Movie Maker®

TABLE OF CONTENTS

The Manual

INTRODUCTION

Welcome to the Movie Maker Studio Lot. We trust your chauffeur had no trouble finding the parking space with your name on it. It doesn't matter whether you're a movie mogul or a first-time producer without a script. We enjoy rolling out the red carpet no matter who shows up at our door, and we'll do our best to make everything go smoothly. We can help you create your animated movies and even keep on schedule. The budget, of course, is **your** problem.

Before we begin the Studio Tour, it may help you to understand our system of notation. All Movie Maker commands are typed onto the keyboard as single letters, sometimes followed by a number, such as A, S1, Z, and so forth. To reinforce the meaning of each command in this manual, we're going to spell it out, **boldfacing** the characters we want you to type. So:

A(ction) means you should type **A**.
G(oto) means you should type **G**.
G(oto)**050** means you should type **G050**.
S(equence)**1** means you should type **S1**.
RETURN, **SPACEBAR** and **ESC** will also be capitalized. (Commodore owners, use the upper-left-most key—it has an arrow on it—in place of **ESC**.

All menu options are selected by moving a highlight bar through the menu with the arrow keys and pressing **RETURN**. In this manual, we will capitalize the menu options exactly as they appear on your screen, such as CATALOG files, GET FILE, or MAIN MENU.

Similarly, when we are talking about one of the four sections of the Movie Maker program--COMPOSE, RECORD, SMOOTH, and PLAY--we will capitalize those words as well.

Movie Maker is on Side 1 of the Program Disk. Side 2 of that disk contains some ready-made movies for you to sit back and enjoy. You will have a chance to do that during the Studio Tour. The Data Disk contains the files that make up the movies and some additional files (on side 2) by Gahan Wilson (called BDAY, XMAS and, of course, HALLWEEN). As you will see during the tutorial, you can use these files as a starting point for your own animations.

Now cough up a quarter and let's start the tour!

CHAPTER ONE: THE STUDIO TOUR.

What is a Movie Maker movie?

Movie Maker is a computerized animation facility for doing the same thing that animators do by hand, only much faster and without all that work! Our five-member crew will help you draw shapes, combine shapes into sequences, record sequences to form moving characters, add sound, and play back the results at varying speeds.

But most importantly, Movie Maker will let you experiment with the results by editing scenes, re-recording video and audio tracks, changing colors, and so forth. In this way, Movie Maker gives you control over your creativity that is not possible with pen and ink or even videotape. In short, this is a very special studio, equipped with some of the latest techniques in computer animation. Let's take a look inside.

The Studio is made up of four rooms corresponding to the four sections of the Movie Maker program: 1. COMPOSE, the Composing Room where you create your background scenery and characters; 2. RECORD, the Recording Room where you create animations; 3. SMOOTH, the Cutting Room where you remove flickering and add credits; and 4. PLAY, the Screening Room where you watch your completed movies.

Your crew consists of a Stage Manager, a Director, a Cameraman, a Soundman, and an Art Department. At any given time you will find some or all five crew members in each of Movie Maker's four rooms, although not all crew members are available for every room. For example, the Stage Manager is available in all four, whereas the Soundman only works in RECORD.

As Producer, it is your job to make all the decisions. But before you can give commands to your crew, you will have to become familiar with the "Producer's Lingo." This is a mnemonic alphabet of commands ranging from **A**(ction) to **Z**(oom). To execute a command, you simply type its initial letter.

Don't let the number of commands overwhelm you -- despite its power and versatility, Movie Maker is not difficult to learn and use. All you have to do is pretend you are in charge of a real studio crew. The commands you give to your Director, Cameraman, Stage Manager, Art Department, and Soundman correspond to the functions of their real world jobs anyway, which makes it easier to remember how and when to use each command.

THE MOVIE MAKER STUDIO

You are the Producer

1. COMPOSE
(The Composing Room)

YOUR CREW:
-Stage Manager
-Art Department
-Director
-Cameraman

2. RECORD
(The Recording Room)

YOUR CREW:
-Stage Manager
-Art Department
-Soundman
-Director
-Cameraman

4. PLAY
(The Screening Room)

YOUR CREW:
-Stage Manager
-Director
-Cameraman

3. SMOOTH
(The Cutting Room)

YOUR CREW:
-Stage Manager

The Basic Concepts

Before you start learning the program by making movies in the tutorial sections that follow, it is important that you understand the way Movie Maker is structured -- the Big Picture, if you like. This won't take long and it will help avoid confusion in the studio.

Movie Maker Uses six different types of files to give you maximum flexibility as a movie maker: 1. Shape Files (SHP); 2. Background Files (BKG); 3. Animation Files (ANI); 4. Sound Files (SND); 5. Extra Function files (FNC); and 6. Movie Maker Movie Files (MVM). You don't have to use every kind of file in a movie, but you must use at least one Shape File and one Animation File. And even though these files are constantly interacting, you don't have to keep track of which files are of which type, because the program does this for you automatically.

Shape Files are the backbone of Movie Maker because they contain the images that you use to create your animated sequences. Shape Files can store any figures you draw for future use. Each Shape File stores up to 64 different images on a single screen called a Shape Page. Having a lot of shapes to work with gives you flexibility--you never have to use all of them, but they are there if you want them.

By using the same shapes in different animation sequences, you can let your characters develop full careers. For example, by saving the shapes you use to create an animation of a dog, you will be able to use them over again to create different animations of the same dog. Or you can re-sequence the shapes to make the dog do different things.

Background Files are the scenery for your movies -- the non-moving objects like houses and trees against which your characters move. By saving your Background Files you can use them over again in different movies.

Animation Files are made by putting series of shapes into sequences and recording those sequences as you use the joystick to move them around over a Background File. Each animation sequence can have up to 16 shapes. Each animation file can contain up to 300 frames of animation with up to six different sequences playing simultaneously throughout.

Sound Files exist as a fixed set of files in the Movie Maker studio. After recording an animation, you can bring in a Sound File and record tracks of music and sound effects to accompany the video tracks. (The Commodore 64 /128 version of the program allows up to 3 audio tracks; the Atari version, up to 4 audio tracks; the Apple version, none.)

Extra Function Files contain additional tools to help you enhance your animations. SCALE allows you to change the width and height of a shape without redrawing. TEXT is used for typing text and graphic symbols directly onto a background or shape page. Once your Animation File contains all the recorded video and audio tracks you want, you can also use it to add scrolling text at the beginning and end for title and credit screens.

Movie Maker Movie (MVM) **Files** are your finished products, the movies you create using the animation tools at your disposal. You can record your finished movies on videotape by hooking up your computer to a video cassette recorder and recording while you play them. This way you can string together as many Movie Maker Movies as you need to produce a feature length animation on videotape.

Your Video/Audio Recording Equipment

Your Cameraman is in charge of the Movie Maker recorder, which has three basic modes: recording, playback forward, and playback reverse. All camera-related commands will be explained later, but you should understand a few things about the recording medium (or "tape") right now. Your tape is divided into separate tracks, six video and up to four audio tracks (depending on your computer). When you play back a movie, the computer displays the animated characters from all six video tracks simultaneously, automatically synchronizing the 300 frames on each track (including the audio tracks).

Your cameraman can record a track or portion of a track "on top of" another. This means that you can watch one of your animated characters on the screen while you record another or you can re-record any frame or sequence of frames over itself. Movie Maker's versatility makes it easy to create special effects without having to draw the same shape over and over.

The Man With A Thousand Faces

One of the most important concepts to grasp in using Movie Maker is the distinction between an *actor* and a *character*. Just as real life "character actors" are able to portray different screen characters, sometimes in the same movie, your Movie Maker actors can also portray different characters in the same animation.

In Movie Maker whenever we speak of an "actor" we are actually referring to a single video track which in turn might consist of ("portray") one or more different characters. For example, suppose you wanted a fish jumping out of a pond and back into the water in a never-ending cycle throughout your entire movie. You would record that track with one sequence of several fish shapes cycling in a loop. The video track containing the fish is the actor; the fish is the character.

IN THE RECORDING ROOM

Think of the recording room as where you lay down tracks on your video tape. Each Actor is a video track and each Voice is an audio track. You can record over any track if you decide you don't like it. And just as you can use different sounds on each audio track, you can use differentshapes an each video track. In other words, you can record more than one sequence on each video track.

Frame 001 .... Frame 300

TRACK 1	=	A(CTOR)1
TRACK 2	=	A(CTOR)2
TRACK 3	=	A(CTOR)3
TRACK 4	=	A(CTOR)4
TRACK 5	=	A(CTOR)5
TRACK 6	=	A(CTOR)6
TRACK 7	=	V(OICE)1
TRACK 8	=	V(OICE)2
TRACK 9	=	V(OICE)3
TRACK 10	=	V(OICE)4

You may not have this many voices-- check your computer's reference card to see how many you do have
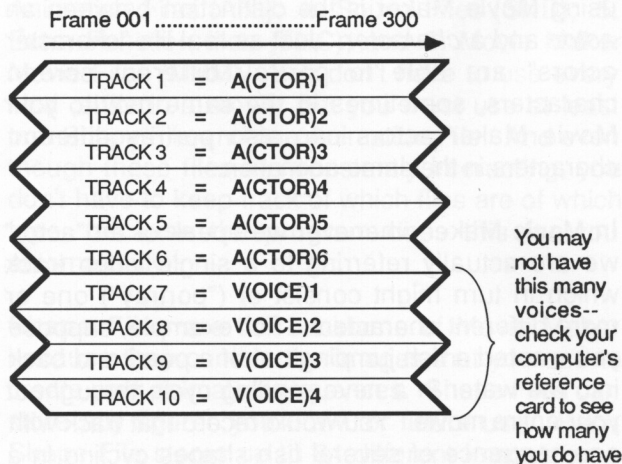
Suppose, however, you wanted the fish at one point to jump onto land, sprout legs, and become a reptile. You would do this by recording a new sequence of reptile shapes on the same track following the sequence of the leaping fish. Thus although the fish and the reptile are different *characters*, having been created from different sequences of shapes, they are both being portrayed by the same *actor* (that is, they exist on the same track), and thus can both be recorded as Actor #1 at different points in the movie.

