Unlocked,
Unprotected &
Customizable

Beagle Bros™
Micro Software Inc.

FRAME-UP

HIGH-SPEED "SLIDE PROJECTOR" UTILITY
by Tom Weishaar

PROFESSIONAL PRESENTATIONS: Frame-Up lets you use your Apple to make displays of Hi-Res, Lo-Res and Text frames on large-screen or standard monitors.

HIGH SPEED: Frame-Up is FAST, allowing you to display Hi-Res images in 2½ seconds, more than FOUR TIMES faster than normal.

FORWARD & REVERSE: Frame-Up allows you to move through a presentation in forward or REVERSE order (under keyboard or paddle control), to SKIP any frame, and to instantly RE-ARRANGE the order of images.

INCREASED DISK STORAGE: Store up to 17 Hi-Res or 136 Lo-Res/Text frames (or a combination of types) on a single disk. Frame-Up works equally-well with one or two drives.

UNLIMITED SHOW LENGTH: Frame-Up allows you to link any number of disks together without interrupting your presentation.

UNATTENDED OPERATION: Frame-Up lets you present shows that may be left unattended, with each image individually timed to remain on the screen from 1 TO 99 SECONDS. Frame-Up's professional design includes automatic recovery from power outages in Unattended Mode.

TEXT SCREEN EDITOR: Unlike other display utilities, Frame-Up lets you display TEXT IMAGES as well as HI- and Lo-Res graphics. Frame-Up includes an EDITOR that allows you to create black-and-white text frames. You can even add type "live" on the screen during presentations. (Frame-Up does not include software for creating HI- or Lo-Res graphics.)

COPYABLE PRESENTATIONS: Frame-Up includes a copyable Display-Only program, so you can distribute self-displaying presentations to your friends and associates.

EASY TO USE: One-key commands, bi-directional scrolling catalog, on-screen menus, and keyboard/reference chart work together to make Frame-Up simple to operate.

PLUS FREE PEEKS & POKES
11 x 17 WALL CHART INSIDE
Apple's most useful PEEKS, POKES, POINTERS and CALLS on one handy reference poster. An indispensable Apple programming tool.

Frame-Up

Machine language.
Requires Apple II or II-Plus, 48K minimum, DOS 3.3.
Unlocked, unprotected and customizable.

Beagle Bros™
INDOOR SPORTS

Frame-Up

by Tom Weishaar

Published by Beagle Bros
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San Diego, Ca 92103

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A WORD FROM THE AUTHOR:

Frame-Up has been tested extensively, but software authors quickly learn the difficulty of achieving perfection. If you discover any troublesome bugs while using Frame-Up, contact me at the address below (or contact Beagle Bros), and we will coax them out immediately. On other questions we will out-IBM IBM (but remember, the only thing IBM sells in the price range of Frame-Up is printer ribbons).

I hope Frame-Up is fun for you, makes you famous, and gets you big promotions and fat raises.

TOM WEISHAAR
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Overland Park, KS 66207
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A WORD FROM APPLE:

Frame-Up includes DOS 3.3, which is owned by Apple Computer, Inc. Apple says to tell you...

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A WORD FROM BEAGLE BROS:

Even though Apple won't guarantee DOS, we DO guarantee Frame-Up.

Frame-Up is guaranteed to work or your money back. Additional Frame-Up Disks, Instruction Manuals and Keyboard Charts are available as a set for $29.50 plus $1.50 shipping. A damaged disk, chart or book may be exchanged for just the $1.50 shipping charge.

BEAGLE BROS
4315 Sierra Vista
San Diego, Ca 92103

Frame-Up Instructions

GENERAL INFORMATION

Frame-Up helps you make "slide projector" displays on a television screen or computer monitor, using "frames" of Apple graphics or text. These images can be High-Resolution ("Hi-Res") or Low-Resolution ("Low-Res") graphics, or black and white text frames. You can advance frames yourself during a presentation or Frame-Up will do it for you on a timed basis.

Hi- or Low-Res frames can be created by programs that you write or with other software (Beagle Bros' Alpha Plot and Apple Mechanic disks, for example, are versatile Hi-Res tools). Black-and-white Text frames are creatable with Frame-Up's Editing feature, as well as with other software.

The essential characteristics of Frame-Up are speed and ease of use. Using Frame-Up, you can change high-resolution pages in less than 2.5 seconds—four times faster than normal DOS 3.3. Typing is kept to a minimum by single-key commands and a "catalog" that scrolls up and down. Once you enter a "file" name, you will never have to type it in again.

You can use Frame-Up for presentations to customers, friends, clubs, or business associates; for presentations at seminars or conferences; for public displays in store windows, hotel lobbies, or other high-traffic locations; for booth displays at fairs or conventions; for "poster" presentations; for training or sales presentations; and for many other applications.

Included in the package with this manual is the Frame-Up Program/Tutorial disk and a Keyboard Chart. The Keyboard Chart includes a Quick Reference of Frame-Up procedures and shows the functions of various keys in the Editor's "Options Submode".

