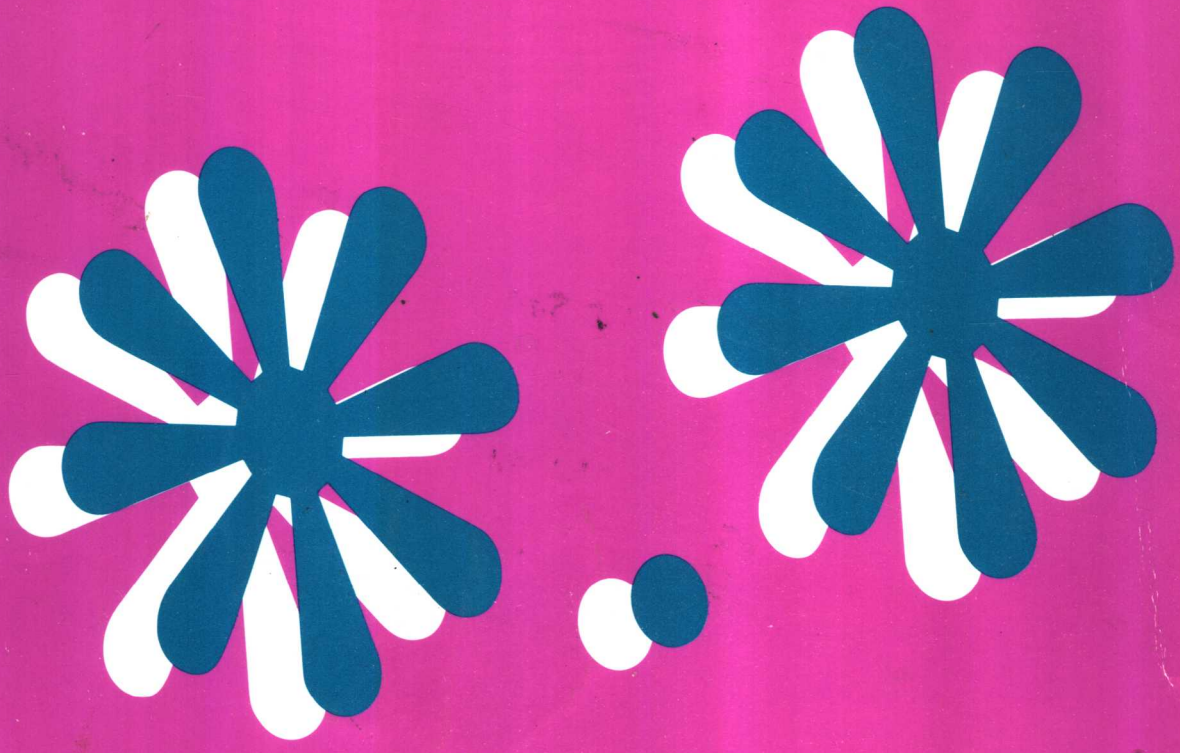
The DOS 5.0 Companion



David Moody

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Introduction to DOS 5 Commands

Chapter 1

The changes introduced by MS- and PC-DOS 5 make for a much more usable DOS. They range from additional switches for the DIR command to the entirely new MS-DOS Editor. This supplement covers the most important of these changes in four chapters, dealing respectively with commands, DOSKEY, the Editor, and the Shell.

Variances in Editions of DOS 5

Various versions of DOS 5 can take advantage of the special features of proprietary internal systems (BIOS), such as those found in IBM, Zenith, Compaq and Phoenix-based computers. Apart from the inclusion of one or two additional utilities, explained in their manuals, any DOS differences work internally, unnoticed by the user. The special DOS versions may also be designed to work with utilities present in earlier versions. In such cases, the installation program notes the presence of earlier DOS versions and retains the utilities that can still work with DOS 5.

Commands, Enhanced and New

By far the most important improvement in the DOS 5 command arsenal is the new online help feature. Any time you are in doubt as to the syntax or effect of a command, enter the switch /? after the command name. This switch causes an informative screen to appear, assuming that HELP.EXE and DOSHELP.HLP are accessible to your computer.

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DOS requires that each command be spelled precisely. If spelling is a problem for you, printing a copy of DOSHELP.HLP will help.[1]

It provides you with the correct name of each command, as well as a short description. Once you have a list of correctly spelled commands, another bit of help is available to you. Since entering any of these commands followed by /? provides a screenful of description, you can use PrintScreen to generate a hard copy of the syntax for each one. Printing two screens to each page will create a concise manual. Try it.