Okay, the 25-cent tour of the Studio is over. But we thought you might enjoy watching some of the movies that have been made here in the past before you start making your own. At the very least, it will demonstrate some of the things you will be able to do with just a little practice. Insert the Movie Maker Program Disk with side two facing up, and refer to your Reference Card for specific information on loading the Autoplay feature on your computer. You might want to make some popcorn first.

CHAPTER TWO: TUTORIAL

Making a Sample Movie

As you saw during the Studio Tour, you can begin the Movie Maker process either from the COMPOSE room or the RECORD room. You begin in the COMPOSE room when you want to create new shapes or modify old ones, using the Art Department's graphic tools. You might also go there to try out new animation sequences to see how they look.

Because graphic ability varies widely from person to person, the first part of this tutorial will not require you to draw your own shapes or backgrounds; instead, we will be using ones from the Movie Maker library and we'll only spend a little time in COMPOSE looking at them and defining one new sequence before going to RECORD.

Let's use a simple scenario for our movie, one which uses just two pre-built sequences, each in its own video track. We'll begin our movie with some butterflies fluttering across an empty field, then we'll have a man with a net come from off screen to chase and catch the butterflies.

Step 1: Boot the Movie Maker program using the instructions on your Reference Card. From the Main Menu, type **1** and press **RETURN** to select COMPOSE.

Step 2: Replace the Program Disk with Side 1 of the Data Disk. While you are in the COMPOSE Utility Menu, use the arrow keys to highlight the GET FILE option and press **RETURN**. Next, highlight the SHAPE option and press **RETURN**. Then type **FAMILY** as the name of the file you want to retrieve and press **RETURN** once more.

Step 3: Use the same procedure to get the background page called "Family" (i.e., select GET file, then BACKGROUND and type **FAMILY** again). Then highlight the COMPOSE option and press **RETURN**. You should now be on your Shape Page where you can see a number of shapes.

Step 4: Let's look at the butterflies first since we will later begin our movie with them. Type **A**(ction)—which will replace the shape page with the background page—then type **S**(equence)**1**. The butterflies will appear in the center of the screen. Press the space bar to start them fluttering.

The space bar starts and stops the animation. Typing **F**(rame rate) followed by a number changes the speed. To see each individual shape in the sequence, type **F**(rame rate)**0**, then press the space bar to step through the animation a step at a time.

To see the pre-defined man-with-net sequence, type **S**(equence)**2**. Continue playing with the **F**(rame rate). Use your joystick to move the man around the screen as the animation sequence plays. Switch back to **S**(equence)**1** and do the same with butterflies. This is what you'll do when you begin recording your movie in step 6.

Step 5: Before we leave COMPOSE, let's define a new sequence for our movie. First get the shape page back on the screen by pressing the **ESC** key. Next type **S**(equence)**3**. Use the joystick or the cursor keys to move the flashing outline over the first shape you want in your sequence and press the button. Move it over the next shape you want and press the button, etc. Notice that the cell counter on the help line increases by one each time you press the button. A sequence is made of up to 16 cells which must be chosen in order as we are doing here.

Use any combination of shapes that you like. Make up something fanciful you'd like to add to our man and butterflies movie. To see how it looks, type **A**(ction), and use the space bar to stop and start it. To start it over, press **ESC**, type **S**(equence)**3** and pick the new shapes and/or order you want.

Step 6: Let's record the first track. Type **U**(tility) menu) and select Main Menu, then type **2** to select RECORD. (Be sure to put the movie maker disk back in the drive before you press Return). Select RECORD from the Utility menu when it appears.

Type **A**(ctor)**1** to tell the program you want to record on the first track, then type **S**(equence)**1** to tell the program which sequence you want to record on that track. This takes you to your Background Page and places the first shape of Sequence 1 in the center of the screen. Before you actually begin recording, you can use the joystick to position your character on screen. Experiment with it now, then move the butterflies to the right edge of the screen.

Set the speed of the recorder on slow by typing **F**(rame rate)**3**. Now press the **SPACEBAR** to start recording, and begin moving the butterflies around on the screen with the joystick. Move them all the way to the left, then start them back to the right moving a little faster as though they were being chased. Bring them to rest where you want the man to catch them and press the **SPACEBAR** to stop recording. Type **Y**(ank) and the butterflies will disappear. Let's watch what we've got so far. Type **F**(rame rate)**4**, then type **G**(oto), and press the **SPACEBAR** to get an instant replay of the action.

Your butterflies should appear to move around. If you want to re-record the whole thing, type **G**(oto), **A**(ctor)**1**, **S**(equence)**1**, and press the **SPACEBAR**. If you only want to re-record from a particular point, type **G**(oto) followed by the number of the frame you want to begin re-recording from (always type three digits, i.e., 001, 012). Then type **A** and press the **SPACEBAR** to start the recorder.

Step 7: Now we want to record the man catching the butterflies. Type **G**(oto) to get back to the beginning of the movie. Type **A**(ctor)**2** to record on the second track. Then type **S**(equence)**2** to tell the program which sequence of shapes you want recorded on that track. You are on your background page again and your frame counter is at 001. Move the man just off the left edge of the screen and press the **SPACEBAR** to start the recorder.

When the butterflies reach the left edge of the screen and begin fleeing in the other direction, move the man onto the screen in pursuit. Take him to the point where you made the butterflies disappear, then time and place his last swipe so the net goes right onto the butterflies the last frame before they disappear.

If you're have trouble getting everything timed, study the action at a slow frame rate. Re-record the end of the butterfly track (Actor 1) so that the butterflies stay in one place for the last few frames. Then re-record the last few frames of the man track (Actor 2), practicing moving the man almost into final position and waiting, and then into final position just before his net is needed on top of the butterflies.

To re-record, just type **G**(oto) followed by the number ot the frame where you want to begin re-recording, press **A**, then move the outlining window over the actor you want to record. When you press the **SPACEBAR** the recording will start and you will be controlling the actor you selected.

By the way, if you'd like to run your animation backwards at any point to go back a few frames, type **R**(ewind). This will put your projector in rewind mode so that the **SPACEBAR** will start and stop a backwards playback of the movie. To get out of rewind mode use **G**(oto) or **A**(ction.)

Step 8: Your movie is almost finished. In fact, if you like it without the addition of the third sequence, the one you created yourself in COMPOSE, you could save your animation as described in the last paragraph of this step and go on to step 9. If you would like to add the third sequence to your movie, type **G**(oto) **A**(ctor)**3** **S**(equence)**3**. The first frame of your sequence will appear in the outline and you may begin recording it on track 3 by pressing the **SPACEBAR**, just as you did with tracks 1 and 2.

You can even make up new sequences if you like and add them to your movie without leaving RECORD. Just press **ESC** to go to the shape page, then type **S**(equence)**4** and begin defining the sequence exactly as you did in COMPOSE: by moving the window over each shape in the sequence in turn with the joystick or the cursor keys and pressing the button.

(You could actually name your new sequence as sequence 1, 2 or 3 if you liked. Though you can only have 9 pre-built sequences available at once, you can use as many different sequences in a movie as you can fit in. The only rule is that you can only have one sequence active in each track at once.)

Don't let the way the outline jumps around throw you off. It's following the pattern of other pre-defined sequences and so doesn't march in order from left to right across the screen. But it does go to each shape once and only once before starting its sequence all over again. Pay attention and be patient and you'll soon be picking the shapes you want with confidence. (You'll find the up and down cursor keys useful for moving the outline through the pre-defined sequences.)

When you have the sequence the way you want it, record it into your movie as well, either on its own new track or on a portion of another track not currently occupied by an active sequence.

Once your characters have all been recorded and everything looks pretty good, you will want to save your animation. Type U(tility Menu), and select the KEEP file option, then select the ANIMATION option. Remove your Movie Maker disk and insert the formatted disk on which you want to save your work. (You can format a disk right now using the FORMAT disk option on the menu, if you need to.) Type in a name for your movie, up to eight characters long, and press **RETURN**.

Step 9: Now it's time to produce a flicker-free version of our movie, complete with titles. Select the MAIN Menu option and remove your data disk and replace it with the Movie Maker program disk. Type **3** and press **RETURN** to load the SMOOTH section of the program. Once it has loaded, switch disks again so that your data disk is in the drive.

Select the Beginning Text option and press **RETURN**. You are on a blank screen where you can enter a title and credits for your movie. Type any message you like, up to 23 lines long. When you finish typing your credits, return to the menu by pressing **ESC**. Use the cursor keys (or Control I,J,K, and M on the Apple II or II+) to move the cursor around. Use the Backspace or Delete key (or type over them with spaces) to delete un-wanted characters.

