Chapter 1 Getting Started

Chapter Overview

Installing the Package

Getting Started

- Converting Metacode into a Tektronix 4010 File
- Downloading a Tektronix 4010 File
- Translating a Tektronix 4010 File into PICT

Importing PICT Files into HyperCard for Animation

- Duplicating the Template Stack
- Loading the Animation Sequence

Controlling Your Animation

- Setting the Animation Speed
- Exiting the Animation

Chapter Overview

This chapter introduces and describes the basic steps involved in using the NCSA HyperCard Scientific Animation Package:

- installing the package
- converting a Tektronix 4010 file into PICT format
- creating and controlling a movie animation
- exiting the application

This chapter assumes that you are familiar with the Macintosh user interface; that is, you should know how to use the mouse and menu bars and issue commands by clicking buttons. For information regarding the Macintosh interface, see your Macintosh user's guide.

Installing the Package

The NCSA HyperCard Scientific Animation Package does not require any

unusual installation procedures. As you would for any new Macintosh software, create a new folder and copy the contents of the program disk to your hard disk. The NCSA HyperCard Scientific Animation Package may also be used from a floppy disk; however, image data may exceed the capacity of floppy disks.

Getting Started

This chapter guides you through the following steps involved in using the NCSA HyperCard Scientific Animation Package to create a movie:

- translating existing NCAR GKS cgm or DI3000 metacode into a Tektronix 4010 file that can be transferred from the host to your Macintosh (**NOTE**: If your metacode is already in Tektronix 4010 format, skip this step.)
- downloading the Tektronix 4010 file to your Macintosh
- translating the Tektronix 4010 file into PICT format, which is readable by HyperCard
- loading the PICT file into a template HyperCard stack
- animating the frames

Converting Metacode into a Tektronix 4010 File

If you already have a Tektronix 4010 file, you may download it directly to your Macintosh and proceed to translate the file into PICT. Skip to the instructions in the section entitled,"Downloading the Tektronix 4010 file," on page 1.2 of this chapter.

If you need NCAR Graphics 2.0 or DI3000 packages to translate your output metacode files into Tektronix 4010 files (as is the case when working on Cray supercomputers or other machines that support or are equipped with a vector graphics package—like the Alliant or Iris computer), follow the instructions presented below.

If you are using NCAR GKS cgm:

1. Create a file using your favorite editor (such as vi), name it (e.g., tek.tran), and place the following command line in it:

   ```
   env FONTCAP font0
   env GRAPHCAP=t4010.b cgmtrans $1>tek.out
   ```

   where $1 is the name of the metacode file you wish to translate and tek.out is the filename for the resulting Tektronix 4010 output stream.

2. Translate the metacode file into a Tektronix 4010 file by entering:

   ```
   tek.tran ncar.meta
   ```

   where tek.tran is the executable script you created in Step 1 and

ncar.meta is the metacode file you wish to convert to a Tektronix 4010 file ($1 in Step 1). This produces a Tektronix version of your metacode, here named tek.out (see Step 1), which you will later transfer to your Macintosh for animation.

NOTE: The NCAR GKS cgm scripts work only on the Cray supercomputers located at the University of Illinois at Urbana-Champaign. Ask your system managers to create a batch Tektronix 4010 GRAPHCAP to run NCAR Graphics 2.0 for your computer system.

If you are using DI3000:

1. Create a file using your favorite editor (such as vi), name it (e.g., tek.tran), and place the following command lines in it:

```
set mf 1 di.meta
draw picture from first to last
quit
```

   where di.meta is the DI3000 metacode file you wish to convert to a Tektronix 4010 file.

2. Translate the metacode file into a Tektronix 4010 file by entering:

```
mftran t14 < tek.tran > tek.out
```

   where tek.tran is the executable script you created in Step 1 and tek.out is the filename for the Tektronix 4010 output stream. This produces a Tektronix version of your metacode, here named tek.out, which you will later transfer to your Macintosh for animation.

Downloading a Tektronix 4010 File

To download a Tektronix 4010 file to your Macintosh, use either Telnet or Kermit. If you are unfamiliar with NCSA file transfer procedures, refer to NCSA Telnet or Kermit manuals.