Before you use Frame-Up the first time it is recommended you work your way through the following section, called "Getting Started". For best results, read it while sitting in front of your computer.

Users coming back to Frame-Up after an absence of more than a week or two will find the Keyboard Chart's Quick Reference very helpful. In addition, the section of the instruction manual called "Summary of Features" was written especially for you.

GETTING STARTED

The Tutorial

The Frame-Up disk includes a tutorial that will introduce you to Frame-Up's features and commands.

To start Frame-Up, you must boot the disk. If you're not sure what that means, see Appendix A, "On the Meaning of 'To Boot'".

Once you have Frame-Up booted, press "T" (for Tutorial), and simply follow the instructions that appear on the screen.

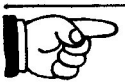
Do it now.

Creating Presentations

Wow! Look at you! Back from the tutorial already and ready to make your own presentation!

Before we can proceed any farther you have to assure me you've made a backup copy of Frame-Up as instructed in the Tutorial. Is this done? Good.

You will need one or more blank or erasable disks—we will soon initialize these as Frame-Up Data Disks. If you want to use Hi- or Low-Resolution graphics as you learn how to get started (and you should), you will need some normal DOS 3.3 disks with graphic files on them.



Frame-Up expects your DOS 3.3 high resolution graphics to be exactly 34 sectors long. Low resolution graphics must be exactly six sectors long. While it is improbable, it is possible for your graphics to be other lengths. Here's how to adjust them, assuming a file name "MOTHER-IN-LAW".

From Basic enter these DOS commands:

```
"BLOAD MOTHER-IN-LAW,A$2000"
"DELETE MOTHER-IN-LAW"
"BSAVE MOTHER-IN-LAW,A$2000,L$2000"
```

If you are dealing with a low resolution graphic, substitute "L$400" for "L$2000" in the final command. Don't skip the commas or dollar signs or we will all be in trouble.

If Frame-Up isn't already booted, do it now. Start the tutorial by pressing "T". If you have two disk drives, set the Donor Drive to "2" as described in the tutorial (Press <O>ther commands and <D>onor--Note: both drives must be in the same slot). We are about to <I>nitialize your first data disk.

INITIALIZING DATA DISKS

All disks used with Frame-Up must be INITIALIZED using Frame-Up. Start, of course, with a blank or erasable disk. It doesn't count if you have used DOS's INIT routine on the disk; you've GOT to reinitialize with Frame-up or the disk won't work. After a disk is initialized it becomes a Frame-Up DATA DISK, and you can add images to it for your presentations.

Frame-Up data disks can no longer be used with normal DOS 3.3. If you try it by mistake (or on purpose), it will do no harm (unless you re-initialize it with DOS, which will erase your Frame-Up data and turn it back into a DOS disk). If you attempt to load something from a Frame-Up data disk, you will get a "FILE NOT FOUND" message. If you attempt to save something, you will get a "DISK FULL" message (even if the disk is empty as far as Frame-Up is concerned). "CATALOG" will make a disk identify itself as a Frame-Up data disk, but you will not be able to see what is on it.

Disks you initialize always take on some of the features of your system at the time of initialization. These include the disk drive settings, the disk name, and the printer parameters.

Your disk drive settings should now be correct (both Reigning and Donor set to "1" if you have one drive; Reigning set to "1" and Donor set to "2" if you have two drives). If you would like to name your new disks now, use <O>ther commands and <C>hange disk name. If you are interested in setting the printer parameters now, skip back to the section called "Using <@>Print". These things can all be updated at any time, so it is not mandatory to set them now.

When you are ready, press <O>ther commands and <I>nitialize disk. You will be instructed to insert the disk to be initialized into the Reigning Drive. When you press <RETURN>, the disk will be erased and initialized. MAKE VERY SURE YOU PUT THE DISK IN THE CORRECT DRIVE (the screen instructions will tell you which one) OR YOU COULD ERASE SOMETHING YOU DON'T WANT ERASED.

While the disk is being initialized, you will be asked whether you want a "Display Module" placed on the disk. Say <Y>es this time, so you will have something to look at when we discuss this module later in the manual. While the disk is initializing you can also put your Frame-Up Program/Tutorial disk away. You normally won't need it again (unless you want to refer to the Tutorial) until the beginning of your next session on the computer.

When the initialization procedure is complete, the disk you have just initialized will automatically become the Reigning Disk. You will immediately notice something new: a "Disk Empty" message in the middle of the main command page. To get rid of this nasty message, the thing to do is to get something on this disk. Here's the procedure:

ADDING AND INSERTING FRAMES

Press <I>nsert or <A>dd. Enter one of the four possible types (H, L, M, or T--your choices appear in the "menu" area). Enter a name and press <RETURN>.

Remember the name can be any combination of letters or numbers; it can be exactly the same as another name; or it can even be blank; Frame-Up doesn't care. And the name doesn't have to be the same as the name of the file on the DOS 3.3 disk. In fact, sometimes it CAN'T be, because Frame-Up names can only be 21 characters long while DOS names can be as long as 30 characters. But don't worry; there is no relationship between the Frame-Up name and the DOS name.