Next select the ENTER ending text option and press **RETURN**. You are on another blank screen where you can enter further credits or a message, again up to 23 lines long. Press **ESC** when you are finished. Finally select the SMOOTH Animation option. You will be asked to supply a file name for your finished movie (MVM). Type the name of your choice and press **RETURN**. (Make sure you have a formatted disk in the drive. You can use the same one you used for saving the ANIMATION file.) The smoothing, which will remove the flicker from your movie, is done automatically.

Step 10: Now it's time to sit back and enjoy what you've made. Remove your data disk and replace it with the Movie Maker program disk. Select the MAIN Menu option, then type **4** and press **RETURN** to load the PLAY section of Movie Maker. When PLAY has loaded, replace the Movie Maker program with your data disk. Select the PLAY movie option on the menu and press **RETURN**. Type in the name you gave your movie in the SMOOTH section and press **RETURN** once more.

Congratulations! You've just made a movie, and a finely polished one at that. The next section tells how to explore the other shape, background and animation files already on your disk. The section after that will acquaint you with drawing and using original shapes with your Movie Maker drawing tools.

The remainder of the manual is then composed of reference section for the Utility menu (the Stage Manager's list of commands) and for each of the 4 main Movie Maker rooms. Look through it for a description of other powers you can experiment with to add special touches to your movie making efforts—color changes, special tricks with the quickness of the animation, etc.

Exploring the Files on the Data Disk
The easiest way to find out what pre-defined sequences already exist in the Movie Maker data files is this: Select COMPOSE from the Main Menu, then GET the shape file you want. (Use CATALOG to see a list of all the shape files on the disk.) Next, type **A**(ction), then type **S**(equence)**1** and use the **SPACEBAR** to stop and start the animation of the first sequence. To see sequence 2, type **S**(equence)**2**, etc.

To see how the movies themselves were made, select RECORD from the main menu, then GET a set of shape, background and animation files which share the same name. To identify which actor the various sequences in the movie belong to, start the movie playing by typing **G**(oto) and pressing the **SPACEBAR**. If you stop the movie at any point (by pressing the **SPACE- BAR** again) and then you type **A** to switch from playback to record mode, the outline window will appear. Move the joystick left and right or use the left and right cursor keys to move the window. Watch the help line as you move. The nunber of the actor being outlined sequence will appear on that line.

The Birthday, Christmas and Halloween card sets by Gahan Wilson offer an especially easy opportunity for personal customization. For example, start, make sure you are in COMPOSE. Then type U(tility) and GET the Xtra function file called TEXT. (It's on the Program Disk.) Next GET the Gahan Wilson shape and background files called BDAY (on side 2 of the Data Disk).

With the BDAY Shape Page on the screen, use the joystick or the cursor keys to move the outline over the name STEWART. Type **X**(tra function) to bring in the ability to type text, then type over Stewart's name with the name of a friend. Use spaces to cover up any left over letters you don't want. Don't worry if your type goes over other shapes. Remember, the Gahan Wilson original is still on the disk for use again later.

When you've finished typing the name you want, press ESC to leave text mode. If the new name no longer fits the outline, use the **B**(order) command to resize it (see page 18), then press the button to re-outline it. Now type **U**(tility) , select MAIN menu and select RECORD. Select it again from its **U**(tility) menu, type **G**(oto) and press the SPACEBAR to watch the movie with the name you typed at the end. If you like what you see, use SMOOTH to turn it into a finished movie. (If you have a Commodore or Atari, GET the SOUND file called FX first.)

To give your name a slightly bigger role, type **G**(oto)**288**. Move the joystick from side to side or use the right and left cursor keys until the window is over the name you typed. (The help line should identify it as Actor 3). Then press the button to take control of that Actor.

Type **F**(rame rate)**3** and press the SPACEBAR. As the recorder runs, move the name over to the right, then leave it in the same place for the last few frames. Play the movie back now and watch the name move at the end.

To remove the name entirely, so you can move it to a different part of the movie, **G**(oto)**288** again and place the window over the name. Type **F**(rame rate)**0**. Then type **Y**(ank) to remove that actor from that frame. Press the SPACEBAR to go to the next frame and type **Y**(ank) again. Continue until you've erased the name from every frame in which it appears (frames 288 through 300).

Creating Your Own Pictures
Animated movies create the impression of movement by flashing a sequence of pictures on the screen. Each picture is slightly different from the previous one, so that the sequence of pictures appears to move when you "flip" through it.

As a simple example, let's create the animation of a very simple robot doing jumping jacks. We'll need only three pictures to do it and we'll only have to draw the whole robot once.

Step1: From the COMPOSE Utility Menu, select CLEAR MEMORY and then EVERYTHING. Then select COMPOSE. You should see a blank Shape Page with a small rectangular outline on the upper left.

Step 2: Type B(order), and use the joystick to "drag out" the upper left corner. Press the button and "drag out" the lower right corner. When the outline fills about 1/8th of the screen, press the button again.

Step 3: Press the SPACEBAR, then type P(en)1 to tell the program that you want to draw using pen color 1. The cursor will appear in the center of the outline. To draw, hold down the button on the joystick and use the stick or your cursor control keys to move the cursor. Use this method to draw a robot like the one in the frame below. (For close-in drawing, type Z(oom). Type it again to return to normal drawing mode. Atari owners, please type Z2 or Z3 for to zoom and Z1 to return to normal.)

To erase, type P(en)0 to tell the program that you want to draw with the background color, then draw over the material that you want to erase. To erase a large amount at once, type W(indow), use the joystick or the cursor keys to move the window over the material you want to erase and type E(rase). To bring back what you just erased, type R(estore).
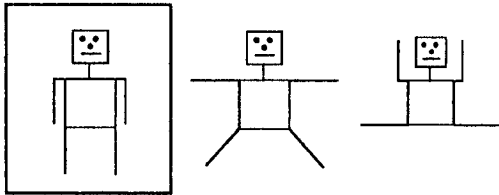
Step 4: When you have your first robot, fill in its body with color by positioning your pen inside the area you want filled and pressing I(nsert color) followed by the number of a color (1-3) followed by the button. If you press a new color number and the button, the enclosed area will fill with the new color.

Step 5: Type W(indow), then type D(uplicate. Use the stick or the cursor keys to move the window to the right, leaving behind a copy of the robot. When you have enough room, press the button again to put down another copy of the robot.

Step 6: Next press O(utline) to define the new picture as an animation cell. The window will fill with color for a second and you will hear a "yoo-hoo" sound indicating that the shape has been outlined for use as an animation cell. Repeat the process for a third picture, defining it as an animation cell as well. Then press the SPACEBAR to leave D(uplicating) mode.

Step 7: You have three identical shapes outlined on your Shape Page. Type P(en)0 and move the cursor to the second robot. Erase an arm, then type P(en)1 and draw a new arm like the ones on the second robot. Do the same to make a complete new set of arms and legs for robot 2 and a new set of arms for robot 3.

Step 8: You are now ready to animate your robot. Type **S**(equence)**1**, move the outline over the first robot and press the button. Move it over the second robot and press the button again. Notice how the count changes on the help line to show which shape belongs to which cell in the animated sequence. Move it over robot 3 and press the button again, then move it back over robot 2 and press the button one more time.

Type **A**(ction). You'll move to an empty Background Page with your robot in the outline in the center. Press the SPACEBAR to put your robot in motion. Type F(rame rate)2 to slow things down; type F(rame rate)9 to speed things up. Use the joystick to move the robot around while it does its jumping jacks.

If you want to go back to the Shape Page to make changes in any of the drawings to see their effect, just type ESC. Type U(tility) to bring up the utility menu if you want to save your first animation effort on a data disk.

CHAPTER THREE: THE UTILITY MENU

Your Stage Manager

Starting up Movie Maker for the first time presents you a choice of four rooms: COMPOSE, RECORD, SMOOTH and PLAY. When you choose one of the rooms by typing its number and pressing **RETURN**, you go to the Stage Manager's Utility Menu for that room. If you are already in a room and you want to go back to the Utility Menu, simply type **U**(tility Menu). No matter what you are doing, your Stage Manager will whisk you back to the Utility Menu.

To select from a utility menu, use the four cursor keys (or I, J, K and M on the Apple II or II+) to move the highlight bar to the desired selection, and press **RETURN**. Sometimes the Stage Manager may need more specific information than is available from one menu, in which case he will show you a second menu. For example, when you tell the Stage Manager that you want to GET a file, another menu will appear asking you which kind of file you want to get: SHAPE, BACKGROUND or EXTRA FUNCTION. Select one with the highlight bar, press **RETURN**, then type in the name of the file you want, say **DOG**. The Stage Manager will then have enough information to access the DOG file.

The Stage Manager's Utility Menu in COMPOSE includes: CATALOG files, GET file, KEEP file, COMPOSE, CLEAR memory, RENAME file, DELETE file, FORMAT disk, SELECT drive, and MAIN MENU.

CATALOG files: This option allows you to see a listing of the various types of files on your disk. When you select this option, the Stage Manager will ask you what kind of files you want to catalog: SHAPE, BACKGROUND, EXTRA FUNCTION files, or EVERYTHING. Select one with the cursor keys and press **RETURN**.

GET file: The GET file option from the Utility Menu lets you retrieve previously created shapes and other files used in making your movies. Once the Stage Manager has retrieved a shape file, you can view the screen of images by selecting COMPOSE, RECORD, etc., depending on which room you are in, from the Utility Menu.