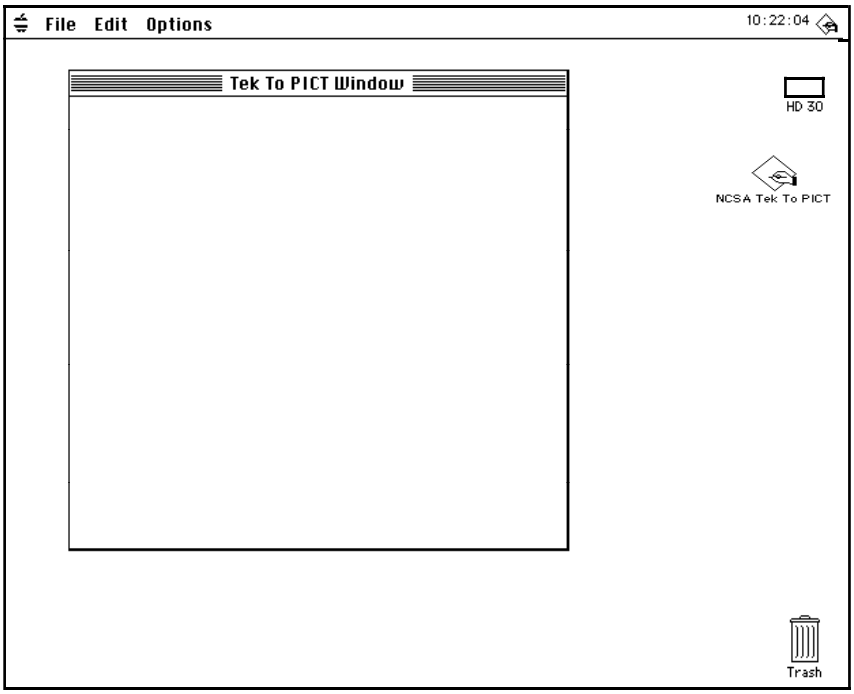
You are now ready to convert your Tektronix file into PICT format so that it may be read into HyperCard.

Translating a Tektronix 4010 File into PICT

To translate your Tektronix file into PICT using the NCSA Tek To PICT application:

1. Invoke NCSA Tek To PICT by double clicking on its application icon. A startup dialog box briefly appears to introduce the program. Next NCSA Tek To PICT menu bar and a blank window appear (see Figure 1.1). The Tek To PICT window reports the commands you issue.

Figure 1.1 Tek To PICT Window



NOTE: The Edit menu, shown in Figure 1.2, has no function in the Tek To PICT application.

Figure 1.2 Edit Menu

2. Select Open Tek 4010 File from the File menu, as shown in Figure 1.3, or press -O. A directory dialog box appears (see Figure 1.4).

Figure 1.3 File Menu

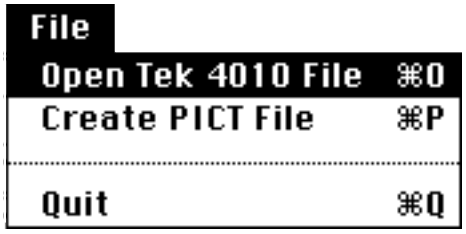
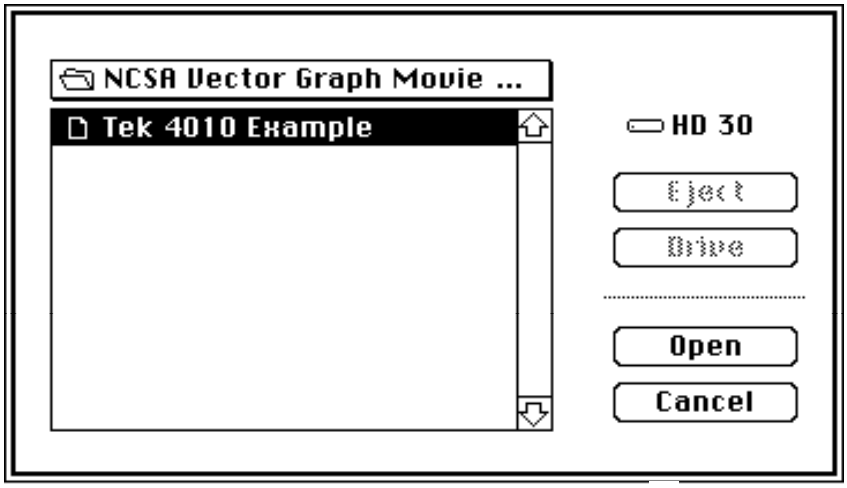


Figure 1.4 Directory Dialog Box



3. Select the Tektronix 4010 file you wish to convert and click Open, or simply double-click on your selection. This action loads your Tektronix 4010 file into the Tek To PICT application and returns you to the Tek To PICT window.