At this point Frame-Up will ask you where the new page will come from. You can tell it "from a <D>OS 3.3 disk", "from a <F>rame-Up Data Disk", or "from the <K>eyboard". The exact procedure from this point depends upon your answer:

Loading Frames From Normal DOS 3.3 Disks

Press <D>OS 3.3. You will be prompted to insert a DOS disk. You will then be shown all of the files on that disk that could be of the type you have selected. If you select <H>i-Res, ONLY Hi-Res file names will appear. If you don't see a file name you expect, go back two pointing fingers and read "Frame-Up expects...".

Scroll to the file you want to add to your Frame-Up disk with the arrow keys, then hit <RETURN>. Frameup will immediately load the file. You don't need to memorize the filename or even type it in. What could be easier?

If the file you're looking for wasn't on the first disk you tried, you can look for it on another by pressing <A>nother disk.

Text Files on normal-DOS disks can also be <I>nserted or <A>dded to Frame-Up disks quite easily. Frame-Up will read up to 24 lines from any Text File and create a black and white text frame out of it. If any of the lines in the DOS file are longer than 40 characters, Frame-Up will "wrap" them—not very pretty—so remember the 40 character limit.

Loading Frames From Other Frame-Up Disks

So far, the only Frame-Up disk you have is the one we're adding things to. But we can borrow something from the tutorial. So press <F>rame-Up after selecting <I>nsert or <A>dd and entering a file type and name. Get your Tutorial disk back out and put it in the Donor Drive.

This time you'll see all the files on the disk. Scroll to the one you want and press <RETURN>. (The "Disk Space" refers to the Donor disk when the Donor Frame List is shown.)

When you are loading frames from Frame-Up data disks, the Frame List will include all of the frames on the disk; it will not be whittled down to include only frames of the type you have specified. If you select a frame of a type other than what you originally said you wanted, you will be reminded of your choice and asked to select another frame.

It may sound odd, but your Reigning Disk can also be your Donor Disk. This is useful for making copies of text frames. You might remember that in the tutorial several frames had a copy of the Main Command Menu at the bottom of the page. This was actually only typed once; several copies of this frame were made and the other text was added to each.

To use the Reigning Disk as Donor with one drive, just press a <KEY> when prompted to insert the donor disk (it's already in the drive). If you have two drives, you have to either reset the Donor Drive, or move the Reigning disk from one drive to the other and back again. When the Donor Frame List appears you will notice the item the nibs point to has a flashing "I" for its "type". This is the item you are now Inserting—it doesn't really exist yet. Simply scroll to the frame you want to copy and press <RETURN>.

Creating Frames From the Keyboard

It is possible to create text frames using Frame-Up's built-in text editor. If you want to do that now, skip back to the section called "Using <*>Edit".

Now you should have the hang of it. Once you have several frames on your disk you can show them.

Giving Presentations

Frame-Up provides you two methods of displaying your frames. In MANUAL MODE, the frames change at your command. In TIMED MODE, the frames change automatically on a timed basis.

MANUAL MODE

When you are ready to make a presentation, you will usually begin by booting the Frame-Up Program disk, unless the program is already running. After booting Frame-Up remove the Program/Tutorial disk from the drive and put it away.

Insert the disk you want to present in the disk drive and make it reign by pressing <RETURN>. When the Frame List comes up, you will notice that it points to wherever you were the last time this disk reigned. If this is not where you want to start, scroll to your starting frame. Then press <RETURN> again.

You are now in "Manual Show" mode. When you press the Right Arrow Key or the paddle-1 button, the frame will advance. The Left Arrow Key or the paddle-0 button will move your show back one frame. From the end of the show you advance to the beginning. From the beginning you can back-up to the end.

If your paddle buttons won't work, TURN OFF YOUR APPLE and make sure they are properly connected. Then reboot Frame-Up. While it is booting, do not touch the paddle buttons. If you do, Frame-Up will be tricked into thinking your paddles are not connected.

Features of Manual Show Mode

While in Manual Show mode, you can do three things besides advance slides forward and back; <*>Edit, <@>Print, and change to a <^>New disk. These commands are all initiated by a shifted character to make it harder to enter them accidentally during a presentation.

<*>. You can edit Text frames as a part of your presentation. Simply press <*>Edit. If the frame currently displayed is a Text frame, you will get a cursor in the position you left it the last time you edited this frame.

For more information on what you can do then, see "Using <*>Edit". When you leave Edit Mode, you will be returned to Manual Show mode, and you can continue your presentation.

<@>. You can <@>Print frames. To use this feature the Printer Parameters must be set correctly. If they are not, either nothing will happen or your computer will "hang". This will disrupt your show and cause you some embarrassment, so see the section "Using <@>Print" and TEST <@>Print before trying to use it in a presentation. You should also watch what happens to your screen while a frame is printing. (It varies from printer to printer.) This may affect your decision on whether to use <@>Print during a presentation.

<^>. You can link data disks together. If your presentation will not fit on one disk, simply put it on several disks. Frame-Up doesn't care. Use as many disks as you need. When you reach the end of one disk insert the next one in the drive and press <^>New. Frame-Up will display the FIRST FRAME on that disk and you can continue your presentation without interruption. If you have two drives, put the new disk in the drive that is not currently active.