In addition, you can use the following chart to connect the command information found in Forest Lin's *The DOS Coursebook* and the DOS 5 updates found in this chapter:

Coursebook References	Enhanced (and New) Commands	Supplement Page
Chapter 1:	DATE, TIME, (COUNTRY, CHCP), KEYB	2
Chapter 2:	DIR, DISKCOPY, DEL/ERASE, (MIRROR, UNDELETE)	3, 4
Chapter 3:	FORMAT (UNFORMAT)	5
Chapter 7:	ATTRIB	6
Chapter 8:	DIR (/O)	6
Chapter 9:	MEM (/C	7

DATE, TIME, COUNTRY, and CHCP

Although DATE and TIME have not been changed from their DOS 4 versions, the introduction of COUNTRY has made it possible to rearrange the display of month, day, and year. As different country "pages" are selected, the computer changes date displays to those patterns used by people who live there.

COUNTRY also changes the time display; for example, the "a" (short for a.m.) and "p" (p.m.) are used only by USA or Latin America country codes.

In most cases, you will be satisfied with the default setting, which specifies time under the 12-hour system and dates in the mm/dd/yyyy pattern. For example, at precisely 7:31 p.m. on January 9, 1995, the listing would be 7:31:00.00p, 01/09/1995.

If you wish to have the date pattern changed to dd/mm/yyyy, you must bypass the default setting by adding this line to your CONFIG.SYS file:

```
COUNTRY = 003,437
```

The 003 fools the computer into "thinking" you are using a language other than English. However, the computer also assumes that you want to use a new "character page," providing non-English symbols and diacritical marks. The use of 437 in the command ensures that your keyboard will continue to produce the USA symbols that you expect.

To carry out this magic, the computer needs to find the file named COUNTRY.SYS in its root directory. If that file is not there, you must use its complete path and name so the computer can locate it. For example:

```
COUNTRY = 003,437,C:\DOS\COUNTRY.SYS
```

There are other forms you may prefer to use for date and time. For instance, to change both the hour to 24-hour notation (in the example above, to 19:31:00.00) as well as the date (to dd/mm/yyyy)

1 If the MS-DOS utilities are coming to you over a network, printing a utility may not be permitted.

put COUNTRY = 061 in your CONFIG.SYS file. This entry will choose the International English character page.[2]

If you need to know what character page is in use, CHCP (CHeck Character Page) is the command that causes the computer to report the number of the character page in use. The DOS manual shows you the symbols each page can provide.

There is another way you can choose the symbols to be produced by your keyboard: variations on the KEYB command, such as KEYB SP or KEYB FR (SPanish/FRench). Your keyboard can be brought back to "normal" by KEYB US. Using KEYB alone provides a status report.

Since the symbols on the keys themselves do not change, you may want to prepare reminders for yourself (templates). You can stick one on the space just above the top (numeric) keyboard row, showing the different symbols these keys will produce. Reminders of the changes in other keys can be taped to the right or below the key area until you have memorized them.

Warning: Changing the KEYB setting may disable your ability to use EDIT.COM, as well as some other word processors. However, most of the special characters you would gain are available without changing the KEYB setting. If the characters you wish to use are listed in Appendix B of *The DOS Coursebook*, each word processor has a way of producing them. Chapter 3 of this supplement gives a description of how this is done when using EDIT.COM.

DIR and DISKCOPY

The switches to be used with DIR are greatly improved. They have become particularly useful in limiting the files named, so that your computer will not clutter the screen with unneeded names.

/S is the most useful switch. It permits a search for a filename (or group) throughout the drive, or at least throughout all the subdirectories beyond the directory specified. The /S is particularly effective when used with /P so the results do not scroll away. For example, to find all the versions of COMMAND.COM on drive C:

```
DIR C:\COMMAND.COM /S /P
```

/A is another useful limiter. When followed by the appropriate letter, /A limits the listing by Attribute. Thus /AH shows only Hidden files, /AR those marked Read-only, and /AS only System files. Best of all, those of us who have been trying to list directories by using DIR *. (which works only if you have put extensions on all filenames) can now use:

```
DIR /AD
```

In addition to using these switches to display files, you can prevent display of files with given attributes by inserting a minus sign before the attribute code. For example, using /A-A lists files that remain unchanged since last archived or backed up (files pick up an A attribute when introduced or revised).