4. Select Create PICT File from the File menu or press -P. A directory dialog box appears, asking you to name the new PICT file. Enter a new name, and click Save.

NOTE: If you alter your PICT file by entering a new name for a previously named file, appending an old movie, or changing the frame parameters, the replacement dialog box shown in Figure 1.5 appears. Click Yes if you want to replace the existing PICT movie; No, if you do not.

Figure 1.5 Replacement Dialog Box

5. Specify the parameters of your PICT frames as instructed in Chapter 2, “Options and Special Features.”

NOTE: You may skip Step 5 if you accept the default parameters this application holds for PICT frames. Select Show Info from the Options menu or press -I to view the default parameters (see Figure 1.6).

6. Select Translate Frames from the Options menu, shown in Figure 1.6,

or press -T. The Show Info dialog box appears so that you may check the status of your translation and verify that you are reading from and writing to the appropriate files and have chosen the correct parameters for your PICT file (see Figure 1.7). If one or more of the parameters are wrong, click Cancel and reset parameter options before translating frames.

Figure 1.6 Options Menu

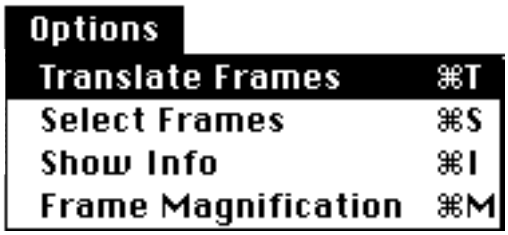
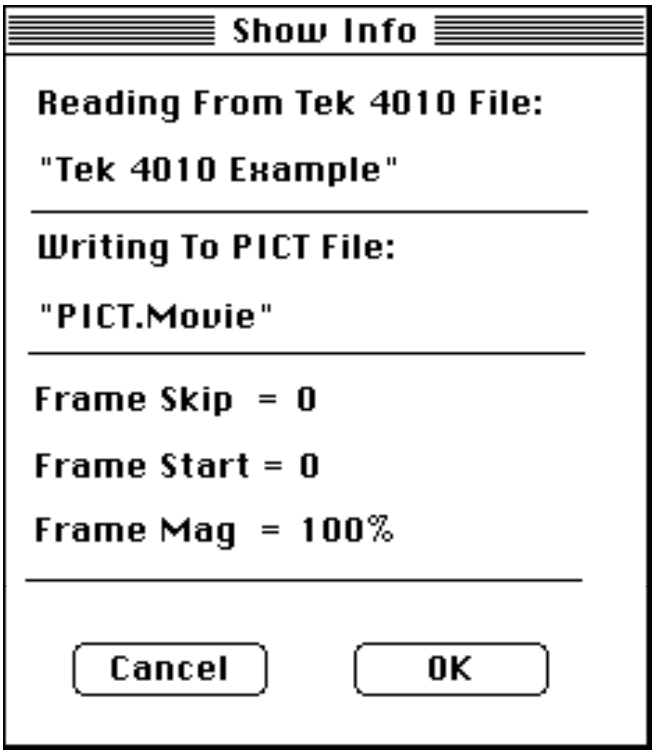


Figure 1.7 Show Info Dialog Box



7. Click OK to translate your Tektronix file into PICT format. The translation appears in the Tek To PICT window. To interrupt while frames are translating, press -Period (.). Click Cancel to exit the dialog box without translating the file.

8. Select Quit from the File menu when you are ready to leave the Tek To

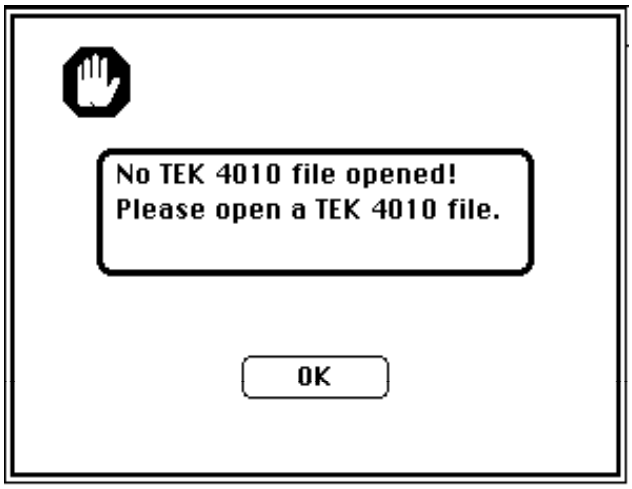
PICT portion of the package.