Ending a Manual Presentation

When you are finished with your presentation, turn off the monitor or TV first (unless you don't mind your audience seeing the "backstage" workings of Frame-Up) press <ESC> and <Q>uit. When the disk drive light goes out you can turn off your Apple.

On the other hand, if someone wants to see a particular frame again use <ESC> to get to the Frame List. Then you can scroll to any frame and re-show it immediately.

(T)IMED MODE

Frame-Up can also be used to display frames in unattended situations. Each frame can be set to appear on the screen from 1 to 99 seconds.

Setting the Times

When you have all the frames for your presentation on a disk, press <T>imed Show. A list of times will appear on the right side of the Frame List. In the beginning these will all be set to zero. You simply enter the amount of time you want each

frame displayed. You can enter numbers from 0 to 99 (over a minute and a half).

If you enter zero, the frame will be skipped in Timed Show Mode.

If you enter very low numbers, timings will not be exact. Text and lo-res frames will change in about 1/4 second when the time is set to "1", while hi-res frames will take about 1-1/4 seconds. Slow-speed animation of graphics is not out of the question using Frame-Up. See page 26 for more regarding animation.

To start a timed show, press <B>egin while the times are displayed on the screen. The show will start and will continue unattended until someone presses <ESC>, the computer is turned off, or the power goes out. For truly unattended operation, Frame-Up can be set up to automatically recover from power outages. See Appendix B: "Extended Unattended Operation".

Features of Timed Show Mode

In addition to times, it is also possible to insert "S" and "^" in the time list.

<^>. When Frame-Up encounters "^" in a time list, it switches to a new disk. This is similar to the operation of <^>New in Manual Show mode. However, note that the frame that is marked "^" is not shown--it must be a dummy frame. Effective use of this option requires two disk drives and is limited to the number of frames that will fit on two disks.

<S>. "S" in a time list stands for "Stop". When Frame-Up encounters a Stop in Timed Show Mode, it does indeed stop and will not continue until someone presses the right arrow key or the paddle-1 button. You can use this feature if you want your display to stop at frame 1, for example, until some passerby takes an interest and presses a button you have made available. Then the show will start.

Whenever there is an "S" in a time list, the left arrow key and the paddle-0 button are also activated. Pressing either of these causes Frame-Up to reset itself to the last frame marked "Stop". You can use this for a "start over" button in your display.

COMBINED MODE

Frame-Up doesn't care how many Stops are in a time list. In fact, if every frame is marked "Stop", operation becomes very similar to Normal Show Mode. The only difference is that the <*>Edit, <@>Print, and <^>New commands are not available from the

keyboard. Because of this you can create combination presentations where sections of the show advance at your command and other sections advance automatically while you walk through the audience or whatever. Just put "Stops" on all the frames you want to handle manually and "times" on the others. There's the making of a nice Magic Show here if you can get your timing right!

USING (^)NEW

The <^>New command is used to depose the current Reigning Disk and to enthrone another. It's as simple as that--but perhaps we should explain the metaphor in more detail.

The Reigning Disk is the currently active disk. When you are creating a presentation, it is the disk your new frames are being saved on. When you are giving a presentation, it is the disk your frames are being shown from.

When you want to change to a new Reigning Disk, Frame-Up has to do two things. It must SAVE the Frame List of the OLD Reigning Disk; it must LOAD the Frame List of the NEW Reigning Disk.

The command works in slightly different ways depending on which mode Frame-Up is in when it is used.

(^)NEW FROM COMMAND MODE

When you press <^>New from command mode, the first thing that happens is the disk drive comes on so Frame-Up can save the current Frame List. In this case, if you change disks BEFORE pressing <^>New, the disk Frame-Up wants to write on won't be in the drive. It will prompt you to "INSERT THE REIGNING DISK". What it means here is the OLD Reigning Disk. You will not be able to continue until Frame-Up saves what it needs to save on that Disk.

Once the save is completed, the "Starting Command Menu" will appear on the screen. Now you may insert the NEW Reigning Disk and press <RETURN>. The new disk's Frame List will be loaded and you will have a new King.

(^)NEW FROM MANUAL DISPLAY MODE

Whenever you enter Manual Display Mode, Frame-Up automatically saves the Frame List. This is so that you can link together Data Disks without interrupting your presentation. When you press <^>New from Manual Display Mode, Frame-Up does not have to save anything—it is already done. It can go immediately to the new Data Disk.

One-Drive Systems

If Frame-Up thinks you have ONE disk drive (both Reigning Drive and Donor Drive set to "1") and you are in Manual Display Mode, you can link disks together by removing the current disk from the drive, inserting the next one, and pressing <^>New. The Frame List on the new disk will be loaded and your presentation will continue—uninterrupted—with the first frame on that disk.

Caution: If you change disks, get distracted, and forget to press <^>New, Frame-Up can get very confused. If the frames on your new disk are not coming up in the correct order or are terribly garbled, it is a sure sign you forgot to press <^>New.