More than one code can be placed after the A. /ADR, /AR-A, /A-D-R, and /AADRHS are all examples of acceptable (if not necessarily efficient) switches with DIR.

Occasionally, a list of the filenames by themselves is useful. All other information can be omitted from the display if you specify /B (Bare of other information). Adding /L provides the list in lowercase letters. Normally, the list will appear on the monitor. However, you can redirected it to a printer or to

2 Some changes require that you access character pages that your version of DOS 5 may not include. Changing the time to 24-hour while leaving the date in the mm/dd/yy pattern requires one of those special country/page combinations that may not be available to you.

form a new disk file (a neat trick for programmers) by following the command with > PRN or with > plus the desired filename. If you prefer to add the list to an existing file instead of making a new one, use >> instead of >.

In DOS 5, the command DISKCOPY no longer makes the absolutely exact copy of a diskette that was an important feature of earlier versions of DOS. Since all diskettes now get a unique serial number, the number on the target diskette will differ from that on the source diskette. This "feature" is not really significant now. However, when there are few of the earlier versions of DISKCOPY left on computers, this change could be used to limit copying.

This provision could ensure that a working disk had been made solely by using the INSTALL feature of an original purchased master. The INSTALL program could be designed to check the serial number of the disk to which the program is being legitimately installed. This number could be embedded in the working program. Whenever the application functioned, the program would compare the embedded serial number with the serial number on the working disk. If the program had been copied to a new disk, an unauthorized installation method, the two numbers would be different. In this way, a program could not be "stolen" by being surreptitiously copied from someone else's legitimate working disk.

DEL, ERASE, MIRROR and UNDELETE

As in earlier versions, DEL and ERASE are identical in effect. That is, they make files unavailable without literally erasing them. DOS 5 also keeps the switch /P available. This very useful switch allows you to see the name of each file before it is erased, giving you the option to skip erasing it.

The fact that the files are not actually erased has been a mixed pleasure during these years of the MS-DOS era. Several enterprising programmers marketed special utilities and proprietary tools that reconstruct the changes the computer uses to "erase" files. Before this capability became general knowledge, some people found files resurrected that they thought had been safely destroyed. The resurrected evidence sent some of those people to jail.

Now the same enterprising programmers are marketing utilities that not only make files unavailable, but write over the files, turning all the data in them to a succession of zeros, truly destroying them.[3]

However, for most of us who are over-enthusiastic about erasing, it is comforting to know that MS-DOS 5 has adopted two of the utilities that can locate an "erased" file that has not yet been overlaid with a new one. MIRROR and UNDELETE (along with the UNFORMAT command) have been licensed from Central Point Software, Inc., the copyright holder, whose PC TOOLS ® have included them for some time.

MIRROR records information about a given hard drive, including the location of each part of a fragmented file. Unlike the equivalent DOS record, the Mirror is retained even after the file is deleted. In contrast, the DOS remembers only where the deleted file started.

To establish MIRROR's deletion-tracking recorder for drive C: each time the computer is booted, the AUTOEXEC.BAT program should include the command MIRROR C: /TC well before other TSR (Terminate and Stay Resident) programs that might interfere with it. Repeat the command naming each of any other hard drives or partitions you may have.

MIRROR can even record your hard disk partition information onto a floppy. Should the hard disk fail, the information on the floppy is used to restore the hard disk. Use the switch /PARTN and the program will ask you to name the drive containing the floppy disk on which to make the record.

3 Until, of course, someone develops a method of separating any subliminal traces of the earlier files that would otherwise have been overwhelmed by the new magnetic impulses.

Warning: Make sure that you have complete backups of all disks involved when trying this for the first time.

If you are not quite ready to tackle MIRROR, UNDELETE will still work, though not so unerringly or efficiently, since it can consult the DOS directory information instead of the MIRROR file.

UNDELETE, followed by the drive and subdirectory information, if the default won't serve the purpose, seeks out any deleted files and tells you whether or not they can be resurrected. If you use the switch /LIST, it simply provides you with their names; if you use the switch /ALL, it undeletes whatever it can without prompting you. If you have a MIRROR-created record that tracked your deletions, you can specify that the computer should consult that record by using the /DT switch. Using /DOS tells the computer to ignore the MIRROR record, to use the DOS directory information instead.

