

GRiDRecord and GRiDPlayback User's Guide





**GRiDRecord and GRiDPlayback
User's Guide**

May 1984

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About This Book

This manual explains how to use GRiDRecord and GRiDPlayback. To use GRiDRecord and GRiDPlayback, you must have Version 3.1.0 or later of GRiD software.

What are GRiDRecord and GRiDPlayback? GRiDRecord is a program that lets you record your keystrokes in a file, known as a *keystroke file*, which you can later play back using GRiDPlayback. GRiDRecord and GRiDPlayback eliminate repeatedly typing the same keystrokes for routine tasks. For example, you can record all the keystrokes needed to sign on to GRiD Central. The next time you want to sign on to GRiD Central, you have only to select the keystroke file and confirm. You can also use GRiDRecord and GRiDPlayback to give a presentation that you expect to repeat many times. Rather than retrieve the same information each time you give the presentation, you can simply record this information and play it back.

Who Should Use This Guide? This guide is for users who wish to record a keystroke file and play it back or to play back a keystroke file recorded by somebody else. It is also for users wishing to edit a keystroke file or create one from scratch using GRiDWrite as discussed in Chapter 3.

To use GRiDRecord and GRiDPlayback, you should be familiar with your computer's keyboard, menus, forms, and the procedures for creating and managing files. These elements are described in the *Getting Started* tutorial and the *GRiD Management Tools Reference* manual.

Books You May Need You may need to refer to the following books as you use this guide:

- *Getting Started*, for introductory information on the keyboard, menus, and forms of your computer, and on creating and handling files.
- *GRiD Management Tools Reference*, for reference information on the GRiD management tools.
- *GRiDTerm User's Guide*, for information on using GRiDTerm.

Typographical Conventions As you read this guide, you should be aware of the following typographical conventions regarding keycaps and the use of the keyboard.

Keycaps

Keycap labels are in upper case, just as they appear on your keyboard. Thus, when you see the symbol CODE, you should press the key CODE, rather than type the word "CODE" letter by letter.

Multi-Key Operations

Throughout this manual you are instructed to perform multi-key operations, such as "press CODE-RETURN." When you see a hyphen between two keycap names, press the keys in the order in which they appear. Press the first key and, while holding it down, press the next key. Thus, when you read "press CODE-RETURN," you should press the CODE key and, while holding it down, press the RETURN key. When you see hyphens between three keycap names, press the first two keys and, while holding them down, press the last key.

Confirm

You are instructed both in this manual and in prompts that appear on your computer screen to "confirm" that a form is filled out correctly or that you are ready to go on to the next step of the task. The proper response to a "confirm" request is to press CODE-RETURN.

Chapter 1: Using GRiDRecord and GRiDPlayback

This chapter gives you an overview of how to use GRiDRecord and GRiDPlayback. It explains how to record and play back a keystroke file and gives a summary of the commands available.

You can also create or edit a keystroke file directly using GRiDWrite. For more information on this capability, see Chapter 3.

Recording Your Keystrokes Before recording a keystroke file, you should have in mind the steps you are going to record. Below is a sample list of steps you might follow when using GRiDRecord and GRiDPlayback. For specific examples, see Chapter 2.

To Record a Keystroke File

1. Select GRiDRecord from the "Programs" subject and confirm.
2. GRiDRecord prompts you to fill out the File form with the name of the file in which you want to record your keystrokes. Kind is automatically set to Keystrokes.
3. Once you confirm the File form, any keystrokes you type (except CODE-Y) are recorded.

Pressing CODE-Y displays all the GRiDRecord commands. These commands affect your keystroke file during playback as described in the Commands section later in this chapter.

NOTE: If for any reason you wish to cancel your recording session, confirm the Cancel Recording item on the GRiDRecord Commands menu.

4. If you do not want to begin recording your keystrokes right away, press CODE-Y and confirm the Suspend Current Session command. To resume recording, press CODE-Y and confirm the Resume Current Session command.

NOTE: If you are ever unsure whether or not you are recording, press CODE-Y. If you are recording, the message `Recording` is displayed at the bottom of the screen.

```
Commands: Select item and confirm
Version 3.1.0 of GRiDRecord (Recording)
Copyright © 1983, 1984 GRiD Systems Corporation
```

Recording message appears here

5. Enter the keystrokes you want to record as you normally would. Don't worry about making mistakes; GRiDRecord records the corrections you make as well as the mistakes. Later, if you wish, you can use GRiDWrite to delete the mistakes in your keystroke file as explained in Chapter 3.
6. Upon completion, press CODE-Y and confirm the Quit Recording command to exit GRiDRecord or confirm the Start New Recording Session command to begin another recording session.

Follow the steps listed below when you are ready to play back your keystroke file.

Playing Back Your Keystrokes You can play back your keystroke file in two ways:

- From a File form.
- From within another application. If you need to create a graph while working on a worksheet, for example, you can play back the keystroke file to generate a graph.

To Play Back a Keystroke File from the File Form

1. Fill in the File form with the name of the keystroke file you created in the previous steps and confirm.
2. The keystrokes recorded in the file are then executed as though you entered them from the keyboard.

NOTE: If you wish to cancel a playback session before all your recorded keystrokes have been executed, press ESC or CODE-Y and confirm.

To Play Back a Keystroke File from Within Another Application

1. Select GRiDPlayback from the list of programs and confirm.
2. Carry on your ordinary work. When you are ready to play back a file, press CODE-Y and GRiDPlayback prompts you to fill in the File form with the name of the keystroke file you want to play back.
3. To exit GRiDPlayback, press CODE-Y, press CODE-ESC or CODE-Q, and then confirm.

NOTE: If you wish to cancel a playback session before all your recorded keystrokes have been executed, press ESC or CODE-Y and confirm.

The GRiDRecord Commands GRiDRecord offers a number of commands that affect the keystroke file during playback.

These commands let you:

- Alter the speed at which the recorded file is played back.
- Set the length of time the recorded file pauses during playback.
- Cause your recorded file to pause until you type a specified character at the keyboard during playback.
- Display or remove messages and screen images.

The Commands menu (Figure 1-1) appears when you press CODE-Y. This menu shows all the commands available to you. Each command is explained in alphabetical order below.

Figure 1-1. *The Commands Menu*



NOTE: Each GRiDRecord command in the Commands menu has a corresponding representation in the keystroke file. For more information, see Chapter 3.

Cancel Recording

The Cancel Recording command stops the recording and allows you to exit GRiDRecord, discarding any keystrokes you have recorded.

Change Speed of Playback

The Change Speed of Playback command changes the speed at which keystroke files are played back. For example, you can set the Change Speed of Playback to “slow” when giving a presentation so your audience will have more time to view the material. Also, when communicating with some host systems, you may need to slow down the rate at which the keystroke file is played back to ensure that the data is received properly.