Two-Drive Systems

If Frame-Up thinks you have TWO disk drives (either Reigning Drive or Donor Drive set to "2", or both) and you are in Manual Display Mode, you can link disks together by putting the new disk in the non-active drive and pressing <^>New. Frame-Up will switch drives as well as disks.

If your entire presentation fits on two disks you can obviously switch back and forth from disk to disk by pressing <^>New. If your presentation is on more than two disks that's ok too; you can insert the next disk in the non-active drive and press <^>New all day long.

(^)NEW FROM TIMED DISPLAY MODE

As in Manual Mode, whenever you <B>egin a Timed Display, Frame-Up first saves the current Frame-List in preparation for a <^>New command (this explains why the first frame you show takes slightly longer to appear on the screen than other ones).

In Timed Display Mode you put the <^> on a dummy frame in the time list. When that frame's turn comes, Frame-Up, instead of displaying it, executes a <^>New command.

If you only have one disk drive, <^>New in Timed Display mode makes little sense—it merely starts the current disk over.

With two drives, of course, the command causes a switch to the non-active drive. In an unattended situation, the last frame on that disk should also be a <^>New dummy so that the show will start over at the beginning of the first disk.

If two disks are used and both have a <^> in their FIRST frame, pressing <B>egin timed show will cause you to lose control of your computer for the rest of your natural life or until you turn it off.

USING (*)EDIT

The Edit Mode is used to create or change black-and-white Text frames. Edit Mode can be reached from either the Main Command Menu or from Manual Display mode. When you leave the editor you will return to where you were. Thus you can use the editor during presentations without disrupting your show with the Main Command Page.

The editor has two submodes, "type" and "options":

Type Submode

The Type Submode is very straightforward. In this mode, all keys pressed appear on the screen at the position of the cursor. The cursor can be moved right and left with the arrow keys and up and down with CTRL-A and CTRL-Z. The "A" and "Z" keys are right next to each other and to the control key, making their usage very easy.

In the Type Submode, pressing <RETURN> works like the carriage return on a typewriter—the cursor is moved down one line and to the left margin. In addition, <RETURN> clears the end of the line, just as it does in most applications on the Apple.

Pressing <ESC> will cause you to leave the editor and return to where you were when you pressed <*>Edit. The only other command available from the Type Submode is <CTRL-O>ptions.

Options Submode

While in the Editor's Type Submode, press <CTRL-O> to enter Options Submode. You will hear a quiet ticking coming from your computer. This is how Frame-Up indicates to you that you are in the Options Submode. There is no visual indication.

It is nearly impossible to use the Options Submode without first putting your Key-Chart in place above the keyboard. Almost all of the commands available in this submode are entered by pressing the number keys. The Key-Chart shows you the effect of each key.

Keys 1 through 4 are assigned two commands each. If you hold down the shift key you will get the upper command. Otherwise you will get the lower command. For the other keys it doesn't matter whether you hold down the shift key or not.

The commands and their effects are:

Exits

To leave the Options Submode and return to the Type Submode you can press either <RETURN> or the <SPACE BAR>.

To leave the editor entirely press <ESC>.

Cursor Movement

From the Options Submode, the ARROWS and CTRL-A/CTRL-Z continue to move the cursor. In fact, in the options submode, "A" and "Z" will move the cursor whether <CTRL> is pressed or

not. In addition, the standard Apple I-M-J-K (up-down-left-right) cursor moves are available from the Options Submode.

Gobble/Paint

Pressing the "comma/less than" key (either shifted or unshifted) causes the cursor to move backwards and GOBBLE text characters as it goes. This can be used to erase characters or to demonstrate the basic characteristic of Pac-Man.

Unlike Pac-Man, the last 256 characters you have gobbled are saved, and can be restored to their original position or anywhere else on the screen by pressing the "period/greater than" key (either shifted or unshifted). This causes the cursor to move forward and PAINT on the screen whatever has been most recently gobbled.

Use Gobble and Paint together to move things around on the screen. (Also see Insert and Delete for this.)

Hint: When using Gobble and Paint to insert or delete a word or two, the spaces at the right end of each line cause problems. When you are Gobbling, skip over these spaces by pressing the left arrow key. When Painting, you can put spaces back in with the right arrow key.

Gobble and Paint can also be used to move text from frame to frame. You can gobble text (remember the 256 character limit—a little over 6 lines) on one frame, leave the editor, display another frame, reenter the editor, and paint the old text on the new frame.

Center

This command centers the line the cursor is on. What it centers is everything in between the left-most non-blank character and the right-most non-blank character. In this context, reverse or flashing blanks are treated as "non-blank" characters.

Home

This command moves the cursor to the top-left corner of the screen. Unlike the Applesoft "Home" command, it does not erase the screen. There is no single key command to erase the screen. If you want to do it, however, the easiest way is to use Home, then hold down the <RETURN> and <REPT> keys. The screen will clear very quickly.

Vbar

This command allows you to make vertical bars consisting of any character. It replicates the cursor character one line above (if shifted) or below the cursor position. Used with the <REPT> key, a vertical bar consisting of any character can be made very quickly. If you start with a blank, the command will "erase" a vertical bar.