When you DELETE a file, the first character of its name is replaced with a character most other commands cannot recognize. UNDELETE can recognize this character, and will invite you to select a letter or number to replace it. The new character does not have to be the same one that originally started the filename, by the way; any character will do. However, if you have batch programs or macros that refer to the file by its old name, it is a good idea to make sure that the file finally bears its original name. Of course, you can RENAME it after it is resurrected.

FORMAT Enhancements, Including UNFORMAT

If you have ever formatted a disk that contained unreplaceable information, you will welcome the new FORMAT command as quite possibly being worth the price of DOS 5 all by itself. The command checks the disk for type and contents. It then hides a MIRROR image of the table that tells the computer where to find the pre-FORMAT files. Until you overwrite an old file with new materials, the disk can be restored to its previous condition by using UNFORMAT.

Of course, if you use the switch /U (for Unconditional), FORMAT will not take the time to protect you.

Normally, FORMAT automatically prepares a disk to accept data to its highest capacity if the drive itself can do so. To ensure that a disk is properly formatted to an earlier standard or a smaller capacity than that provided by the drive, use the switch /F: followed by the code for the capacity desired. This code has been greatly simplified in version 5: you need only name the capacity you desire, using kilobytes (as in /F:720K) or megabytes (as in /F:1.2M). When there can be no confusion, you can even leave off the K or the M.

By design, you cannot FORMAT a hard disk to diskette specifications. Indeed, you cannot use DOS 5 to FORMAT a hard disk without receiving a definitive warning, with one exception. That exception can create a serious situation. That is, if you name the label of the hard disk with no errors, some versions will assume you know what you are doing and go ahead without delay.

UNFORMAT also has protections available. Unfortunately, if a disk has received new data since it was formatted, UNFORMAT can cause unexpected unwanted effects. Using the switch /J makes sure the command checks the disk first to find all old content still present before carrying out the command. /TEST is also useful; it shows you the results of the UNFORMAT without actually carrying it out. As with FORMAT, the switch /U carries out the command Unconditionally. The switch /P sends the information to the line printer (LPT1).

Since the hard disk information can be trashed by many means other than by using FORMAT, you should still make regular use of BACKUP to make archive copies of the data on your hard drives. Between regular uses of BACKUP, use BACKUP . . . /M to make interim archives of any hard disk files that have been introduced or changed since the last use of BACKUP. Similarly, you should keep archive copies of data from your diskettes, using COPY or XCOPY.

ATTRIB

One of the more welcome new elements of DOS 5 is a change in the ATTRIB command. To understand why it is welcome, let's review some recent DOS history.

One of the early features of DOS was the ability to encode useful data along with the location of each file. These codes were called "attributes." The computer evaluated the file and assigned the attribute code, but some codes could be overwritten by the user. Formerly, the only attributes that could be changed by the user were the A (Archivable: has not been archived by BACKUP or XCOPY /M since the file was first recorded or later changed) and the R (Read-only; cannot be written to). Earlier versions of DOS denied users the ability to change the S attribute (for (System files) and the all-important H attribute (Hidden; not accessible or even named by DIR; for example, the DOS system files themselves).

Of these capabilities, the hiding or unhiding of files is a real "key to the kingdom," and as such has been reserved for only the most knowledgeable users. The possibilities for mischief, either deliberate or accidental, are almost endless. For example, by a change of the H attribute, you can make critical files "disappear," or you can unhide files and tamper with them before rehiding them.

Of course, enterprising programmers soon began marketing the missing change capabilities to a limited number of trustworthy users. Eventually, major professional tool package programs made them more widely available, but again only to trustworthy users, those serious enough to make a sizable financial investment in their profession.

However, CHKDSK /V (Verbose, listing all files) allowed even hidden files to be named and listed. Users could now see that installers of various versions of DOS had not erased the old system files, which wasted space or forced use of FORMAT. Bowing to the inevitable, or recognizing the increased sophistication and responsibility of users who can venture beyond the protection of the shell, the designers of DOS 5 now trust you. To unhide file named XXDOS.COM so it can be erased or copied, the command is:

```
ATTRIB -H XXDOS.COM
```

To hide all the files in a subdirectory called C:\SUB1, use the command:

```
ATTRIB +H C:\SUB1\*.*
```

Hiding files can protect them from being tampered with or erased accidentally. However, if a professional user is determined to change or erase a hidden file, prevention is almost impossible.