The recorded file is initially set to play back at “fast” speed. The choices are Thousandths of a Second (one to thirty-two thousand), Slow (one-half second delay), Medium (one-fifth second delay), or Fast (no delay).

Selecting the Change Speed of Playback command causes the SPEED command to be inserted into the keystroke file (see Chapter 3).

Clear Screen

The Clear Screen command clears the screen. You can use this command after you have displayed a screen image that you now want cleared from the screen. You may want to execute the Update Screen command (see description below) after issuing this command to restore any forms or messages to the screen after it has been cleared.

Selecting the Clear Screen command causes the CLEARSCREEN command to be inserted into the keystroke file (see Chapter 3).

Delay for Period of Time

The Delay for Period of Time command causes your keystroke file to pause for a specified number of seconds during playback. While your keystroke file is pausing, typing characters at the keyboard has no effect. The initial setting is 10 seconds, or you can erase the current number and type a number between 1 and 60.

Selecting the Delay for Period of Time command causes the DELAY command to be inserted into the keystroke file (see Chapter 3).

Display a Screen Image

The Display a Screen Image command lets you display a screen image. You can use this command, for example, to display a graph or worksheet on the screen during a presentation. When confirmed, this command prompts you to fill in the File form with the name of the file that contains the screen image you want shown on the screen.

Selecting the Display a Screen Image command causes the SCREENIMAGE command to be inserted into the keystroke file (see Chapter 3).

Display Message on Screen

The Display Message on Screen command lets you enter messages that appear on the bottom of your screen during playback. For example, you may want to display a message describing the tasks your keystroke file is performing at a particular moment during playback. After you enter your message and confirm, it appears centered on the screen. You can enter multiple messages. Each message appears above the preceding message (if any) on your screen. Depending on the number of messages you display, your messages may cover up GRiD and other application messages as well as the text

in forms or menus. You can remove your messages from the screen with the Remove Messages from Screen command (see below).

See the Sample Recording Sessions in Chapter 2 for examples showing how to use this command.

Selecting the Display Message on Screen command causes the STACKMSG command to be inserted into the keystroke file (see Chapter 3).

End Current Recording Session

The End Current Recording Session command ends the current recording session, saving any keystrokes recorded, but does not exit you from GRiDRecord. After confirming this command, the message No Record File appears at the bottom of the GRiDRecord Commands menu. If you want to begin another recording session, select the Start New Recording Session command and confirm. You will be prompted to specify the name of the keystroke file into which you want to record.

Insert Comment into Keystroke File

The Insert Comment into Keystroke File command lets you insert comments into your keystroke file. The comments don't appear on the screen during playback, but are useful if you later edit the keystroke file using GRiDWrite. For example, as you are recording a file, you can insert comments to describe the purpose of the keystrokes you are recording. Also, if during a recording session you mistakenly record keystrokes which you don't want in the file, you can insert a comment as a reminder to correct the error when you later edit it.

Selecting the Insert Comment into Keystroke File command causes a semicolon (;) to be inserted into the keystroke file (see Chapter 3).

Pause Until Character Typed

The Pause Until Character Typed command causes your keystroke file to pause until you type a specified character at the keyboard.

After confirming this command, GRiDRecord stops recording your keystrokes and displays a form asking you to specify the character that will terminate the pause.

Each item in the form is described below:

- | | |
|-----------|---|
| CODE key | Determines whether or not the CODE key is required with the terminating character.

The initial setting is No. Choices are Yes, No. |
| Character | Lets you specify the character that terminates the pause.
The alternative is to let any character terminate the pause. |

The initial setting is Type in Character. Choices are Type in Character, Any Character.

NOTE: If you want to specify the RETURN key as your terminating character, press CTRL-M. To specify a TAB, press CTRL-I.

After filling in this form and confirming it, you must type the terminating character you have specified to resume recording. GRiDRecord will not continue recording until you have typed your specified character. To verify whether you are recording, always check the message appearing at the bottom of the GRiDRecord Commands menu. If you are recording, the message Recording appears on the screen.

The Pause Until Character Typed command is useful, for example, during any log-on procedure which requires typing a password. You can have your keystroke file pause to let you type in a password and resume again when you type the character specified to terminate the pause. You can also use the Display Message on Screen command (see description above) to display a message informing the user of the specified character which terminates the pause.

See the Sample Recording Sessions in Chapter 2 for examples showing how to use this command.

Selecting the Pause Until Character Typed command causes the PAUSE command to be inserted into the keystroke file (see Chapter 3).

Quit Recording

The Quit Recording command causes you to exit GRiDRecord and saves any keystrokes recorded.

Remove Messages from Screen

The Remove Messages from Screen command removes all messages you displayed with the Display Message on Screen command. You may want to execute the Update Screen command (see description below) after issuing this command. See the Sample Recording Sessions in Chapter 2 for examples showing how to use this command.

Selecting the Remove Messages from Screen command causes the CLEARMSG command to be inserted into the keystroke file (see Chapter 3).

Resume Current Session

The Resume Current Session command resumes recording the keystroke file you temporarily stopped recording with the Suspend Current Session command.

Start New Recording Session

The Start New Recording Session command ends the current recording session and asks you to choose a new keystroke file into which keystrokes will be recorded. This command eliminates having to exit GRiDRecord and selecting it again each time you want to begin a new recording session.

Suspend Current Session

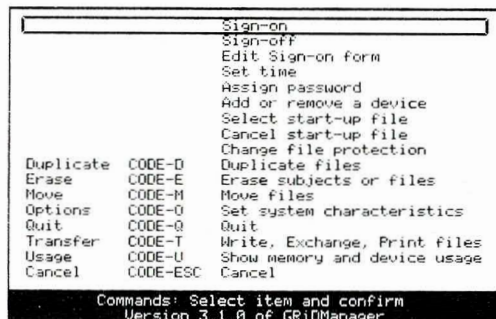
The Suspend Current Session command suspends the current recording session and displays the message *Suspended* at the bottom of the GRiDRecord Commands menu. Any keystrokes subsequently typed are not recorded. For example, you may wish to suspend recording temporarily to practice the keystrokes you intend to record. When you are ready to resume recording, select the Resume Current Session command and confirm.

Update Screen

The Update Screen command redisplay the screen, restoring any missing application messages or text. Use this command after you have displayed a message and then removed it from the screen. When you display messages they may cover up GRiD and other application messages that normally appear on the screen (see Display Message on Screen command). When you remove your messages, a blank area appears on the screen where your messages were. To restore the missing GRiD and application messages, use the Update Screen command.

Figure 1-2 shows you the results of using the Update Screen command.