For example, to make a vertical bar consisting of asterisks,

enter an asterisk, use the left arrow to backspace over it, enter <CTRL-O>ptions, and press the VBAR repeatedly. A bar of asterisks will grow down from your first one. To erase the bar, use <CTRL-Z> to put the cursor on a blank space below the bar, and press the VBAR key and the shift key at the same time. A bar consisting of blanks will grow up, erasing your asterisk bar. A bar can consist of any character—normal, inverse, or flashing (see below). But it depends on the character you start with—not on the current normal/inverse/flash setting.

Insert/Delete

INSERT puts a blank line in your frame at the cursor position. If used with shift, the line the cursor is on and those ABOVE it will move up (the top line will disappear from the screen). If unshifted, the line the cursor is on and those BELOW it will move down (the bottom line will disappear—once gone, these top and bottom lines cannot be restored).

DELETE removes the line at the cursor position. Used with shift, the lines ABOVE the cursor move down and a new blank line will be placed at the top. Used unshifted, the lines BELOW the cursor will move up—the new blank line will appear at the bottom.

The Insert and Delete commands can be used to move blocks of text up and down on the page as well as to simply insert and delete lines.

If you are trying to use one of these commands and "nothing happens", reverse whatever you are doing with the shift key. Once you get the hang of it you will see the shift key's proper position is intuitive—which means if you think very long about whether to press it or not you'll likely get it wrong.

Normal/Inverse/Flash

Pressing these command-keys changes the way characters entered from Type Submode are displayed. These three commands also automatically return you to the Type Submode so you can immediately enter text. (All other Optional commands leave you in the Options Submode. You must press the <SPACE BAR> or <RETURN> to reenter the Type Submode. See "Exits" above.)

Brackets/Backslash/Underscore

These keys, from the Options Submode, enter the shown character. These are not usually available from the Apple keyboard even though all Apples are capable of displaying them. It doesn't matter whether you press the shift key or not when entering these.

The underscore is not as valuable as it may at first seem. You cannot actually put a line under anything—when you use this key it erases the character that was already there. The underscore can only appear in a character cell by itself. This is not a bug in Frame-Up. It is a limitation of the Apple (and

perhaps explains why there's no underscore on the keyboard to begin with).

Bars

Pressing this command removes or replaces the bars at the top and bottom of the screen. The top bar will always contain the current disk name. This can be changed (or made blank) by using the <C>hange disk name command on the <O>ther commands menu. If the disk name is changed, subsequent display will show the new name in the top bar, not the name used at the time of editing.

To prevent this, you must delete the bars and then reenter them by hand using "Inverse" and the space bar. This will make whatever you write in the bar a permanent part of the frame.

SAVING FRAMES

Have you noticed Frame-Up has no "Save" command? This is because Saves are done automatically. Everytime you press <ESC> from Edit Mode the disk will come on briefly as the frame is saved. You will barely notice it.

This means that once you start re-working a frame there is no legal way to "start over", even if you mess it up. If you want to make some trial changes on a frame make a spare copy of it first. (See page 6 for instructions on how to make copies of a frame).

PRESSING RESET

There is also an illegal way to avoid saving a frame you have messed up. You can press <RESET>. (On newer Apples it's <CTRL-RESET>.) On most Apples this will take you back to the Starting Command Menu. When you reload your data disk you will find it as it was just before you entered Edit Mode.

On a few Apples pressing <RESET> just puts an asterisk on your screen that gives you lots of funny numbers whenever you hit <RETURN>. In this case you must enter the magical phrase "3D0G" and press <RETURN>. That's 3-D-ZERO-G; not 3-D-OH-G.

In general, the use of the <RESET> key should be avoided. It will always cause you to lose your most recent changes. IF YOU HIT <RESET> WHILE FRAME-UP IS SAVING SOMETHING ON THE DISK, YOU COULD LOSE ALL THE DATA ON THE DISK; a sad event indeed.

USING (@)PRINT

The <@>Print command allows you to print some types of frames on your printer. The command is accessible from both the Main Command Menu and from Manual Display mode. It is not accessible from <*>Edit.

DISCLAIMER AND WARNING!

Frame-Up's Print feature was added for flexibility. However, it is probably the most "dangerous" feature Frame-Up has in terms of causing unexpected "bugs".

The problem is that Frame-Up has no way to tell if there is really a printer connected to the computer or if the printer is turned on. When you press <@>Print from Manual Display mode (on purpose or accidentally), Frame-Up will "hang" if there is no printer in the slot you have specified or if it isn't turned on.

This will disrupt your presentation. You will have to press <RESET> or turn your Apple off and start your presentation over from where you left off.

For this reason it is recommended that you leave the "Printer Slot" (described below) set to ZERO unless <@>Print is an important feature for you. The <@>Print command can't hang you up if the slot is set to zero.

If <@>Print is important for your application, become throughly familiar with its features and limitations before trying to use it during a presentation.