DIR /O

Chapter 8 of *The DOS Coursebook* thoroughly explains the use of SORT as it applies to DIR. If you found SORT to be a tedious and clumsy way to deal with DIR, you will be very pleased to use the new switch /O to force a particular Order in the way DIR presents the filenames. With the switch /O followed by an appropriate code letter you can sort the DIR output in most of the ways you probably need. Some examples are /ON (alphabetic by Name), /OS (by Size, smallest to largest), /OD (Date/time) and /OE (Extension). You can even make sure the directories will be listed first by using the switch /OG.

Each of the above DIR orders can be reversed by inserting a hyphen before the operative letter (to help you remember, think of the use of the hyphen as the mathematic symbol for subtraction). For example, /O-S (Order minus Size) reverses /OS, listing largest files first; /O-G lists directories last instead of first; /O-D reverses the order of date listings; /O-N and /O-E lists the files in reverse alphabetical order by fileName and Extension, respectively.

Tips & Tricks for Data Privacy

To provide minimal privacy protection for your personal journals or diaries, create (MD) a new subdirectory \TEMP, and move (COPY or XCOPY) them all into the new subdirectory, verifying (/V) that they are correct. Do not erase the originals yet. Use ATTRIB +H \TEMP*.* to conceal the copies. (The reason for moving them to a subdirectory called \TEMP instead of simply hiding them where they are now is that having an "empty" \TEMP directory is a frequent situation, unlikely to call attention to itself). Once the files are hidden, use CHKDSK /V or DIR /AH to see if they are actually present. If you are still unsure, unhide one at random, check it, and rehide it. Then erase the original copies from wherever they were. Finally, make duplicates of existing files to write over the files you've just erased or deleted.

Warning: There is no real privacy for anything recorded anywhere, however hidden or encrypted. Even when you have used ERASE or DEL the data are still available until new material has been written over them.

MEM /C

The command MEM analyzes MEMory in various ways. The command has been enhanced in DOS 5 by the addition of the switch /C, for Classify. MEM without any switches reports the computer memory situation in more useful detail than found in the bottom lines of the CHKDSK display. MEM /D (Debug) and MEM /P (Program) are most useful for programmers, as outlined on pp. 253-4 of *The DOS Coursebook.*

MEM /C, however, is helpful to users who want to get the most out of the computer's use of higher memory. More and more tasks need to occupy conventional memory (to 640K RAM). Therefore, any program or device that can be located elsewhere should use upper (or reserved) memory (RAM from 640K to 1MB), extended memory (RAM or onboard memory above 1MB), or expanded memory (added by installing cards with built-on memory). MEM /C provides a picture of current use of memory. Then the user can make further judgments about what should be done to make the use of memory more efficient.

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Summary

This chapter listed the major upgrades or enhancements that make DOS 5 commands more efficient and more useful. The chapter discussion reflects the order in which the earlier versions of these upgrades are treated in *The DOS Coursebook*. Utilities that have been added as wholly new features are the subjects of the following chapters.

Exercise S1-1

In this exercise you will demonstrate your ability to use the existing DOS 4 and the DOS 5 advanced or enhanced features of the following commands: PATH, MD and CD, DIR /S, COPY and/or XCOPY, ATTRIB /H, RD, DIR /A. . . and /O. . . , DELETE and UNDELETE, FORMAT and UNFORMAT.

1. Insert your workdisk in drive A and change the default drive to A. Check the PATH to ensure that the DOS 5 command directory is included. If not, change the path or use unambiguous commands (include the drive and directory where the external command may be found, along with the command itself).
2. Create two new subdirectories, A:\BAT and A:\OLD, on your workdisk. Find out the names of files ending in .BAT or .DOC in all directories on drive C. Make copies of ten of these files onto your workdisk, putting them in the subdirectory named \BAT.
3. Set up five of these .BAT files with A as an attribute and five without. Copy the five files marked A to the subdirectory \OLD. Ensure they are in \OLD.
4. Hide all the files in \OLD. Then erase one of them (this will take some doing, but it can be done). Try to remove the directory \OLD without erasing the rest of its contents (this can't be done).
5. List the files in all workdisk directories and subdirectories in alphabetical order by name and then by extension. List them by size (largest first). List them all, subdirectories last. List subdirectories only.
6. Erase the files remaining in \BAT. Copy the shortest file from \OLD to the root directory of your workdisk.
7. Undelete as many of the files erased from \BAT as you can (depending on the length of the one you copied from \OLD, one or more should be unrecoverable).
8. Back up your workdisk to another floppy disk. Be sure you did the backup correctly by restoring one of the root directory files you backed up. Restore it to the subdirectory \OLD on your workdisk.
9. Format your workdisk (but not unconditionally). After you have formatted it, check the disk to make sure the formatting was done properly. Get the computer to list all hidden files to see if there are any on the disk.
10. Force the computer to bring your workdisk to the exact state it was in before it was formatted. You should not have to use the RESTORE command to get the files from your backup disk, except as an absolute last resort (that, of course, is what file backups are all about).