Figure 1-2. *Using the Update Screen Command*



The GRiDManager Commands menu is displayed on your screen.



```

+-----+
| Sign-on |
+-----+
| Sign-off |
| Edit Sign-on form |
| Set time |
| Assign password |
| Add or remove a device |
| Select start-up file |
| Cancel start-up file |
| Change file protection |
| Duplicate files |
| Duplicate CODE-D |
| Erase CODE-E |
| Erase subjects or files |
| Move CODE-M |
| Move files |
| Options CODE-O |
| Set system characteristics |
| Quit CODE-Q |
| Quit |
| Transfer CODE-T |
| Write, Exchange, Print files |
| Usage CODE-U |
| Show memory and device usage |
| Cancel CODE-ESC |
| Cancel |
+-----+
| Enter password, then CODE-Z. |
| This file logs you on to GRiD Central. |
+-----+

```

Messages are displayed with the Display Message on Screen command.

```

+-----+
| Sign-on |
+-----+
| Sign-off |
| Edit Sign-on form |
| Set time |
| Assign password |
| Add or remove a device |
| Select start-up file |
| Cancel start-up file |
| Change file protection |
| Duplicate files |
| Duplicate CODE-D |
| Erase CODE-E |
| Erase subjects or files |
| Move CODE-M |
| Move files |
| Options CODE-O |
| Set system characteristics |
| Quit CODE-Q |
| Quit |
| Transfer CODE-T |
| Write, Exchange, Print files |
| Usage CODE-U |
| Show memory and device usage |
| Cancel CODE-ESC |
| Cancel |
+-----+

```

Messages are removed with the Remove Messages from Screen command.

```

+-----+
| Sign-on |
+-----+
| Sign-off |
| Edit Sign-on form |
| Set time |
| Assign password |
| Add or remove a device |
| Select start-up file |
| Cancel start-up file |
| Change file protection |
| Duplicate files |
| Duplicate CODE-D |
| Erase CODE-E |
| Erase subjects or files |
| Move CODE-M |
| Move files |
| Options CODE-O |
| Set system characteristics |
| Quit CODE-Q |
| Quit |
| Transfer CODE-T |
| Write, Exchange, Print files |
| Usage CODE-U |
| Show memory and device usage |
| Cancel CODE-ESC |
| Cancel |
+-----+
| Commands: Select item and confirm |
| Version 3.1.0 of GRiDManager |
+-----+

```

The GRiDManager messages are restored after using the Update Screen command.

You can also use the Update Screen command to restore forms or messages after you have cleared the screen with the Clear Screen command.

Selecting the Update Screen command causes the UPDATESCREEN command to be inserted into the keystroke file (see Chapter 3).

Chapter 2: Practical Uses of GRiDRecord and GRiDPlayback

This chapter demonstrates practical uses of GRiDRecord and GRiDPlayback through the use of short scenarios. It also shows you two sample recording sessions. The first example logs you on to GRiD Central. The second example retrieves and graphs data from the Dow Jones News/Retrieval[®] Service (DJNS).

Scenarios The following scenarios describe a few ways you might use GRiD-Record and GRiDPlayback. These scenarios are meant to suggest the many uses of GRiDRecord and GRiDPlayback; the possible applications are innumerable, limited only by your needs and creativity.

Signing On to GRiD Central

You frequently need to sign on to GRiD Central. By using GRiDRecord you could record a keystroke file that selects GRiDManager, fills out all items of the Sign-on form except the Password (for security reasons you would not want to record your password), pauses to let you type in your password during playback, and then fills out the next Sign-on form which connects you to GRiD Central. To sign on to GRiD Central the next time, you could play back your recorded keystroke file. During playback your keystroke file will pause to let you type in your password and then continue until you are signed on to GRiD Central.

NOTE: You can use this same procedure for logging on to any external file server device or other computer system.

Backing Up Your Files

You need to back up your files to floppy diskettes from the permanent storage device where they are kept. You could record a keystroke file that uses the Duplicate command in GRiDManager to duplicate the files from a particular subject on the storage device onto your floppy diskette. You could have GRiDManager repeat this process for as many subjects as you need backed up. The next time you wanted to back up your files, you would insert your back-up diskette into your floppy drive and then play back your keystroke file.

Loading Software Into Your Computer

You want to load your computer with only the applications you plan to use and keep your various software configurations on floppy diskettes.

Let's say you want to load your computer with a diskette containing GRiD-Plan, GRiDPlot, and GRiDWrite. At present it is loaded with GRiDFile, GRiDTerm, and GRiDWrite. You could record a keystroke file that first pauses to let you specify the applications you want to erase (using the Erase command in GRiDManager) from your computer. In this case you would erase GRiDFile and GRiDTerm. After erasing your files, the keystroke file would then use the Duplicate command to copy the applications from your floppy diskette onto your computer. Each time you wanted to change the configuration of your computer you could insert the diskette containing the desired applications and then play back your keystroke file. During playback your keystroke file will prompt you to erase any unneeded files and then proceed to copy the applications onto your computer.

Updating Worksheets

You have several worksheets that must be updated and printed each week. You could record a keystroke file that retrieves the specified worksheet, pauses for you to enter the new data, recalculates the data, and then prints the worksheet. To update your worksheets the next time, you could play back your keystroke file. During playback the recorded keystroke file will pause to let you enter the new data. Next, the calculations are made and the updated worksheet is printed out.

Sample Recording Sessions The two sample recording sessions are described in the sections that follow. If you decide to record the actual steps listed, you should read them over first. It is a good idea, before recording any keystroke file, to review the steps you are going to record. You may even want to run through a practice session. If you make mistakes once you have started recording, you have several options.

You can

- Press CODE-Y and confirm the Cancel Recording command. This will exit you from GRiDRecord, erasing any keystrokes you have recorded so far. You can then start the recording session over.
- Press CODE-Y and confirm the Suspend Current Session command to temporarily suspend recording. You can then practice the keystrokes you intend to record. When you are ready to record, confirm the Resume Current Session command.
- Correct your mistakes as you go along. GRiDRecord will record your corrections as well as your mistakes. You can later use GRiDWrite to delete your mistakes as explained in Chapter 3.

Example 1: Logging On to GRiD Central

The following example explains how to record and play back a keystroke file that uses GRiDManager to log on to GRiD Central.

To Record Your Keystrokes

1. Select GRiDRecord from the “Programs” subject and confirm.
2. GRiDRecord prompts you to fill out the File form with the name of the file to which you want to record your keystrokes. Kind is automatically set to Keystrokes.

Once you confirm the File form, any keystrokes you type (except CODE-Y) are recorded.

3. Select GRiDManager from the “Programs” subject and confirm.
4. Select the Sign-on item and confirm.
5. Fill in all the items of the Sign-on form except the Password.