THE PRINTER PARAMETERS

Before you can use <@>Print, you must set the Printer Parameters. To do this, press <O>ther commands, then <P>rinter parameters. A small form will appear on the screen. It looks like this:

```
PRINTER SLOT [0]  0=NO PRINTER
EXTRA LINE   [N]  <Y/N>
TEXT SETUP   [                ]
GRAPH SETUP  [                ]
```

To fill in the form you can use the same cursor controls and other commands as in <@>Edit Mode.

Naturally, when you are finished filling in the form, press <ESC>. Frame-Up will scan the form, and if everything you have entered makes sense to Frame-Up, you will return to the Main Command Menu. If Frame-Up can't understand something, the cursor will reappear at the first item it could not understand.

Printer Slot

"Printer Slot" should contain the number of the slot your printer interface card is in. If you do not have a printer just leave this set to zero. Only numbers from 0 to 7 will be accepted.

Extra Line

"Extra Line" tells Frame-Up whether or not to send little tidbits called "linefeeds" to your printer.† If your printer double spaces when it shouldn't change "Extra Line" to "N"o. If your printer types all the lines of a page on top of one another, change "Extra Line" to "Y"es.

Setup

The "Text Setup" and "Graph Setup" areas allow you to enter control codes that will be sent to your printer. These control codes can do such things as set margins, change typefaces, emphasize type, and so on.

These codes are unique to your printer and interface card. You must consult the manuals that came with your printer and interface card to find out the codes for your equipment.

Usually these codes include CTRL-characters. This makes things a bit complicated, as some of these characters are difficult or impossible to enter from the keyboard or display on the screen. Frame-Up uses the same scheme as VisiCalc for entering these codes. The scheme relies on the "^" (shift-N) character. To send your printer:

ESC	type	^E
RETURN	type	^R
control characters	type	^C*
hexadecimal digits	type	^H**
^	type	^^

Replace the * with the letter or number you need. For example:

control-C	^CC
control-Q	^CQ
hex FF	^HFF
hex C	^H0C (Hex must have two digits.)

These "^codes" work only in the Printer Parameter form. When you enter the <@>Print command, Frame-Up sends your printer a <RETURN>, your Setup code, and another <RETURN>. Trailing blanks in the Setup code will be deleted.

To print Hi-Res graphics, your printer interface card must have the correct software and your printer must be capable of printing graphics. Frame-Up does not contain any software for printing graphics. When you try to <@>Print a high resolution graphic, all Frame-Up does is send the Graph Setup code to your printer. Your printer interface card must respond to this by printing the graph.

For example, with the Apple Silentype printer, enter "^CQ" (control-Q) in the Graph Setup area. When you try to print a

† Linefeeds come in packages about the size of a box of cough drops. Apples come with a good supply, but if you have lost yours, you can contact Minnie Assembler at Beagle Bros and she will send you some more. Please add $1.50 for shipping and handling.

high resolution page, Frame-Up will send this to the Silentype. The Silentype's interface card responds by printing the graph.

Frame-Up includes all the software needed to send a Text frame to your printer. Depending on how your interface card works, it is probable that your video screen will go blank or maybe crazy while the frame is printing. Don't panic. It will all right itself when the printing is done.

You can stop the printing of a Text frame by pressing <ESC>. Stopping the printing of a Hi-Res page depends, again, on your printer interface card.

Frame-Up does not support the printing of Low-Res graphics.

To use <@>Print from Manual Display mode, just press <@>. To use it from the Main Command Menu, first point the nibs at the frame you want to print.

USING THE DISPLAY MODULE

The Display Module gives Frame-Up data disks the power to self-display. This facilitates the distribution of your presentations to your associates. They can display your presentation at any time on any Apple without having to boot a $29.50 Frame-Up Program/Tutorial disk.

The Frame-Up Display Module is NOT a Public Domain program. However, it may be copied and distributed, in its unmodified form, by purchasers of Frame-Up. If you'll help us show people what a great program Frame-Up is that's fine with us.

The Display Module is installed on Frame-Up data disks when they are initalized. You have a choice at that time of including a display module on the disk or of leaving it off. Once the disk is initialized you can't change your mind—it's either there or it's not.

The advantage of including the Display Module is portability—you can give your presentation without lugging the Frame-Up Program/Tutorial disk around. The disadvantage of including the Display Module is that it takes up space on the data disk (the equivalent of one Hi-Res or six Low-Res/Text frames).

There are three ways to see if an existing data disk includes a display module. The most obvious is to simply boot the disk—if nothing happens, the display module isn't there. From DOS, you can "CATALOG" the disk. If you get a message that says "Boot to Start", the display module is there. Otherwise, the message will say "Boot Frame-Up Program/Tutorial Disk". From Frame-Up press <O>ther commands. A "Y" in the bar at the bottom of the <O>ther commands page indicates the display module is present. "N" indicates it is not.

Features of the Display Module

When a Frame-Up data disk with the Display Module is booted, the booter will see a title page that explains what he or she has is not the complete Frame-Up program. In the middle of the screen will be a message that says either "TIMED DISPLAY UPCOMING" or gives instructions to press the arrow keys. The mode a Display Module will operate in depends on WHICH MODE YOU USED LAST when the disk reigned under the full Frame-Up.