When you select the GET file option, you will be presented with a second menu of choices: SHAPE, BACKGROUND, or EXTRA FUNCTION. If you choose SHAPE or BACKGROUND, the program will ask for the file's name. Type it in and press **RETURN**. If you choose EXTRA FUNCTION, you will need to specify one of two file names: TEXT or SCALE. These extra functions must be loaded into memory before your Art Department can use them. TEXT and SCALE will be explained below with the rest of the Art Department's functions.

KEEP file: This option lets you save the work currently in memory to your file disk. When you select the KEEP file option, you will be presented with three choices for the type of file you are saving: SHAPE, BACKGROUND, and EXTRA FUNCTION. Select one with the cursor keys and press **RETURN**. The Stage Manager will prompt you for a name for the file. Type the name using up to eight characters and press **RETURN**.

MAIN Menu: Selecting this option from any room's Utility Menu returns you to the MAIN Menu.

COMPOSE, RECORD etc.: If you want to get into the currently selected room from its Utility Menu, select the room name (it's always at the bottom of the left-hand column) and press **RETURN**. Your Stage Manager will take you to the currently loaded Shape Page.

RENAME file: Use this option if you wish to change the name of a file on your disk.

DELETE file: Use this option to remove an unwanted file from your disk.

FORMAT disk: Before you begin drawing shapes and making movies, you will need to have your Stage Manager FORMAT some blank disks so that you can save your work. (You can't save files on your Movie Maker Program or Data Disks since they are write-protected.)

From whatever room you happen to be in, press **U**(tility menu), then use the cursor keys to move the highlight bar over the FORMAT disk selection. Replace the disk in the drive with a blank disk and press **RETURN**. The program will ask you to confirm the format process by typing Y, so you won't FORMAT a disk by accident. (Formatting a disk erases everything on it and prepares it for use with your brand of computer.) Type in a name for the disk when you are prompted to do so.

Tip: When the catalog of file names on any file disk fills more than one screen, it's time to start a new file disk.

SELECT drive: Movie Maker allows you to use more than one disk drive. You need the SELECT drive option so that you can leave the Movie Maker program disk in drive 1 and use drive 2 for storing your files. If you have two drives, you should always use the first drive for the program disk and the second drive for your file disks.

CLEAR memory: The bottom of the Utility Menu screen shows the name of any active files. If you want to remove a file currently in memory so that you can start with a clean slate, select the CLEAR memory option, highlight the type of file you want to clear, and press **RETURN**. For example, if you want to clear your current Shape Page and start afresh with a blank one, select CLEAR memory and then select SHAPE as the type of file you want to clear. This option lets you reset part or all of the computer's memory without turning off the power or re-booting the program.

Warning: Use this option with care! Once you clear something from memory, you can't get it back unless you have previously stored it on a disk.

The Stage Manager is also in charge of the Help Lines. To toggle them and the color bar on and off, press H(elp). See Appendices A and B for an explanation of the Help Lines.
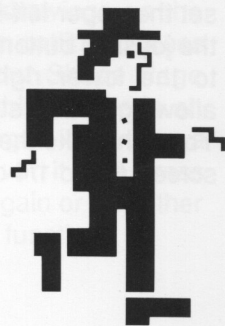
CHAPTER FOUR: COMPOSE

Your Art Department

To draw or modify the shapes you will be using in your animations, choose COMPOSE from the Stage Manager's Utility Menu. This will provide you with a blank Shape Page containing a slowly blinking square outline. The functions described below are the tools you have available to help you create your works of art. These are: **B**(order), **C**(olor)**#**, **D**(uplicate), **E**(rase), **I**(nsert color), **M**(irror), **O**(utline), **P**(en)**#**, **R**(estore), **T**(rade colors)**##**, **V**(iew outlines), **W**(indow), **X**(tra function), and **Z**(oom).

B(order): Use this command to resize the window on your screen. Pressing **B**(order) activates the border of the window or outline, as signified by a small blinking square in the upper left-hand corner. You can stretch (or shrink) the border to the size you want by moving the joystick.

When you are satisfied with the size of the window, set the upper left-hand corner in place by pressing the joystick button. This moves the blinking square to the lower right-hand corner of the window, allowing you to stretch that corner the same way. You can make the window up to 1/8 the size of the screen (up to 1/4 on Atari).

C(olor)#: Use this command to change the colors on the color bar and in your drawing. Press **C**(olor)**1**, **C**(olor)**2**, **C**(olor)**3**, or **C**(olor)**0** to designate the color you want to change, then use the cursor keys to cycle through the colors.

(Note to Apple owners: There is no color bar on the Apple version of the program. The Apple has 8 colors. Black is number 0 or 4, white is 3 or 7, green is 1, purple is 2, orange is 5, and blue is 6. Colors 0 through 3 are complementary. Colors 4 through 8 are complementary. Mixing non-complementary colors can produce unpredictable results.)

D(uplicate): Use this command to duplicate the shapes you will be using in your animation. When you are creating shapes for a sequence, you often need to use several similar shapes. The easiest way to do this is to draw the basic shape, make copies of it, and then make changes to the copies.

After you draw the first shape, type **W**(indow) and move the window over the shape. (Use B(order) if necessary to resize the window so the shape will fit inside of it.) Type **O**(utline) to define the shape as an animation cell. Type **D**(uplicate), then move the window with the joystick or the cursor keys. Press the button again to make a new copy of the shape at the position of the window. Type O(utline) to define the new shape as an animation cell, etc. Each time you press the button, a new copy of the shape will appear until you press the SPACEBAR to leave duplicating mode.

E(rase): Use this command to erase a shape or part of a shape. Using the joystick, position the window around the shape (or part of the shape) that you wish to eliminate, and press E(rase). If you make a mistake or change your mind, you can retrieve the just-erased material by typing R(estore).

I(nsert color): This function lets you insert color into a shape. For example, if you want to make the body of your shape red (which, let's say, is the second color on the color bar), you would press I(nsert)2. You would then use the joystick to move the pen to the part of the shape you want filled with color and press the joystick button. Color 2 will fill the indicated part of the shape. If you decide you want to fill it with a different color, simply type I(nsert) and the new color number. Position the pen and press the joystick button. The new color will completely cover the old one.

M(irror): Use this command to facilitate the drawing of symmetrical shapes. Draw one half of the shape, and use the D(uplicate) command to copy it elsewhere on the screen. Press the SPACEBAR to cancel the duplicate command. With your window still positioned over the copy, press M(irror) followed by a cursor key to specify the orientation -- horizontal or vertical-- you want the shape to be mirrored.

Pick up the mirrored shape by pressing the joystick button. Join it to the first half and press the joystick button to put it down. Enlarge your window by using B(order) to fit around the new shape and press O(utline) to define this new shape. (See O(utline) below).

O(utline): Any shape that you plan to use in a sequence must first be defined as an outlined shape. You define a shape by surrounding it with the window and typing O(utline). When you do this, you will hear a "yoo-hoo" sound while a color wipes back and forth across the outline.

This is a very important step since you can use only defined shapes to create sequences for your animation. Note that an outline includes the space around the shape and therefore determines that shape's position during animation. Therefore, when you stamp out duplicate shapes, it is a good idea to outline each one before moving the window.

If you're not sure which of your drawings on the Shape Page have actually been outlined, press V(iew outlines). Anything on your Shape Page outside of an outline is not available for use in an animation sequence. If you forgot to outline a shape, just move the window over it and press O(utline). Press V(iew outlines) again or any other key to turn off the V(iew outlines) function.

P(en)#: The command for drawing is **P**(en) followed by the Color Number **0**, **1**, **2**, or **3**. Color 0 is the same as the background and so can be used as an eraser. Colors 1, 2 and 3 appear at the top of the screen, numbered from left to right. Typing **H**(elp) toggles the color bar on and off. (Apple owners, see C(olor), above.)

When you type **P**(en)#, a small blinking square appears inside the blinking outline -- this is your pen, which you can move around with the joystick. When you want to draw, hold down the joystick button while moving the joystick. To switch pen colors, type **P**(en) followed by the number of the color you want.

You can also draw by using the cursor keys. These are especially useful for drawing horizontal and vertical lines. Also, if you want to draw two vertical lines exactly the same length, you can count the number of times you press the cursor key for the first line and then repeat it for the second.

R(estore): Use this command to restore an accidentally erased shape (see **E**(rase), above). **R**(estore) will retrieve the last erased shape, provided it is still in memory.

T(rade colors)##: Use this command to trade two colors in a shape -- make Color 1 take the place of Color 3, for example. Thus, if Color 1 is green and Color 3 is red, you can switch them by typing **T**(rade)**13** (read as: trade Color 1 for Color 3). Everything green within the window will become red and everything red will become green. (See Chapter Eight for ideas on creating special effects by trading colors.)

V(iew outlines): Use this command to preview the shapes that have been outlined. Remember that only outlined shapes can be used in an animation sequence. See **O**(utline) above.

W(indow): If you want to move the window around the screen, press **W**(indow). Notice that the border is now fatter. Use the joystick to move the window anywhere on the screen. To pick up and move a shape (without its outline), type **W**(indow), move the window over the shape with the joystick or the cursor keys, then press the button. You can now move the window and its contents. To drop the shape so you can move the window again without its contents, press the button again.