NOTE: For security reasons, do not record your password into your keystroke file; otherwise, anyone obtaining your file could have access to your GRiD Central account. Instead, using the Pause Until Character Typed command, delay the keystroke file recording while you type in your password and then resume when you press the terminating character you have selected.

6. Before pausing you first need to display a message on the screen that asks the user to type a password and then press the terminating character. If, for example, the terminating character you’ve chosen is CODE-Z, press CODE-Y and confirm the Display Message on Screen command. Type the message Enter password, then CODE-Z and confirm.

Figure 2-1. Form Specifying Password Message

Connection type	Phonelink
Company	save realtors
Message	Enter password, then CODE-Z
Enter message to display during playback	



- To specify the terminating character, press CODE-Y again and confirm the Pause Until Character Typed command. To set the terminating character to CODE-Z, fill out the form as shown in Figure 2-2 and confirm.

Figure 2-2. Form Specifying CODE-Z Terminating Character

```

Connection type: Phonelink
Type in character: Any character
Code key: Yes
Character: Z
Enter terminating character
  
```

- Now type in your password while recording pauses.
- Then press CODE-Z to resume recording and confirm.
- You no longer need to display the password message. Press CODE-Y and confirm the Remove Messages from Screen command to remove your message from the screen.
To restore any forms or messages to the screen also confirm the Update Screen command.
- Fill in the next Sign-on form with the telephone number and other appropriate items, then confirm.
- Once you are logged on to GRiD Central stop recording. Press CODE-Y and confirm the Quit Recording command to exit GRiDRecord.

You are ready to play back your file.

To Play Back Your Keystroke File

- Fill in the File form with the title of your keystroke file.
- Once you confirm the File form, the computer will play back your recorded keystrokes.
- The computer will pause to let you type in your password.
- After you enter your password and press CODE-Z you will be logged on to GRiD Central.

Example 2: Graphing Data Accessed from Dow Jones

The following example explains how to record and play back a keystroke file that uses GRiDTerm to log on to the Dow Jones News/Retrieval Service (DJNS), enters the AT&T Historical Quotes Database[®], downloads some data, reformats it using GRiDReformat, and then graphs it using GRiDPlot.

Before using this example you should know how to

- Log on to a host system using GRiDTerm and use soft keys. Both of these procedures are discussed in Chapter 1 of the *GRiDTerm User's Guide*.
- Reformat data using GRiDReformat. See Chapter 6 of the *GRiDTerm User's Guide*.
- Plot data using GRiDPlot. See the GRiDPlot Chapter in the *GRiD Management Tools Reference* manual.

The example assumes the following files have been created beforehand:

- Terminal description file, which includes two soft-key definitions. One soft-key definition is used to log on to DJNS and the other is used to retrieve the historical quotes. See Appendix A for a description of these soft keys.
- GRiDReformat file, for formatting the historical quotes retrieved from DJNS into a format suitable for GRiDPlot. See Appendix B for a description of the GRiDReformat file.

To Record Your Keystrokes

1. Select GRiDRecord from the "Programs" subject and confirm.
2. GRiDRecord prompts you to fill out the File form with the name of the file in which you want to record your keystrokes. Kind is automatically set to Keystrokes.

Once you confirm the File form, any keystrokes you type (except CODE-Y) are recorded.

3. To log on to DJNS, select your terminal description file with the proper settings and confirm.
4. After confirming, immediately press the soft key which logs you on to DJNS.
5. GRiDTerm prompts you to enter your password.

You need to have your keystroke file pause while you type your password so that the password is not recorded; resume when you press the terminating character you have selected.

15. To give GRiDTerm time to disconnect, pause for about 5 seconds. Press CODE-Y and confirm the Delay for Period of Time command. Enter 5 to pause for five seconds and confirm.
16. The data from DJNS must be reformatted to make it suitable for GRiD-Plot. Press CODE-T, confirm the Exchange for Another File command and retrieve the GRiDReformat file.
17. To reformat your file, press CODE-T and confirm the item Reformat a Data File on the Transfer menu. Specify your input file as the text file created in Step 13. Specify a file with a Kind of Graph for your output file. Also, fill in the File form's Next Action item to Get New File and Its Application to transfer you to the graph file you have just created.

After the transfer has occurred, the table containing your data will be displayed as shown in Figure 2-4.

Figure 2-4. Data in GRiDPlot Table

DATE	HIGH	LOW	CLOSE	VOL(100/
02/22/84	16.88	16.50	16.88	20379.00
02/23/84	16.88	16.50	16.88	15050.00
02/24/84	17.25	16.88	17.25	16170.00
02/27/84	17.38	17.00	17.25	19097.00
02/28/84	17.25	16.50	16.75	20084.00
02/29/84	17.25	16.63	16.88	16800.00
03/01/84	17.25	16.88	17.13	17674.00
03/02/84	17.38	17.00	17.38	19589.00
03/05/84	17.75	17.25	17.75	20309.00
03/06/84	17.75	16.88	17.00	34712.00
03/07/84	17.13	16.63	17.00	19909.00
03/08/84	17.25	17.00	17.13	13602.00

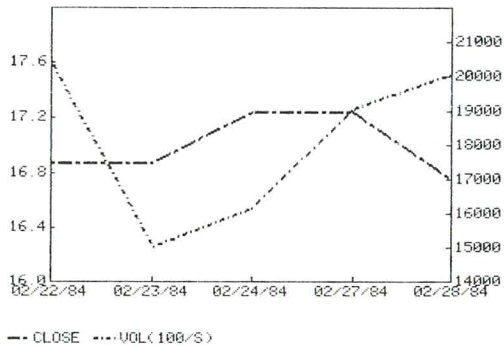
Version 3.1.0 of GRiDPlot
Copyright © 1982, 1983, 1984
GRiD Systems Corporation

18. Now display the data in the columns labeled "CLOSE" and "VOL(100/" as a line graph as shown in Figure 2-3.

This may consist of

- Setting the Kind of Graph item in the Options form to "Line Graph" and the Graph Orientation item to "Transposed."
- Setting the Line & Bar axis item on the Properties form to "Right Axis."



Figure 2-5. *Line Graph of Data*

19. To stop recording, press CODE-Y and confirm the Quit Recording command to exit GRiDRecord.

You are ready to play back your file.

To Play Back Your Keystroke File

1. Fill in the File form with the title of your keystroke file.
2. Once you confirm the File form, the computer will play back your recorded keystrokes.
3. At the end of playback, you should see the line graph on your screen.

After recording this example keystroke file and playing it back, you may decide you want to modify it. Perhaps you want the file to perform additional functions. You may want to add messages on the screen, change the playback speed for different portions of your file, or correct mistakes made while recording. You can modify your file using GRiDWrite. For details, see the next chapter.

Chapter 3: Modifying or Creating Keystroke Files

Keystrokes files are made up of keystroke file commands. This chapter describes each of the keystroke file commands in detail. You can use this information either to modify an existing keystroke file that you recorded earlier or to create an entirely new file from scratch.