Using DOSKEY

Chapter 2

TOPICS:

DOSKEY features
Executing DOSKEY
Reexecuting DOSKEY
Creating commands under DOSKEY
Editing commands
Making command files
Understanding macros
Creating macros
Using parameters
Creating a macro to use more than one command
Saving macros in disk files

NEW TERMS AND SYMBOLS:

history, macro, buffer, paragraph, macro symbols ($G, GG, $L, $B, $T, $$, $1 - $9, $*)

REQUIRED MATERIALS:

1. A practice disk
2. Access to DOSKEY

Quick Start

✎ **To install DOSKEY with default settings:**

```
A>DOSKEY
```

- **To replace an installed DOSKEY:**

  ```
  A>DOSKEY /REINSTALL
  ```

- **To install DOSKEY with a specified size command/macro buffer:**

  ```
  A>DOSKEY /BUFSIZE=nnnn
  ```

- **To install (or change from default setting) inserting as edit method:**

  ```
  A>DOSKEY /INSERT
  ```

- **To change the edit method from insert to overstrike:**

  ```
  A>DOSKEY /OVERSTRIKE
  ```

- **To display the remembered commands:**

  ```
  A>DOSKEY /HISTORY or A>DOSKEY /H
  ```

- **To record the history in a file called ORDERS.BAT:**

  ```
  A>DOSKEY /HISTORY > ORDERS.BAT (or)
  A>DOSKEY /H > ORDERS.BAT
  ```

- **To add the current history to an existing ORDERS.BAT file:**

  ```
  A>DOSKEY /HISTORY >> ORDERS.BAT (or)
  A>DOSKEY /H >> ORDERS.BAT
  ```

- **To clear the history buffer**

  Alt-F7

- **To clear the macro buffer**

  Alt-F10

Version Variances: The DOSKEY TSR discussed in this chapter is not available for versions before 5.0

DOSKEY Features

The DOSKEY program is one of the most useful elements of DOS 5. DOSKEY can maintain a file of your DOS commands as they are executed so you don't have to make mistakes by retyping them. In addition, DOSKEY can maintain a file of custom-tailored command sets, each set triggered by a user-selected code called a macro. Best of all, you can access these features any time after DOSKEY has been commanded to set itself into action. Once executed, these DOSKEY functions remain in working memory as a TSR (computer jargon for a program that Terminates its setup and then Stays Resident in memory).

In this chapter you will learn to:

1. Create the DOSKEY program TSR in working memory

2. Create, maintain, and access the DOS command history file
3. Create, record, use, and delete macros of DOS commands

Executing DOSKEY

The basic command to order DOSKEY to make its features memory resident can be entered from the DOS prompt or as a part of AUTOEXEC.BAT:

```
DOSKEY
```

This command will set aside about 3-4K bytes in working memory (RAM, or Random Access Memory), including a 512-byte area (a "buffer") to store all the commands and macros you create. If this buffer is not large enough, you can increase it by specifying a larger size:

```
DOSKEY /BUFSIZE = 1024
```

You can specify any size, but it should be a multiple of 512.

Warning: The greater the size specified, the less working memory is available for other purposes; the smaller the size specified, the more likely you are to run out of room to store commands and macros.

Reexecuting DOSKEY

If you wish to set up a new DOSKEY TSR, enter this command at the DOS prompt:

```
DOSKEY /REINSTALL
```

Warning: REINSTALLing the DOSKEY TSR eliminates the previous TSR's history/macro file. Unless you specify otherwise, the new TSR will have the default settings.