X(tra function): This command allows you to use the Extra Function files of TEXT or SCALE. You have to load these files before you can use them to add text or change a character's width or height. (You can only use one Extra Function file at a time.) Type **U**(tility Menu), select GET file, select EXTRA FUNCTION as the file type, and type the name **TEXT** or **SCALE** followed by **RETURN**.

Once you load the TEXT Extra Function file, you can type letters, numbers, and graphic characters directly onto your Shape or Background Page by typing **X**(tra function), which gives you a screen cursor. Move the cursor around with the cursor keys and type text wherever you like. All upper case alphanumeric characters and punctuation marks are available, as well as the graphics character set, if your computer has one. To exit the TEXT mode, press **ESC**.

By using the SCALE Extra Function file, you can dramatically alter the width or height of a shape. To activate the SCALE function from your Shape Page, move the window over the shape you wish to expand and type **X**(tra function). Now move the joystick up, down, right or left, hold it there and press the button to double the shape's size.

You can also press a number key to produce different scalings. For example, by pressing 3 after you type **X**(tra), you will expand the shape to three times its original size. When the expanded window is the size you want, press the joystick button.

Z(oom): This function allows you to get a close-up shot of your shapes. While in Z(oom) you can move around using the joystick and draw by holding down the joystick button, just as you would in the normal drawing mode. To return to normal drawing mode, press **Z**(oom) again. (Atari owners, use **Z2** and **Z3** for different levels of zoom resizing, and **Z1** to return to normal size.)

Your Director
In the COMPOSE Room, the Director's commands are **A**(ction), **J**(ump)#, **S**(equence)#, **Y**(ank shape), **ESC** and **SPACEBAR**. The Director's job begins when you are ready to put shapes into sequences.

A(ction): This command puts you into the Background Page so that you can play back your animated sequences. After you type **A**(ction) you can start and stop the playback by pressing the **SPACEBAR**.

J(ump)#: This command determines how far shapes move (jump) for each movement of the joystick or press of a cursor key. **J**(ump)**1** causes the shape to move one pixel at a time, **J**(ump)**2** two pixels at a time, and so on through nine pixels. **J**(ump)**0**, the default setting, is for an accelerating jump rate, making the character appear to gain speed as it moves.

S(equence)#: This command is the heart of Movie Maker's animation facility. To create a sequence, first press the **SPACEBAR** to clear any current command. Press **S**(equence)**1** for the first sequence. Use the joystick to position the window over the first shape you want in the sequence and press the button. Then move the window over the second shape and press the joysick button again.

Keep doing this until you have picked up all the shapes for the desired sequence, up to a maximum of 16 shapes per sequence. (Professional animators call each shape in a sequence a CEL. Watch the Help Line as you do this: it should say S1.00 for sequence one, S1.01 for sequence one shape one, S1.02 for sequence one shape two, and so on.

Press A(ction) to go to the Background Page to preview your sequence in action. The first shape of your sequence should be in the middle of the screen. Press the **SPACEBAR** to start and stop the action. You can move the sequence around the screen with the joystick.

If the action of the sequence is not exactly what you want, you can return to the Shape Page and re-draw or re-select shapes for the sequence. Press the **ESC** key to return to the Shape Page. Use the same sequence number as before (S(equence)1) if you want to replace the sequence. If you want to keep the sequence you previewed and create another, press S(equence) 2 for your second sequence.

Note: Whenever you KEEP a Shape Page, any sequences currently defined are saved along with the shapes.

Y(ank): After you have created a number of shapes, you may find that you have unneeded or empty outlined shapes on your Shape Page. Use the Art Department's V(iew outlines) command to see all your outlined shapes. Unneeded or empty outlined shapes can be removed one at a time. First, use the joystick or cursor keys to move the window over the one you wish to remove. Now type Y(ank) and the outline around the shape will vanish with a "swoosh."

If you happen to Y(ank) an outline from a shape that you need, you can get it back because only the outline will have disappeared, while the shape will remain on your Shape Page. To redefine the shape, type W(indow) to create a window. Position the window over the shape and type O(utline).

ESC: The Art Department lets you draw shapes on the Shape Page and backgrounds on the Background Page. Press **ESC** at any time to toggle between one and the other. Backgrounds are drawn just like shapes, but on a separate Background Page. Note that you cannot O(utline) shapes on a Background Page.

SPACEBAR: The **SPACEBAR** will cancel whatever command you are currently using except Z(oom). If you get stuck or if you want to cancel a command, press the **SPACEBAR**. This will take you to a neutral mode without affecting what you were working on, and you can then select other commands.

Your Cameraman

The Cameraman has three commands in COMPOSE: **F**(rame rate)**#**, **K**(wickness)**#**, and **L**(oop)**#**.

F(rame rate): This command lets you adjust the animation speed in frames per second. You can select the frame rate before you view a sequence by pressing **F**(rame rate) followed by a number from **0** to **9**, or you can do it "on the fly" as your animation runs. The higher the frame rate the faster the animation. As you change the frame rate you can see the new setting take effect on the Help Line.

K(wickness)#: This command determines the number of times each shape will appear on the screen. When you set **K**(wickness) to **1**, each shape of your sequence appears on the screen for one frame. If you set it at **3**, each shape remains on screen for three frames.

Normally, you would set the **K**(wickness) rate at 1, since you want each shape to appear once. However, if you were recording an actor on a second track and you wanted to show it moving more slowly than the first actor, you would change the second actor's **K**(wickness) to a higher number. If you were to change only the frame rate, both actors would still move at the same rate relative to each other, because frame rate affects all video tracks equally.

Before you can change the **K**(wickess) you have to stop the action by pressing the **SPACEBAR**. Type **K**(wickness) followed by a number from **1** to **9** and press **RETURN**. Then press the **SPACEBAR** to view your animation at the new frame rate. (See Chapter Eight: Advanced Tips, for more on **K**(wickness).)

L(oop)#: Use this command to cycle through the animation continuously or a specified number of times. You can have a sequence run continuously by typing **L**(oop) followed by a **0** (zero). Or you can set the sequence to cycle a particular number of times by pressing **L**(oop) followed by a number from **1** to **9**.

Different combinations of frame rates, kwicknesses and loops can achieve dramatically different effects. When you find a combination that works for you, make a note of it so you'll remember how to recreate it later.

CHAPTER FIVE: RECORD

The Recording Room is the facility where you create animation files from the shape and background files you saved in the Composing Room or from the library on your Movie Maker disk. All the same crew members plus a new one -- the Soundman -- are available in the Recording Room, but some of them now do different things. (See Figure 6.)

Remember, in COMPOSE you create shapes, so most of the functions there act on shapes. In RECORD you build those shapes into animation files, so these functions now act on sequences and animations. For example, in COMPOSE, the Art Department uses E(rase) to erase shapes, while in RECORD the Cameraman uses E(rase) to erase frames rather than shapes.

Your Stage Manager

The Stage Manager's Utility Menu in the Recording Room is almost identical to his Utility Menu in the Composing Room. The only difference is that where you saw the COMPOSE option on the COMPOSE Utility Menu, you will now see the RECORD option.

The Stage Manager is also in charge of the Help Lines, although they are slightly different from those in COMPOSE. (See Appendix B.) To turn the Help Lines on and off, type H(elp). The Help lines are there to help you remember what you have done, what you are doing, or what you are about to do. If you forget which track you are recording, or whether or not the recorder is on, the Help Line will tell you.

The Director's Commands

In RECORD, the Director's commands are A(ctor)#, J(ump)#, S(equence)#, Y(ank), ESC, and SPACEBAR. When you first enter the Recording Room, you find yourself on the Shape Page where you can review various shapes to decide which ones will be used.

A(ctor)#: Use this command to specify the track number you will be recording. For example, to record a sequence on the first video track, type A(ctor)1. To record on the second video track, type A(ctor)2. Typing A(ctor)# moves you to the Background Page and turns on the recorder, automatically putting it on pause until you activate it by pressing the SPACEBAR. You will also need to specify the sequence number you will be recording on that track. See S(equence)# below.

J(ump)#: Use this command to specify the number of pixels a shape will move each time you move the joystick or press a cursor key. **J(ump)1** causes the shape to move one pixel at a time, **J(ump)2** two pixels at a time, and so on through nine pixels. **J(ump)0**, the default setting, is for an accelerating jump rate, making the character appear to gain speed as it moves.

S(equence)#: Use this command to create a sequence of shapes to use in your animation. To create the first sequence, type **S(equence)1**. Move the outline from one defined shape to another on your Shape Page by moving the joystick left and right. When the outline surrounds the first shape you want in the sequence, press the joystick button.

You will hear a "yoo-hoo" sound to indicate that the shape has been picked up in the sequence, and you will also notice the CEL number on the Help Line increasing by one for each new shape, or cel, you add. Continue moving through the shapes and pick them up in the order in which you want them displayed. Each sequence can include up to 16 shapes.

Your Director can create up to nine separate sequences, so you can have up to nine sequences available when you go to the Background Page to record the animation. To create a second sequence from the Shape Page, type **S(equence)2**. To create the third sequence, type **S(equence)3**, and so on up to **S(equence)9**.

Y(ank): If you have recorded all the sequences you want on the first video track (**A(ctor)1**), but have not yet reached frame 300, you must **Y(ank)** the sequence off the screen, otherwise it will remain on the screen for the rest of the animation. To eliminate a sequence when you are finished with it, stop the recorder (**SPACEBAR**) and type **Y(ank)** to remove it.