Modifying or Creating a Keystroke File After creating a keystroke file you may want to modify it. Below is a sample list of steps you should follow when modifying your file.

▶ To Modify a Keystroke File

1. Select any text file or the GRiDWrite program directly.
2. Press CODE-T and confirm the Exchange for Another File command to retrieve your keystroke file. When filling in the File form set the Next Action item to Get New File Only.
3. Make the changes to your keystroke file.
4. Press CODE-Q to save your changes and exit the file, or, if you want to play back your keystroke file with the new changes, press CODE-T and exchange for the file.

Once you become familiar with the format of keystroke files, it is possible to create keystroke files from GRiDWrite, eliminating the need to record them. More often than creating a whole keystroke file using GRiDWrite, you will want to create portions of a file or include parts of an existing file in another. If you choose to create a keystroke file in GRiDWrite, remember that you must write the data to a file with Kind set to Keystrokes.

A Sample Keystroke File Chapter 2 provided an example of a keystroke file that accessed Dow Jones, retrieved data, and graphed it (see “Example 2: Graphing Data Accessed from Dow Jones”). Figure 3-1 shows how the data from this keystroke file appears when read by GRiDWrite. Comments have been added to describe the function of various sections in the file. The comments are those lines that are preceded by a semicolon (;). The semicolon appearing on a line by itself separates the comment from the commands that follow, making the comments easier to read. See the COMMENT command below for further details.

NOTE: Each command selected from the GRiDRecord Commands menu has a corresponding representation in a text file. The commands are represented by *keystroke file commands* as shown in Table 3-1.

Table 3-1. *GRiDRecord and Keystroke File Commands*

GRiDRecord Commands	Keystroke File Commands
Change Speed of Playback	SPEED
Clear Screen	CLEARSCREEN
Delay For Period of Time	DELAY
Display a Screen Image	SCREENIMAGE
Display Message on Screen	STACKMSG
Insert Comment into Keystroke File	COMMENT (;)
Pause Until Character Typed	PAUSE
Remove Messages from Screen	CLEARMSG
Update Screen	UPDATESCREEN
*	FILEFORM
**	ADDKEYS

*The FILEFORM command does not appear on the GRiDRecord Commands menu. It is used when specifying the contents of the File form. For more details, see FILEFORM command below.

**The ADDKEYS command does not appear on the GRiDRecord Commands menu. It is used when inserting text or one of the keyboard function keys into your keystroke file (see Table 3-2). For more details, see ADDKEYS command below.

The Format of a Keystroke File Command As shown in Figure 3-1, every keystroke file command appears in uppercase letters and is on a line by itself starting at the left margin; the command can be followed by a group of characters known as a *parameter*.

The following rules apply to the use of parameters:

- Commands and parameters must be separated by one or more spaces.
- Some parameters must be enclosed in quotation marks. Note carefully the format given for each command.
- Parameters can contain text, numbers, *pathnames*, or characters representing the keyboard function keys.

A *pathname* specifies the contents of the File form. See the FILEFORM command below for an example of a pathname. Whenever you press one of the keyboard function keys, such as CODE-RETURN, GRiDRecord inserts

a character into the keystroke file which represents that function key. The characters representing the keyboard function keys are listed in Table 3-2.

Table 3-2. *Characters Representing the Keyboard Function Keys*

Keyboard Function Key	Resulting Character in Keystroke File*
	!!
\	\\
RETURN	!r
CODE-RETURN (Confirm)	!.
CTRL-key	\key
ESC	E _c
CODE-A through CODE-Z	!a-!z
CODE-0 through CODE-9	!0-!9
CODE-SHIFT-0	!)
CODE-SHIFT-1	!!
CODE-SHIFT-2	!@
CODE-SHIFT-3	!#
CODE-SHIFT-4	!\$
CODE-SHIFT-5	!%
CODE-SHIFT-6	!^
CODE-SHIFT-7	!&
CODE-SHIFT-8	!*
CODE-SHIFT-9	!(
CODE-+	!+
CODE--	!-
CODE-=	!=
CODE-?	!?
↓	!D
↑	!E
←	!F
→	!G
SHIFT-↓	!N
SHIFT-↑	!O
SHIFT-←	!P
SHIFT-→	!Q
CODE-↓	!R
CODE-↑	!S
CODE-←	!T
CODE-→	!U
CODE-SHIFT-↓	!V
CODE-SHIFT-↑	!W
CODE-SHIFT-←	!X
CODE-SHIFT-→	!Y

* To produce the vertical bar (|) character, press CODE-SHIFT-;. To produce \, press CODE-SHIFT-'. Press CTRL-ESC to produce E_c.

The Keystroke File Commands The keystroke file commands are described in alphabetical order below. Under each command is given its function, its correct format, and an example taken from Figure 3-1 of how to use it.

ADDKEYS

The ADDKEYS command lets you insert text or one of the keyboard function keys in your keystroke file. The format of the command is as follows:

```
ADDKEYS "characters"
```

where *characters* is any one of the keyboard function characters shown in Table 3-2 or any one of the alphabetic or numeric keys on your keyboard. You can have up to 64 characters for every ADDKEYS command in your keystroke file.

For example, referring to Table 3-2, you can see that the characters to represent a CODE-RETURN (confirm) are "!. ". The following command then is used to insert a confirm in your file.

```
ADDKEYS "!. "
```

Note that sometimes you may need to insert the confirm character twice to confirm creating a new file or overwriting another file. In the following example the second confirm is used to create a new file.

```
FILEFORM "`Bubble Memory`Stock Quotes`AT&T`Text`01"  
ADDKEYS "!. !. "
```

As another example, the following command confirms the Write to a File command from the Transfer menu.

```
ADDKEYS "!t!,!,!,!. "
```

Each character is described below:

- | | |
|---------|--|
| !t | Displays the Transfer Menu. |
| !,!,!,! | The RETURN key is pressed three times until the outline surrounds the Write to a File command. |
| !. | The Write to a File command is confirmed. |

NOTE: The lowercase letter t in the characters !t is important. As shown in Table 3-2, the characters !T designate CODE-←.

When editing the ADDKEYS command you may want to print it out as well as view it on the screen. Note that many control characters (such as L_F for CTRL-J) will appear on your screen but are not printable. Other characters when printed may be different from the way they appear on the screen.

CLEARMSG

The CLEARMSG command removes all messages you displayed on the screen with the STACKMSG command. The format of the command is as follows:

```
CLEARMSG
```

In the following example, the CLEARMSG command removes the message that appears previously in the file.

```
STACKMSG "Enter password, then CODE-R"  
PAUSE "!"  
CLEARMSG
```

After clearing your messages you may want to use the UPDATESCREEN command (see description below).