Troubleshooting

This section discusses a few of the error messages that may occur while you are attempting to translate Tektronix 4010 files into PICT format.

Figure 1.8 Tek 4010 Error Message

ERROR MESSAGE:



MISTAKE:

You attempted to translate your frames before opening a Tektronix 4010 file.

SOLUTION:

1. Click OK.
2. Open the desired Tektronix 4010 file (start at Step 2 of the section of this chapter entitled “Translating a Tektronix 4010 File into PICT”).

Figure 1.9 PICT File Error Message

ERROR MESSAGE:

MISTAKE:
You attempted to translate your frames before opening a PICT file.

SOLUTION:
1. Click OK.
2. Create a PICT file (start at Step 4 of the section of this chapter entitled “Translating a Tektronix 4010 File into PICT”).

Importing PICT Files into HyperCard for Animation

To animate your frames, you must import your PICT file into a template HyperCard stack. Included in the NCSA HyperCard Scientific Animation Package is a stack named HC Animation Template. To preserve the template stack and its commands, always use a copy of this stack for your animations. *Never delete your original HyperCard Template Stack.*

Duplicating the Template Stack

There are two methods by which you may create a copy of the template stack. Both work equally well:

Method One:
1. Select the HC Animation Template file icon from the Finder or Multifinder.

2. Choose Duplicate from the File menu or press -D.

You now have a working copy of the template stack, named “Copy of HC Animation Template” by default. To rename the stack, select the filename and type the desired name. To load your PICT files into this stack for animation, open the stack by double-clicking on it, then follow the in-

structions presented in the following section entitled “Loading the Animation Sequence.”

Method Two:

1. Open the HC Animation Template stack by double-clicking on it.

2. Choose New Stack from the File menu.

3. Name the stack by typing in the textbox labelled Name of Stack. (For example, you could name this stack “Practice Movie.”)

4. Make sure the Copy Current Background option is checked.

5. Click New.

You are now in a copy of the template stack and may proceed to load your PICT files for animation by following the instructions presented in the following section.

Loading the Animation Sequence

When you open your template HyperCard stack, the first card of the stack and the HyperCard menu bar appear on the screen (see Figure 1.10). To load and animate a sequence of frames, you will use the buttons on the right side of the card, as described in the following sections. For information regarding the menus and commands contained in the HyperCard menu bar, refer to your HyperCard user’s guide.

NOTE: You *must* set your user preference level on the Home Card at the *painting* level or above in order to have full access to the File, Edit, and Tools menus. For information on setting user preference levels, refer to your HyperCard user’s guide.