The Director can also **Y(ank)** a shape from a single frame. To do this, type **G(oto)** followed by the frame number, type the **A(ctor)#** to position the window over the proper shape, and type **Y(ank)**. To **Y(ank)** the next shape of that sequence from the next frame, **G(oto)** that frame, type the same **A(ctor)#**, then type **Y(ank)**. You can do this for as many frames as you like.

In some cases, you might want to simply reposition a shape within a single frame. To do this, **G(oto)** that frame and type **A(ctor)** followed by the number of the track on which it was recorded. A window will mark the shape, which you can then move to the new screen location with the joystick or cursor keys. Press the joystick button to secure the new location.

To erase an actor entirely from a track, type **F(rame rate)0**, then press the SPACEBAR to single step through the track and type **Y(ank)** for each frame.

ESC: Use this command to toggle between the Shape and Background pages. If you are recording and you want to use the same character in a different sequence, press **ESC** to go back to the Shape Page. Type **S**(equence)**2** for the second sequence, then, using the joystick, move the window across the shapes, grabbing the ones you want by pressing the joystick button. To record the new sequence, press **ESC** to get back to the Background Page and then type **S**(equence)**2**, **A**(ctor)**1**.

SPACEBAR: Use this command to start or stop recording. As you record you can move the shape around the screen with the joystick. For example, if your sequence is of a dog running and you want the dog to run from one side of the screen to the other, you would position the dog on one side, activate the recorder by pressing the **SPACEBAR**, then move the dog across the screen with the joystick while the recorder captures the action. To stop the recorder, press the **SPACEBAR** again.

You can record up to six actors (or video tracks) in a single movie. To record each additional actor, use the Cameraman commands -- **P**(layback), **R**(ewind) or **G**(oto) -- to go to the frame where you will start recording the new track. (You can leave blank frames on any track). Type **A**(ctor) followed by the new track number, and then type **S**(equence)**#** to specify the sequence you will be recording on that track. As before, press the **SPACEBAR** to start and stop the recorder.

Your Cameraman

In the Recording Room, the Cameraman has many of the same functions he had in the Composing Room plus some new ones. The Cameraman commands are **E**(rase frame), **F**(rame rate)**#**, **G**(oto)**###**, **K**(wickness)**#**, **L**(oop)**#**, **P**(layback), **R**(ewind), **Z**(oom), and **/**(frame marker).

F(rame rate)**#**, **K**(wickness)**#**, and **L**(oop)**#** work the same way they do in the Composing Room. **F**(rame rate) followed by a number **1** to **9** adjusts the speed of your animation in frames per second; **K**(wickness) followed by a number **1** to **9** changes the number of frames that each shape in a sequence is visible on the screen; and **L**(oop) followed by a number sets the number of times a particular sequence will cycle through its shapes.

E(rase frame): Use this command to **E**(rase a frame). Use **G**(oto) to get to the frame you want to remove, type **A, N** or **C** to enter recording mode, then type **E**(rase), and that frame will disappear. Be careful when you use this function since there is no way to retrieve an erased frame except by reloading it from a file. Remember also that the program will renumber all subsequent frames accordingly when you erase a frame.

G(oto)###: After you have recorded a sequence of your animation, you can review it from the beginning by typing **G**(oto). If you want to go to a specific frame, type **G**(oto) followed by a three-digit number. Thus, if you wanted to go to the 34th frame of your animation, you would type **G**(oto)**034**. (Always type a three-digit number, even if you have to add zeroes at the beginning.)

P(layback): Once you have recorded a sequence, you can see it again by typing **P**(layback). The Cameraman plays back your footage from the current frame number. Remember that the Director can also stop and start playback by pressing the **SPACEBAR**.

R(ewind): Use this command to play your animation backwards. This function is especially useful if you are looking for a particular frame but you don't know its frame number.

Z(oom): Use this command to record a close-up of the image you are recording. (Not available for the Apple.)

/(frame marker): Sometimes you may want to mark a specific frame and come back to it later. To do this, type **/** when the frame is displayed on screen. This marks the frame so that you can **R**(ewind) right to that frame without having to remember its number. **G**(oto) the frame number and press **/** again to turn the frame marker off.

Your Soundman

Your Soundman is available only in the Recording Room, where he works with the sound effects and music. Note that you should have a completed animation before recording sound. Adding a sound track is a lot like dubbing the sound into a real movie or a TV show -- you can record several audio tracks on top of your video, using a different **V**(oice)# for each one. In fact, each **V**(oice) is an audio track. The Commodore 64 has three voices; the Atari has four; and the Apple has none.

To record any sounds, you first load a SOUND file. There are three sound files—FX (for effects), STRING (for music) and DRAGON (for the dragon movie). To get a file, type **U**(tility Menu), choose GET file from the menu and press **RETURN**. Choose SOUND and press **RETURN**. Type one of the names above, make sure side 1 of the Program Disk is in the drive, and press **RETURN**. The Stage Manager will load that SOUND file and return you to the menu. Choose RECORD to get back to the Recording Room and your animation. Then use the three commands described below.

N(oise): Use this command to activate the sound file. Typing **N**(oise) turns on the recorder and puts it on pause until you press the **SPACEBAR**. To preview the sounds, type **V**(oice)**1** and press the number keys on the top row of the keyboard. As you will see (actually, hear), each number has a different sound effect or musical note associated with it.

Follow the same procedure to hear the sounds associated with each number in the other two tracks.

Q(uiet)#: Use this command to turn off a voice without erasing it from the sound track. First, stop the recorder and then type **Q**(uiet) followed by the voice number. (This is like turning off the monitor to that sound track). If you want to turn off more than one voice, type **Q**(uiet) followed by the appropriate numbers. When you want to reactivate the muted voices again, type **V**(oice) followed by their numbers.

V(oice)#: Use this command to add a soundtrack to your animation. After you have recorded your video tracks, use the Cameraman functions of **P**(layback), **R**(ewind), and **G**(oto) to get to the place in your animation where you want to add sound. Type **N**(oise), then type **V**(oice) followed by the number of the voice track on which you want to record. Type **F**(rame rate) and a number to set a recording rate you can synchronize with.

When you are ready, press the **SPACEBAR** to start recording and press the number keys corresponding to the sounds you want to produce. To stop recording, press the **SPACEBAR**. If you want to stop a sound with the recorder still running, press the number **0**, which represents a state of no sound and will silence any voice the moment you touch it.

If you are unhappy with a sound track, you can erase it by recording over it. For example, if you want to erase Track one (**V**(oice)**1**), you first **G**(oto) the beginning, type **N**(oise), then **V**(oice)**1**. If you don't press any of the number keys while the recorder is running, you will record silence over Track 1. If you do press a number key, those sounds will be recorded over your previous sounds. As you can see, this is just like using a real tape recorder, since you can record over your tape either with silence or with new sounds.

Your Art Department
In the Recording Room, the Art Department is responsible only for color changes (except on the Apple, where color changes are not available in RECORD mode). The commands, **C**(olor)**0**, **C**(olor)**1**, **C**(olor)**2** and **C**(olor)**3**, change the entire color scheme of your animation. In other words, you cannot re-color individual pieces of shapes in RECORD. To do that, you would have to go back to the Composing Room. If you press **C**(olor)**1**, for example, and use the arrow keys to change the hue of that color, everything on the screen that was Color 1 will change hue.

Note also that you can only record one color change at a time, so if you want to change more than one color, G(oto) the beginning again, then select the next color to change. Changing the colors lets you create some interesting effects with things like explosions or sunsets. (See Chapter 8, Advanced Tips, for more on creating effects with color.)

Storing your Animation.
Once you have recorded an animation, the procedure for storing it on disk is just like storing a shape or background page. Because this is the Stage Manager's job, type U(tility Menu). If you are using a single disk drive, you will have to remove the program disk and replace it with a files disk. If you are using two disk drives, make sure you select the second drive as the one for storing your files.

Now, move the highlight bar over the KEEP file option and press **RETURN**. Movie Maker will prompt you for the type of file. Use the highlight bar to select the ANIMATION option and press **RETURN**. The program will then ask for a name for the file. When you give your file a name, you will notice that the name appears immediately at the bottom of the Utility Menu as the current animation (ANI) file. Remember to make notes in your Movie Maker log about the contents of each file you save to disk. That way you won't have to call every file to screen just to see what's in it.
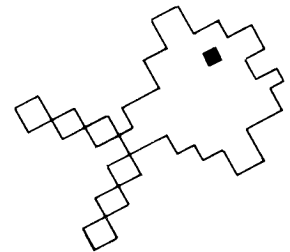
CHAPTER SIX: SMOOTH

The Cutting Room is the facility where you can add the finishing touches to your animation and turn it into a Movie Maker Movie file, or MVM. The only member of your crew in the Cutting Room is the Stage Manager. He will help you "smooth" the flickering out of your animation and add a title and credits.

Your Stage Manager
The Stage Manager's Utility Menu in The Cutting Room contains some of the same options from the other Utility Menus: MAIN Menu, CATALOG files, GET file, SELECT drive and FORMAT disk. There are also three new choices: ENTER beginning text, ENTER ending text, and SMOOTH Animation.

The ENTER beginning text option lets you add scrolling titles to the beginning of your animation. Selecting this option takes you to a blank screen where you can type in one screenful of text for the name of your movie and credits. When you view your movie, these lines will automatically scroll up the screen. While typing text, you can return to the Utility Menu at any time by pressing the **ESC** key. Typing **U**(tility Menu) will not work when you are in this mode.