CLEARSCREEN

The CLEARSCREEN command clears the screen. You can use it to clear a screen image that you no longer want displayed on the screen. The format of the command is as follows:

```
CLEARSCREEN
```

After clearing your screen you may want to use the UPDATESCREEN command (see description below).

COMMENT (;)

The COMMENT command lets you insert a comment into your keystroke file. A comment is a note in the keystroke file that you don't want to appear on the screen during playback. You could include a comment to describe the function of various sections of your file. The COMMENT command is designated by the semicolon (;). The format of the command is as follows:

```
;text
```

where *text* is the comment.

NOTE: You need a semicolon followed by a space to begin every comment in your keystroke file.

In the following example taken from Figure 3-1, the comment describes the functions of the FILEFORM and ADDKEYS commands.

```
;Gets GRiDTerm terminal description file.  
;  
FILEFORM "`Bubble Memory`Stock Quotes`Dow Jones`Terminal`21"  
ADDKEYS "!. "
```

See Figure 3-1 for other examples of comments.

DELAY

The DELAY command causes the keystroke file to pause during playback. The format of the command is as follows:

DELAY *number*

where *number* is the number of seconds the keystroke file is to pause. You can type a number between 1 and 60.

In the following command,

```
DELAY 5
```

the keystroke file pauses five seconds upon encountering the command. Pressing any keys on the keyboard while your keystroke file is pausing will have no effect on your computer.

FILEFORM

The FILEFORM command is used when filling out the File form. When you fill out a File form while recording, the final contents of the File form are recorded, not the actual keystrokes. If the actual keystrokes were recorded and you rearranged your files, these same keystrokes would not access the correct file.

For example, suppose you needed to press the ↓ key once to retrieve the second file in a subject. You later add another file to your subject. This file appears before the file you want to access. To retrieve the desired file you would need to press the ↓ key twice. If your actual keystrokes were recorded when specifying your file, they would not access the correct file when you later played them back.

The format of the command is as follows:

```
FILEFORM "pathname"
```

where *pathname* is in the format

```
`Device`Subject`Title^Kind^xy
```

NOTE: To enter the backquote character (`), type CODE-'. To enter the tilde (~), press CODE-~.

The *x* in the pathname is a number that represents the setting of the Next Action item; the *y* represents the setting of the Save Changes item.

Table 3-3 shows the settings of these items and their corresponding representation.

Table 3-3. *Settings for File Form Next Action and Save Changes Items*

Item	0	1	2
Next action	Keep Current File	Get New File Only	Get New File and its Application
Save Changes	Before Getting New File	No	

For example, the 21 appearing after the following pathname specifies that the Next Action item is set to Get New File and its Application and the Save Changes item is set to No.

```
FILEFORM "`Bubble Memory`Stock Quotes`DowJones`Terminal`21"
ADDKEYS "!."
```

Note that the ADDKEYS command is used to confirm the File form pathname.

In the next example, the 01 appearing after the pathname specifies that the Next Action item is set to Keep Current File and the Save Changes item is set to No.

```
FILEFORM "`Bubble Memory`Stock Quotes`AT&T`Text`01"
ADDKEYS "!."
```

NOTE: All pathnames require the *xy* parameter. If you are using GRiDWrite rather than GRiDRecord to insert the FILEFORM command into your keystroke file and the Next Action and Save Changes items do not apply, you can insert any two-character combination shown in Table 3-3. GRiDPlayback will ignore these characters.

PAUSE

The PAUSE command causes your keystroke file to pause until you type a terminating character at the keyboard. To specify a character, the format is as follows:

```
PAUSE "character"
```

where *character* is a character of your choice.

To specify CODE-R as the terminating character, the format is

```
PAUSE "!r"
```


NOTE: If you want to specify the RETURN key as your terminating character, press CTRL-M. To specify the TAB key, press CTRL-I.

The following format specifies any character as the terminating character:

```
PAUSE ""
```

SCREENIMAGE

The SCREENIMAGE command lets you display a screen image. The format of the command is as follows:

```
SCREENIMAGE "pathname"
```

where *pathname* specifies the name of the screen-image file. See the pathname description under the FILEFORM command for information on how to specify a pathname.

When specifying a screen-image file, screen image appears as one word as shown in the following pathname

```
SCREENIMAGE "`HardDisk`Graphs`Stock`Screenimage`21"
```

SPEED

The SPEED command changes the speed at which keystroke files are played back. The file is initially set to play back at a fast speed. The format of the command is as follows:

```
SPEED "text"
```

where *text* represents Slow (one-half second delay), Medium (one-fifth second delay) or Fast (no delay). An alternative format of the command is

```
SPEED "number"
```

where *number* represents the speed ranging from 1 to 32,000 (in thousandths of a second).

STACKMSG

The STACKMSG command lets you enter messages that are displayed during playback. You can specify up to 50 characters in each message. Your messages appear centered on the bottom of the screen. The format of the command is as follows:

```
STACKMSG "text"
```

where *text* is the message you want to display. If you specify more than one message, each subsequent message appears above the preceding message on your screen.

For example, the following messages

```
STACKMSG "from Dow Jones and graphs the data."
```

```
STACKMSG "This file accesses historical quotes"
```

appear on the screen as:

```
This file accesses historical quotes
```

```
from Dow Jones and graphs the data.
```

UPDATESCREEN

The UPDATESCREEN command redisplay the screen and restores any missing application messages or text. Use this command after removing messages you have displayed on the screen. When you display your own messages they may cover up GRiD and other application messages, and possibly the text in forms and menus. When you remove your messages a blank area will appear on the screen where your messages were. To restore the missing text, use the UPDATESCREEN command.

The format of the command is as follows:

```
UPDATESCREEN
```

In the following example, the UPDATESCREEN command restores missing text or messages to the screen after removing the password message with the CLEARMSG command.

```
STACKMSG "Enter password, then CODE-R"
```

```
PAUSE "!r"
```

```
CLEARMSG
```

```
UPDATESCREEN
```

You may also wish to use the UPDATESCREEN command to restore any forms or messages after you have cleared the screen with the CLEARSCREEN command.

- ▣ **CAUTION:** You should note carefully where you insert the UPDATESCREEN command. If you inserted the command following the FILEFORM command, it would empty the contents of the File form.

Appendix A: Soft Key Definitions

This appendix contains the soft-key definitions for the two soft keys appearing in the example “Graphing Data Accessed from Dow Jones” in Chapter 2. In this example one soft key was used to log on to Dow Jones and the other was used to access the AT&T Historical Quotes Database. If you need further information on defining soft keys, see Chapter 4 in the *GRiDTerm User's Guide*.