Practice S2-1

1. Use the MEM command to find out how much memory is available. Install DOSKEY with a buffer of 3036 bytes. Use MEM to find out how much memory DOSKEY uses.
2. Reinstall DOSKEY with the default settings. Check memory use with MEM. How much memory is used by the DOSKEY program itself? How much memory is used by the buffer set aside to hold the history and macros?

Creating Commands Under DOSKEY

Once DOSKEY is installed, DOS commands can be entered next to the prompt in the normal manner, pressing [Enter] to execute the command. However, since DOSKEY keeps a record (History) of the commands you have used, that opens up a number of useful options.

To reuse any of the previous commands, use [↑] to recall them in the order of latest use. If you go beyond the command you want to use, the [↓] brings you back down the list. [PgUp] takes you to the first command DOSKEY remembers; [PgDn] to the most recently executed DOS command.

Searching for a particular previous command is made easier because DOSKEY makes it possible to use more function keys. [F1] through [F6] work as they did before setting up DOSKEY. However, [F7] lists all the remembered commands in order, with reference numbers. To select a given command, note the number and press [F9]. Entering the number in the space then provided causes the computer to write the command at the prompt, ready to be modified or executed.

There is an even more useful shortcut. Without knowing the number of the command, simply enter as much of the command as you remember and press [F8]. DOSKEY completes the command as it was most recently used. Should that not be the one you want, pressing [F8] continues the search. Once you have found the command you need it is ready for modification or execution.

Once DOSKEY is operating, you do not have to move your cursor to the end of the command before pressing [Enter], and every command executed is added to the record (History).

Editing Commands

Activating DOSKEY makes it easier to edit a command on the line. Now, [←] and [→] move the cursor back and forth along the line without destroying characters. Normally, entering new characters replaces ("overstrikes") the old ones. However, pressing [Insert] puts you in a new mode, allowing you to push the old characters to the right, making room for the new ones instead of writing over the old. Pressing [Insert] thereafter "toggles" (switches) you back and forth between overstrike and insert modes. It doesn't matter what mode you are in when you execute the command, because the new command line brings you back to the normal overstrike mode. Pressing [Esc] wipes out the whole line.

Figure S2-1 summarizes the special keys used to control the cursor with DOSKEY.

Key	Cursor Moves
[←]	left one character
[→]	right one character
[Ctrl]-[←]	left one word
[Ctrl]-[→]	right one word
[Home]	left to the prompt
[End]	right to the line End

Figure S2-1. Special keys under DOSKEY

Making Command Files

From time to time, you may wish to create a record of the commands used so far (the "command history"). The command

```
DOSKEY /HISTORY > ORDERS.BAT
```

creates a file (ORDERS.BAT) consisting of all the commands in the history. Since it is a batch file, you can enter the command ORDERS and the computer will execute all those commands at any time you wish. This is an interesting way to create batch files. Use >> instead of > to add the command history to an already existing ORDERS.BAT file.

Practice S2-2

1. Find out how much memory is being used and what TSRs (if any) are resident.
2. Reinstall DOSKEY with the default settings.
3. Use ↑ to recall the DOSKEY reinstall command and edit it to display the history so far. Execute the command.
4. Display a numbered list of the commands used so far. Choose the command that displayed the memory analysis and execute it.
5. Send an unnumbered display of the history to create a new COMHIST.BAT file. (Clue: Haven't you already created a command to obtain the unnumbered list of commands? Try editing it.)

Understanding Macros

A macro is a code that leads DOS to a place in memory where a command or a very short series of commands can be found for execution. If there is some command (or series of commands) that gets frequent use, you may find it hard to reenter the command time after time without making an error. A macro simplifies this process.

In a way, a batch file is a macro. One word can execute a batch file, containing a large number of commands. However, a batch file is an inefficient way of saving a short series of commands, say 127 characters or fewer. Such batch files occupy 1040 bytes of disk space, even though the commands they may actually contain occupy only 100 bytes. A true macro would occupy only the actual space required for the command(s).

One of the welcome features of DOSKEY is its ability to set aside a single file where many macros (each limited to 127 characters) can be stored, yet accessed one at a time.

You can create and use macros if DOSKEY is active (resident in memory). Ordinarily, these macros disappear when the DOSKEY use is terminated. However, you can record all the created macros in a single file for use next time DOSKEY is loaded.

You can name the macro anything you want, even the name of a DOS command. However, if you duplicate the name of a DOS command, entering the command next to the DOS prompt will execute

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