If text has been entered already, it will appear on the screen when you select ENTER beginning text or ENTER ending text. Otherwise, the screen will be blank and the cursor (depicted as a back arrow) will be at top left. All upper case characters and punctuation marks are available. Maximum text length is 23 lines with 20 characters per line.

Use these keys for editing:
cursor to upper left—CLR/HOME on Commodore, CTRL-N on Apple and Atari;
clear screen—SHIFT-CLR/HOME on Commodore, CTRL-L on Apple and Atari;
delete characters—INS/DEL or type over with spaces;
begin new line—RETURN
preview scrolling text—CTRL-P (not available on the Apple.

Use the same procedure for adding credits to the end of your animation. Select ENTER ending text from the menu and type a message, one screenful in length. When you view your movie, these lines will scroll into position from the bottom of the screen.

Make sure a disk the computer can write to is in the drive, then select the SMOOTH Animation option and type in a name when asked. Your Stage Manager will automatically take out the flickering.

CHAPTER SEVEN: PLAY

The Screening Room is where you can watch (or screen) your final productions. Three crew members are in the Screening Room: the Stage Manager, the Director and the Cameraman. You can't actually make any permanent changes to your movie in this program, although you can view it at different speeds.

Your Stage Manager

The Stage Manager's Utility Menu in PLAY has only four options, two of which you already know: SELECT drive and MAIN Menu. In addition, there is an option allowing you to CATALOG movies. This is just like CATALOG files except that it displays a list of your completed movies (not shapes, backgrounds, or animations). Finally, there is PLAY movie, which, as its name suggests, plays your completed movie back for you to screen.

Your Director

The Director has just two commands in the Screening Room. First, the **SPACEBAR** will start and stop playback of the finished Movie Maker Movie (MVM). Second, **S**(ave screen) lets you save a screen from your movie to disk for later printing with an Okimate 10 color printer. While your movie is playing, type **S**(ave screen). A menu will appear prompting you to type in a name for the screen. When you give the screen a name (up to eight letters), Movie Maker will add its own extension and return you to your movie.

Your Cameraman

Even though your movie is finished by the time you view it in PLAY, your cameraman can still affect the speed of playback by typing **F**(rame rate) followed by a number from **0** to **9**.

You can also set your movie to run continuously by typing / then **SPACEBAR**. To stop a movie from running continuously, type / again.

CHAPTER EIGHT: ADVANCED TIPS FOR COMPUTER ANIMATION

Recording
* It is a good idea to record one actor, or track, from beginning to end (that is, from frame 001 to frame 300). If you don't want to record a character for all 300 frames, Y(ank) it before recording another on a different track. This will prevent the first character from "freezing" on screen at the point you stop recording it.

* Although Movie Maker has a maximum capacity of six *actors* (video tracks) in one movie, that doesn't mean you are limited to that number of *characters.* Thus, although you only have six tracks, you can use them economically by having different characters recorded on different parts of the same track.

* Whether an actor will pass in front of another when their paths cross depends on their relative track numbers. The rule is simple: early tracks (actors) are in the background while later tracks (actors) are in the foreground. For example, if a tree shape is recorded after the first actor and before a third, then the first actor will always pass behind the tree, and the third will always pass in front of it. In addition, by the use of careful editing and by controlling the order of appearance of actors, it is possible to have one actor move both in front of and behind the same actor or piece of scenery.

* Color recording lets you go back and insert different colors in individual frames. When you create explosions, for example, insert a range of different colors in the fragments of various frames. When you create a sunset, use the hues to re-color the sky several times, gradually darkening to night. (This effect is not available in the Apple version.)

* You can record the same sequence of shapes more than once so that you can have two identical characters on the screen at the same time. Have your Cameraman G(oto) the beginning of the animation. Type A(ctor)2 to record on the second video track. Then type S(equence)1 to use the same sequence of shapes for the second character. Follow the same procedure you used when you recorded the first character.

* If you have created more than one sequence for your character, you can change sequences "on the fly" by typing S(equence) followed by the number of the desired sequence while the recorder is running. Remember: you can re-record any track by going back to the beginning of the animation and typing the A(ctor)# of the track you want to record over.

Drawing
* Overlapping outlines of various sizes and proportions can overlap a single shape. Each portion of the shape that has been outlined is a separate shape capable of being sequenced. This technique can be very useful in some situations.

For example, by outlining the shape of a character with both a short and a tall window you can sequence them to make the character appear to be jumping up and down. It also economizes on workspace on your Shape Pages.

* If you make a copy of a shape, put the copy in the outline window and trade colors, then make a sequence alternating between the two shapes, you will get a dramatic animation effect of blinking.

* You can develop shapes and use them as paint brushes. You can D(uplicate) part or all of a shape, then stamp out copies of it on the Background Page one after another, a pixel apart, creating the effect of a unique paint brush.

* Use the Z(oom) command in COMPOSE to study the shapes in our shape files. This will give you ideas on how to leave out the right details when drawing complex figures.

Making Autoplay Disks
* You can playback your finished movies in three different ways. First, you can boot the Movie Maker program disk, load the PLAY section to go to the Screening Room, and select a movie to watch. Second, you can boot the Autoplay side of your disk. While the beginning countdown animation is going from 10 to 1, replace the disk with your movie files disk. At the end of the countdown, Movie Maker will play your movies, one after the other in the order they were recorded onto the disk.

If you want to make your own Autoplay disk, see the Reference Card for your computer.
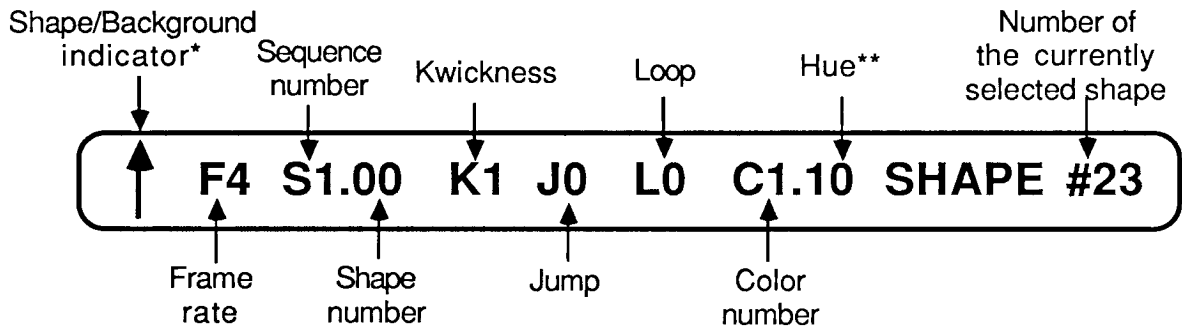
Miscellaneous
* Use the CATALOG files option to see which file names are already in use on the disk before you save a file. You cannot use the same name twice in the same kind of file, although you can use the same name across different files.

For example, you can use the name DOG to store a page of dog shapes, DOG to store the background file of a doghouse, and DOG for the animation file. This is useful if you are planning to use all those files to make a finished movie about a dog. The Stage Manager will add the letters SHP, BKG, or ANI to each file to keep the DOG shape file, the DOG background file, and the DOG animation file separate.

* Back up your work frequently by saving the files to more than one data disk. You can do this as two separate KEEP file operations, using a different blank disk for each. At a minimum you should back up your files at the end of every Movie Maker session.

APPENDIX A:
COMPOSE

THE HELP LINE

Shape/Background indicator*

Sequence number

Kwickness

Loop

Hue**

Number of the currently selected shape

F4 S1.00 K1 J0 L0 C1.10 SHAPE #23

Frame rate

Shape number

Jump

Color number

*On the Commodore 64, page is indicated by SHP(shape) and BKG (background).
On the Apple, page is indicated by S (shape) and B (background).

**On the Atari, you can also change the luminance of a color, so this
reads C1.10.00. The last two digits indicate luminence. On the Apple, you
cannot change the hue of a color, so this reads simply C1. You can, however, choose
colors 1 through 7.

Art Department

B order
C olor
D uplicate
E rase shape
I nsert color
M irror
O utline
P en
R estore
T rade colors
V iew outlines
Window
X tra function
Z oom

Cameraman

Frame rate
Goto
Kwickness
L oop

**An
overview
of who can
do what
in the
COMPOSE
room.**

Director

Action
J ump
Sequence
Yank
ESC swap pages
SB space bar-
start & stop
action

Stage Manager

Help lines
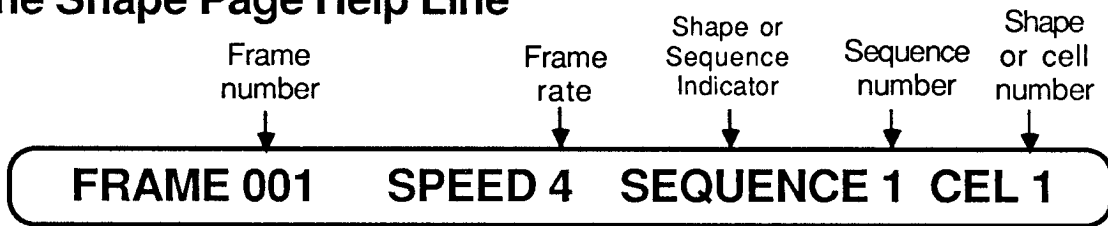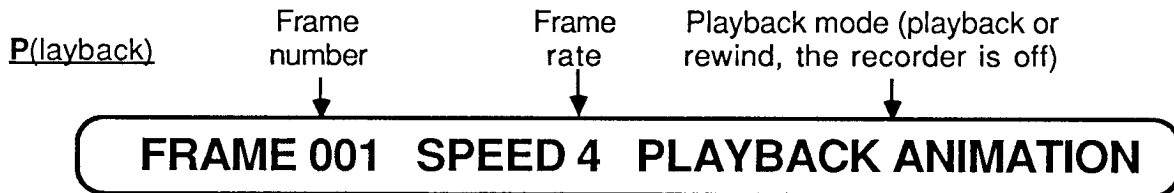**U**tility menu
-CATALOG files
-GET file
-KEEP file
-MAIN MENU
-COMPOSE
-RENAME file
-DELETE file
-FORMAT disks
-SELECT drive
-CLEAR memory