Soft Keys The soft-key definition to log on to Dow Jones is

```
!xx!a!log in: !dow1;;cr!@@@@@@@!
```

The soft-key definition to retrieve data from the AT&T Historical Quotes Data Base is

```
//HQcr!QUERY!T P1cr
```

If you wanted, you could replace the T (for AT&T) with the symbol for any other stock.

NOTE: To produce the characters ^{cr}1^f in the soft-key definition, press CTRL-M. To produce ^{cr}, press CTRL-M and then press BACKSPACE to erase the extra characters.



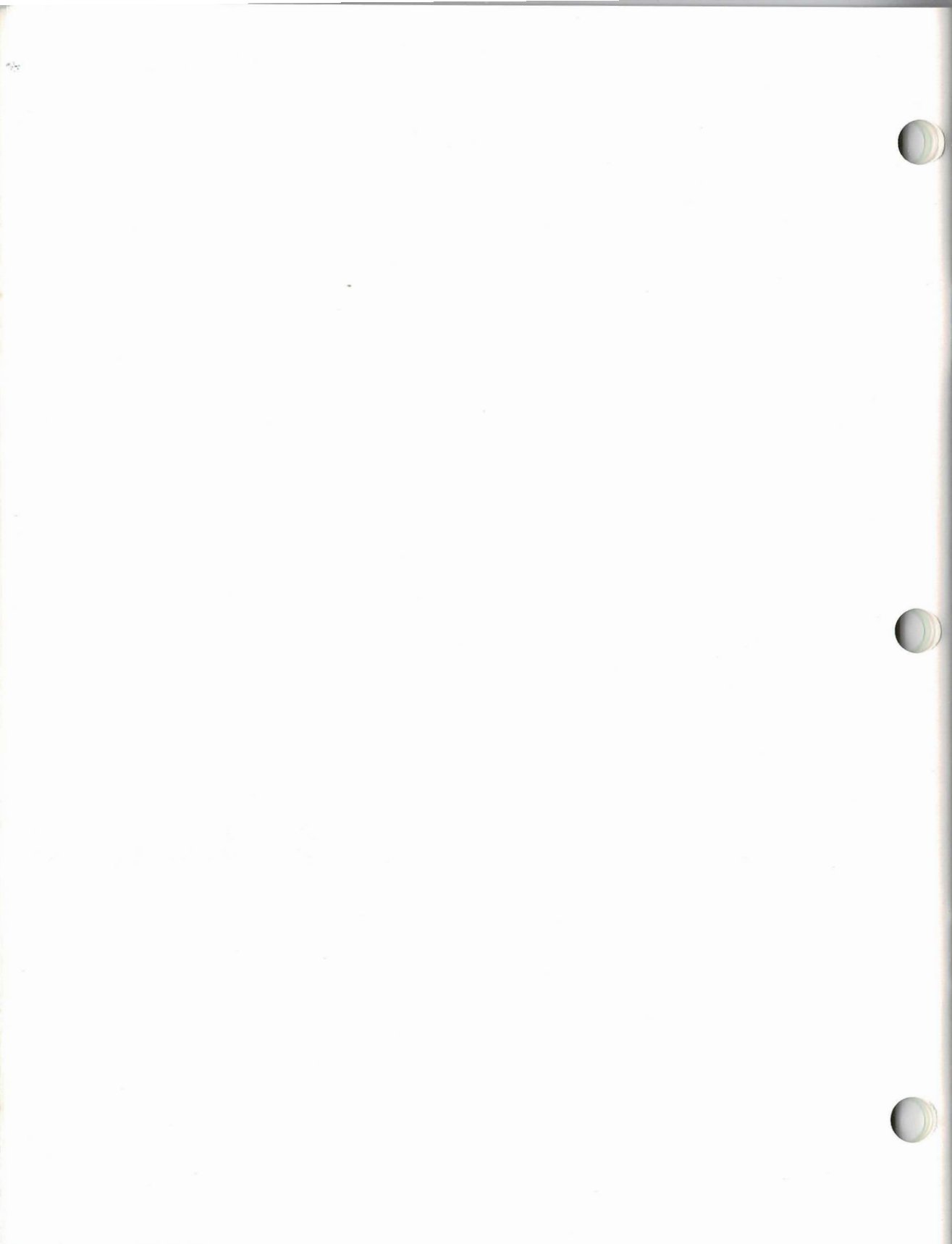
Appendix B: Setting Up the GRiDReformat File

This appendix describes how to set up the GRiDReformat file used in the example “Graphing Data Accessed from Dow Jones” in Chapter 2. If you need further information on creating and using a GRiDReformat file, see Chapter 6 in the *GRiDTerm User’s Guide*.

Filling In the Options Form To reformat the data accessed from Dow Jones, fill in the Options form with the settings shown in Figure B-1. If the form is set with the initial settings, the only items you need to change are the Start Formatting item and the Data: Discard Non-Data Rows item. Set these as shown in Figure B-1.

Figure B-1. *Options Form with Correct Setting*

Keyword From beginning	
Start formatting	UDL(100%)
End formatting	At the end
Labels: Number of rows	1
Discard rows	No
Number of cols	1
Discard cols	No
Data: Number of rows	To the end
Discard non-data rows	Yes
Number of cols	To the end
Discard non-data cols	No
Remove special characters	None
Options: Fill in form and confirm	



Appendix C: Error Messages

This appendix explains the error messages that you may receive while using GRiDRecord.

11100: No file has been selected for recording

What happened A command is issued on the GRiDRecord Commands menu when a keystroke file has not been selected.

What to do Confirm the Start New Recording Session command to specify a keystroke file for recording.