Figure 1.10 Vector Graph Window

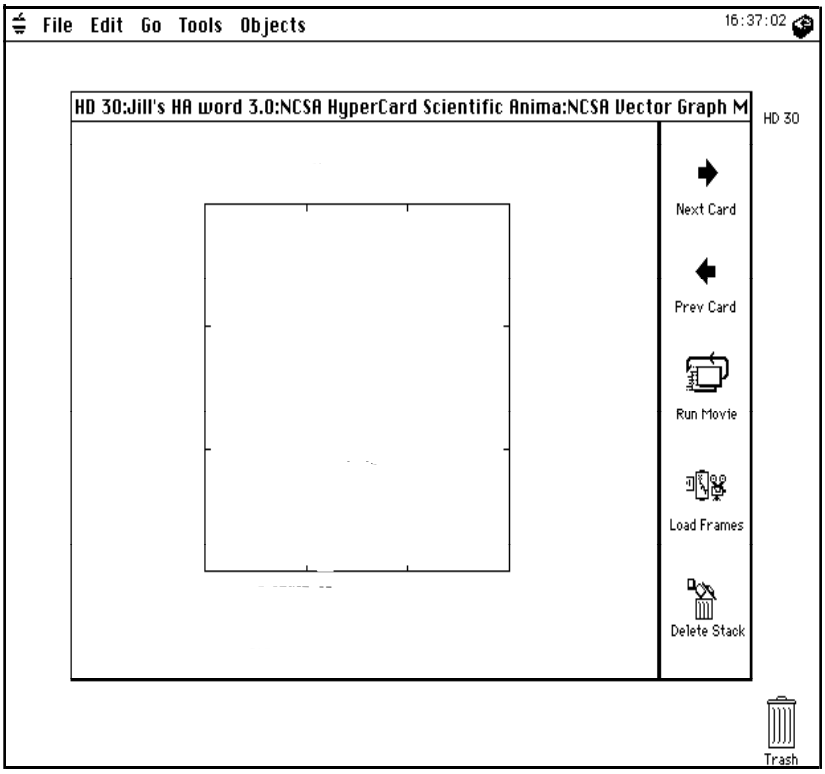


Figure 1.11 Load Frames Icon

To read your PICT files into your template HyperCard stack:

1. Click the Load Frames icon, shown in Figure 1.11.

2. Select and open the frames you want to load in the dialog box that appears. For example, select and open the sample PICT file named "PICT.Movie."

The NCSA HyperCard Scientific Animation Package contains a new HyperCard XCMD which has been created to read PICT files into HyperCard. The following section outlines the PICT To HyperCard translation as well as the basic options available for manipulating your animation.

NOTE: If you select an item that cannot be loaded, the Pictxcmd dialog box, shown in Figure 1.12, appears indicating that an obstacle exists in the translation between the PICT file and the HyperCard XCMD. This is a standard HyperCard error message that may indicate any of a number of errors. The simplest solution to the problem in this case is to create a new stack and begin at

Step 1. Click Script to view the speed script or Cancel to exit the message box.

To change the speed script of the movie or other elements in this program which pertain to the scripting language and features of HyperCard, see your HyperCard user's guide.

Figure 1.12 Pictxcmd Dialog Box

Controlling Your Animation

The template HyperCard Stack allows you to single-step through your frames or animate them as a continuous movie at various speeds.

To view your movie frame by frame, click either the Previous Card or Next Card icon, shown in Figure 1.13.

Figure 1.13 Singular Step Button Icons

Figure 1.14 Run Movie Icon

To view the movie in its entirety, click the Run Movie Icon shown in Figure 1.14.

Setting the Animation Speed

When you click Run Movie, the Speed dialog box, shown in Figure 1.15, appears and asks you to indicate the speed at which you would like the

movie to run. To specify a speed, click slowest, faster, or fastest.

If you select either the slowest or the faster button, you may interrupt the animation by clicking anywhere on the screen; whereas, if you click fastest, the only way to halt the animation is to press -Period (.).

Figure 1.15 Speed Dialog Box

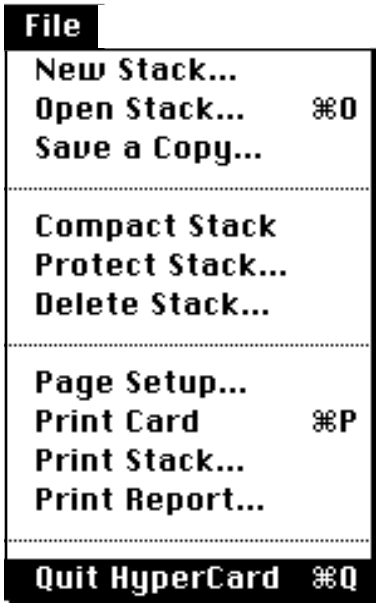
Figure 1.16 Delete Stack Icon

To delete an entire stack, click on the Delete Stack Icon shown in Figure 1.16. This action deletes the stack you were last working on and compacts the rest of your stack. Deletion and compaction of cards or stacks are features of the HyperCard program. When a stack is deleted, all the cards, background pictures, buttons, actions, and fields of the current stack are removed. As a result, free space gets entered into the stack with each deletion; the more free space existing in a stack, the slower and larger the stack becomes. To get rid of this free space and to keep the stack running at an efficient speed, choose Compact Stack from the File Menu.

Exiting the Animation

You can exit your animation stack by quitting the HyperCard application. To do so, select Quit HyperCard from the File Menu, shown in Figure 1.17, or press -Q.

Figure 1.17 File Menu


File
New Stack...
Open Stack... ⌘O
Save a Copy...
Compact Stack
Protect Stack...
Delete Stack...
Page Setup...
Print Card ⌘P
Print Stack...
Print Report...
Quit HyperCard ⌘Q