APPENDIX B:
RECORD

The Shape Page Help Line

Frame number	Frame rate	Shape or Sequence Indicator	Sequence number	Shape or cell number
↓	↓	↓	↓	↓

FRAME 001   SPEED 4   SEQUENCE 1 CEL 1

The Background Page Help Lines

A(ctor) Record | Frame number | Frame rate | Recorder is on | Video track number | Sequence number

↓ ↓ ↓ ↓ ↓

FRAME 001 SPEED 4 RECORD ACTOR 1 SEQ 1

P(layback) | Frame number | Frame rate | Playback mode (playback or rewind, the recorder is off)

↓ ↓ ↓

FRAME 001   SPEED 4   PLAYBACK ANIMATION

V(oice) Record **

Frame number · Frame rate · Recorder is on · Audio track number · Sound number

FRAME 001 SPEED 4 RECORD VOICE 1 SOUND 1

C(olor) Record**

Frame number · Frame rate · Color number · Hue***

FRAME 001   SPEED 4   RECORD COLOR 1 12

** Not available on the Apple.
*** On the Atari only , this is followed by luminence number (e.g., 12.2 means hue 12, luminance 2).

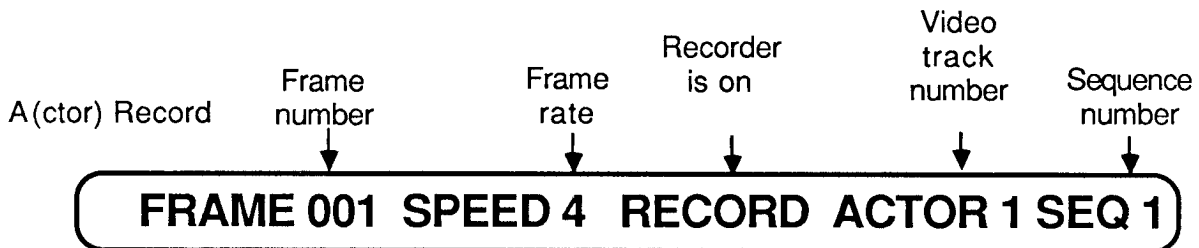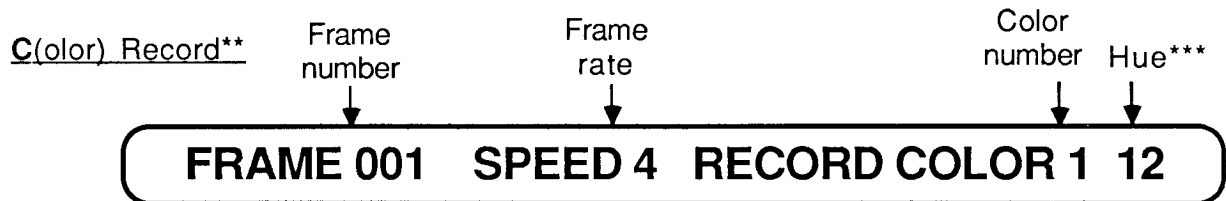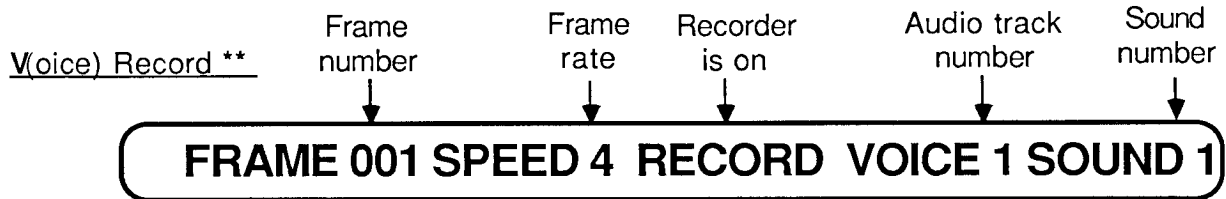| Stage Manager	Cameraman	Director

Help lines
Utility menu
 -CATALOG files
 -GET file
 -KEEP file
 -MAIN MENU
 -RECORD
 -RENAME file
 -DELETE file
 -FORMAT disk
 -SELECT drive
 -CLEAR memory
	Erase frame
	Frame rate
	Goto
	Kwickness
	Loop
	Playback
	Rewind
	/ frame marker
	< back a frame
	> ahead a frame
		Actor
		Jump
		Sequence
		Yank
		ESC swap pages
		SB space bar-
		   start & stop
		   action

Art Dept. [Color]

Soundman   **N**oise
Quiet
Voice

APPENDIX C:
THE PRODUCER'S LINGO

H(elp Line)	toggles Help Line on/off

Art Department

B(order)	Changes size of window
C(olor)#	Changes color from 0-3
	Up/down cursors change luminence (Atari only)
	Left/right cursors change hue (not on Apple)
D(uplicate)	Activates duplicating mode
E(rase)	Erases a shape
I(nsert color)	Fills enclosed area with color
M(irror)	"Flips" a shape
O(utline)	Defines shape for use in sequence
P(en)#	Changes pen color from 0-3
R(estore)	Opposite of E(rase)
T(rade color)##	Trades two color numbers
V(iew outlines)	See which shapes are defined
W(indow)	To gain control of window
X(tra functions)	Extra functions of TEXT or SCALE
Y(ank)	Removes an outline from a shape
Z(oom)	Enlarge view to pixel level

Director

A(ction)	To preview sequence in COMPOSE
A(ctor)**#**	Choose Actor 1-6 in RECORD
J(ump)**#**	Set movement pixel increment 0-9
S(equence)**#**	Define a sequence
Y(ank)	Removes a character from a track
ESC	Toggles shape/background pages
SPACEBAR	Starts and stops the action

Cameraman

E(rase frame)	Removes entire frame
F(rame rate)**#**	Speed up or slow down action
G(oto)**###**	Go to specific frame number
K(wickness)**#**	adjust the pixel animation rate
L(oop)**#**	repeat a sequence a set number of times
P(layback)	Activates playback mode
R(ewind)	Activates rewind mode
Z(oom)	Zooms camera on object
<	Move back one frame
>	Move forward one frame
/	Insert frame marker

Sound Man

N(oise)	Turns on music capability
V(oice)**#**	Turns on voice 1-3
Q(uiet)**#**	Turns off voice 1-3
0	Turns off sound of default voice

APPENDIX D:
101 (ALMOST) THINGS YOU CAN DO
WITH MOVIE MAKER

In case you get up on the wrong side of bed one day and actually run dry on creative things to do with Movie Maker, here is a list of ideas to fall back on. Of course, these are very general ideas, and you can improve and expand on all of them. And if you come up with some unusual or interesting ideas for Movie Maker, we'd like to hear from you.

- Make educational movies to teach colors, letters, numbers, etc. to children. Watch *Sesame Street* for ideas.
- Create a Fourth of July fireworks display.
- Make video greeting cards and send them to your friends and relatives. You might like to take a look at some of Gahan Wilson's ideas on your disk.
- Create animated business charts using your school report cards for data.
- Use Movie Maker to demonstrate the physical workings of a system, such as the human blood stream, or a machine, like a steam engine.
- Create a maze (Background) and a video mouse to run through it.
- Teach words or letters with moving pictures.
- Draw a three-dimensional object and have it rotate in space.
- Make a chorus line of can can dancers.
- Create a neon display sign.
- Create a metamorphosis of one character into another, such as a dog turning into a cat turning into a mouse.
- Recreate your favorite scene from the movie *Jaws*.
- Create a triple-gainer off the high diving board.
- Illustrate the domino effect.
- Create a video horse race.
- Make a game of checkers that plays itself.

- Have one of your characters perform a juggling act.
- Imitate a comic strip from today's newspaper in 300 frames.
- Create the effect of looking at the sky on a starry night. The twinkling effect is very easy; so is the rising moon.
- Create a road scene from the perspective of a car's front grille.
- Show a flower growing from the planting of the seed to the blooming of the petals in "time-lapse" photography style.
- Make a kaleidoscope.
- Demonstrate the fingering of a musical instrument such as a flute or recorder.
- Create a mock-up of a video spacewar game.
- Produce a horror movie.
- Imitate the matter transporter machine from *Star Trek*.
- Create the struggle of a weightlifter in action.
- Build a flock of geese and fly them in formation.
- Plan your next trip by laying out the route as a background, and show a vehicle (the character) travelling from start to finish. Draw the background from a real map.
- Show how a centipede walks.
- Show how a "Slinky" toy walks down the stairs.
- Sing songs by using a bouncing ball over the words.
- Create a movie of a carnival Duck Shoot game.

ELECTRONIC ARTS™