11101: Speed value must be within 1 to 32000

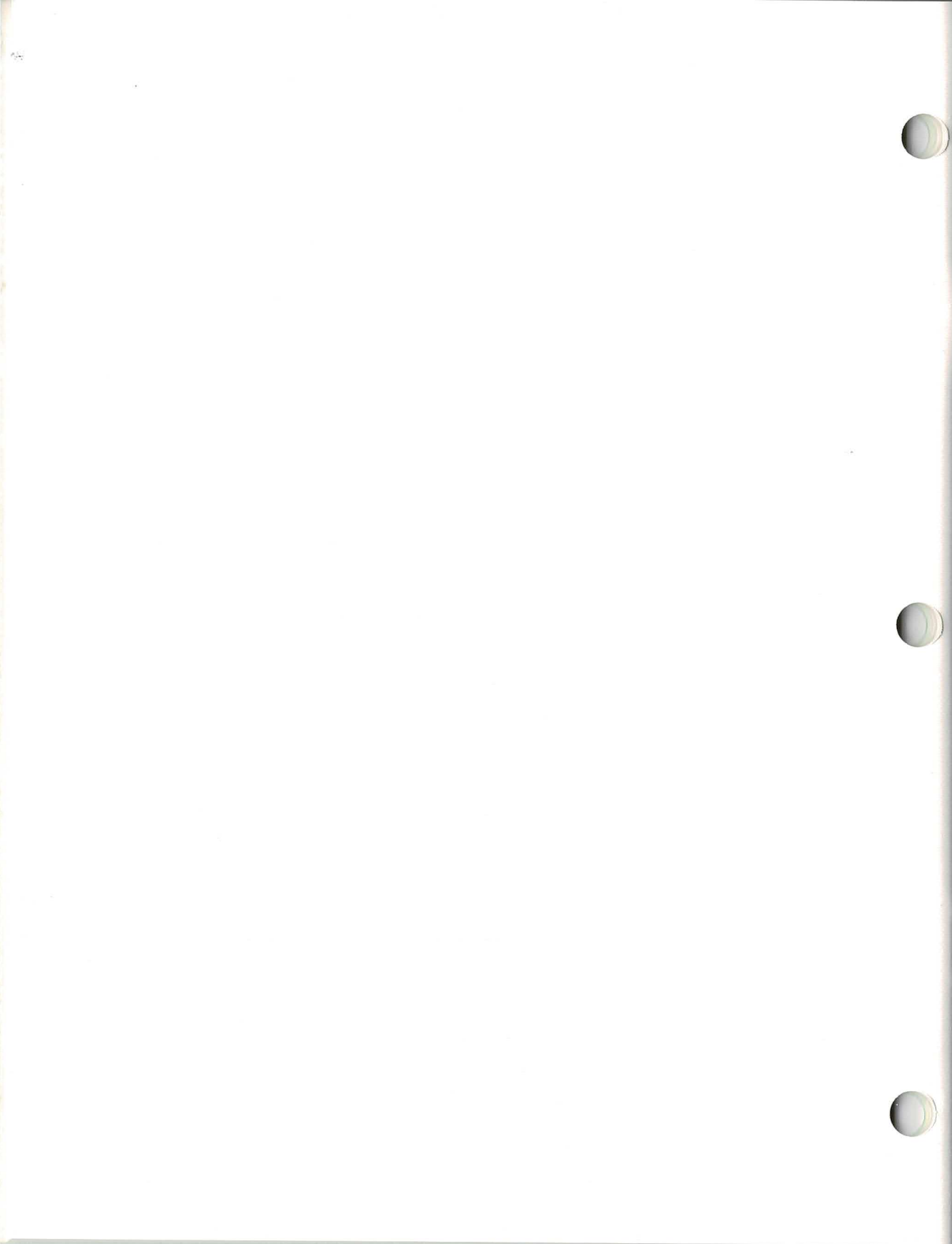
What happened The value specified for the Change Speed of Playback command is not a number between 1 and 32,000.

What to do Reset the form using the proper value.

11102: Delay value must be within 1 to 60

What happened The value specified for the Delay for Period of Time command is not a number between 1 and 60.

What to do Reset the form using the proper value. If a longer delay is required, specify the command multiple times.



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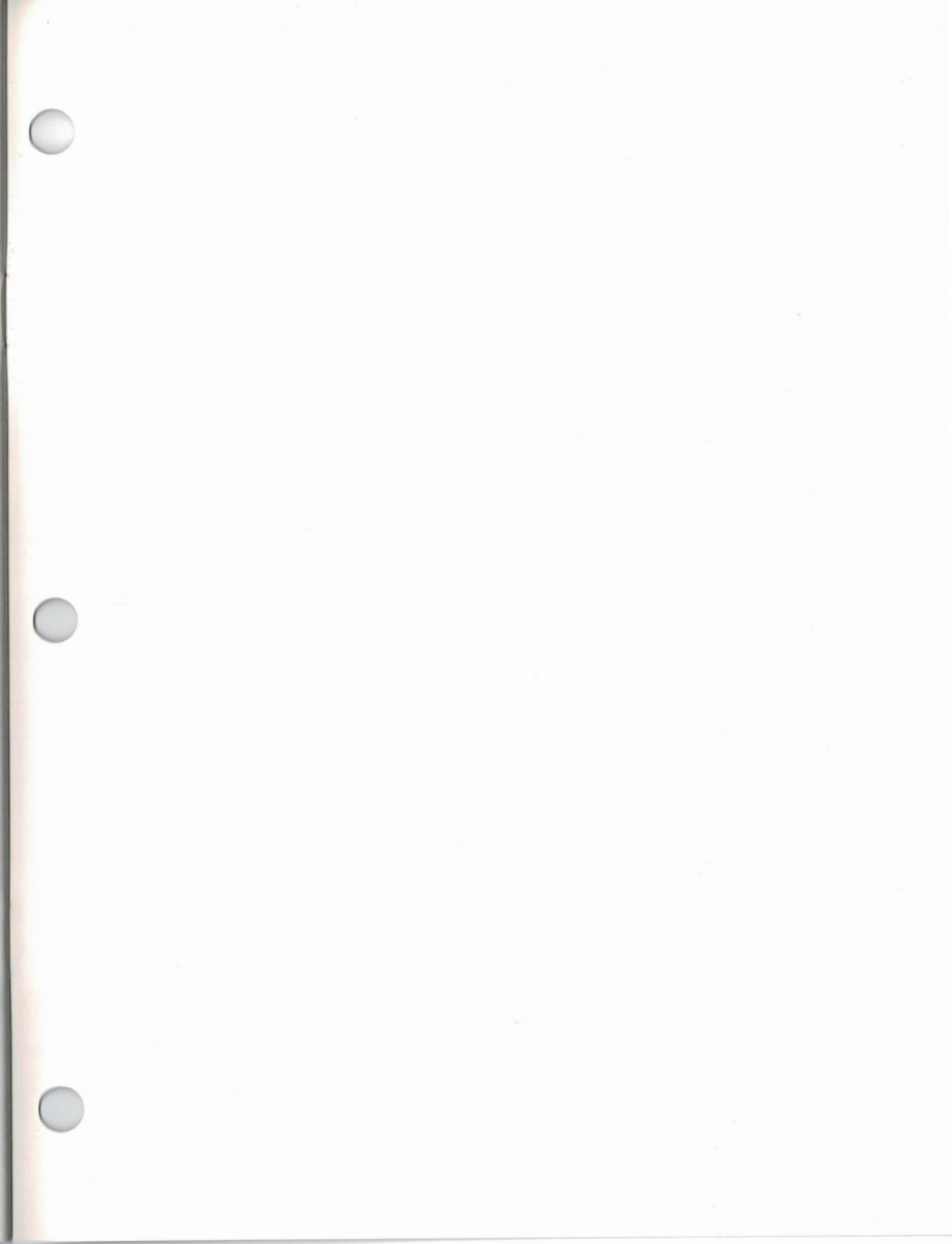
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