On entry, the Display Module always starts at frame 1. It will not respond to the <*>Edit or <@>Print commands. <^>New still works fine, however.

When the show is finished the user should press <ESC>. This takes the Display Module directly to the "Quit" menu. It will not pass the Frame List. A user can't get to the Frame List if just the Display Module is running. If you decide to use the Display Module rather than the complete Frame-Up program when giving presentations, remember its limitations. You will not be able to make last-minute <S>kips or <M>oves, you can't <*>Edit or <@>Print, and you can't show individual frames by scrolling through the Frame List.

From the "Quit" menu, two additional commands are available. One allows the user to switch <M>odes between Manual and Timed. The other allows changing the number of <D>rives. Neither of these commands create PERMANENT changes—next time the disk is booted it will be back where it started.

To make permanent changes you must make the disk Reign under the complete Frame-Up program; set the drives as you want; display one or more frames in the mode you want; then go back to the Main Command Menu and press <Q>uit or <^>New.

From the Display Module's "Quit" page you can also go back to its Title Page by pressing <ESC> or boot another disk by pressing <RETURN>.

Send your best graphics home to mother on a disk that includes the Frame-Up Display Module. But please, when Mom asks you to make her a copy of the rest of Frame-Up, ask her to BUY it. The price is right, and we need the financial encouragement to write more programs like this one.

SUMMARY OF FEATURES

This section was written for those of you who have used Frame-Up, but not recently enough to remember all the details of how it works. The information is presented under Keywords that describe what you might want to do or find out about.

In addition, you will find the material on the Quick Reference chart very helpful.

Adding Frames

<A>dd is used to insert frames at the bottom of the Frame List. Otherwise it works just like <I>nsert. See Inserting Frames.

Animation

Slow-speed animation sequences are possible using Frame-Up. See page 26 for more information.

Backup

To copy Frame-Up data disks, use the command <B>ackup on the <O>ther Commands Menu. Complete instructions will appear on the screen.

Data Disk

Frame-Up Data Disks are the disks that hold the pages of your presentation. These disks must be initialized with Frame-Up and will no longer be usable by normal DOS. Also see Reigning Disk and Donor Disk.

Delete

The <D>elete command is used to remove frames from a Data Disk. Once removed they are not recoverable. After pressing <D>elete you must press <Y>es to confirm you want the frame deleted. If you want to delete a number of frames from one disk, start with the newest frame and work backwards towards the oldest frame for the best speed.

Disk Name

The Disk Name appears in the bar at the top of the Main Command Menu and on all Text frames that have the "Bars" turned on. ("Bars" on page 15 explains how to turn them on and off.) The name that appears on Text frames is the current disk name—no matter what was there when the frame was created or last edited. To change the disk name press <O>ther commands/<C>hange disk name.

Display Module

The Display Module is a program you can put on your Frame-Up Data Disks when you initialize them. It gives the Data Disks the power to display themselves. For complete information see the section called "Using the Display Module", which begins on page 18.

Donor Disk

The Donor Disk is the disk that will "donate" a Hi- or Low-Res file or Text frame when you <I>nsert or <A>dd. The Donor Disk can be a Frame-Up disk or a DOS disk; it depends on what you specify.

Donor Drive

The Donor Drive is the drive you will put Donor Disks in when you are creating presentations. If you have but one drive, the Donor Drive should always be set to "1".

If you have two drives, set the Donor Drive to "2" (press <Other commands/<D>onor drive).

When you are giving presentations, the Donor Drive becomes the STAND-BY drive. Every time you switch to a <^>New data disk, the Donor Drive will be automatically reset to the non-active drive.

Editing Text Frames

Text frames can be edited before or during a presentation. Effective use of the editor requires the Frame-Up Key-Chart. For more information see the section called "Using <*>Edit", which begins on page 12.

Error Messages

See "User Messages" below.

Frame Names

Frame names appear in the Frame List. You name frames as you <I>nsert or <A>dd them. Frame names can include any characters, can be exactly the same as another frame or can be blank. Frame names do not have to match the file name on a donor disk. Frame names can be changed by pressing <O>ther commands/change frame <N>ame.

Frame Types

Frames can be <T>ext, <H>i-Res graphics, <L>ow-Res graphics, or <M>ixed Low-Res graphics. Mixed Low-Res graphics have four lines of text at the bottom. Frames can be changed from type <L> to type <M> and back by pressing <O>ther commands/change frame <T>ype.

Initializing Data Disks

Press <O>ther commands/<I>nitialize disk and follow the instructions that appear on the screen.

To initialize your FIRST data disk you will have to use the Frame-Up Tutorial as a Reigning Disk. There's no other way to get to the Main Command Menu if you don't have a Data Disk.

Inserting Frames

Scroll to where the new frame should go and press <I>nsert (to put a frame at the END of the frame list use <A>dd). You will be prompted to insert a frame type, name, and source. Follow the instructions that appear in the menu area.

Linking Disks Together

See "Using <^>New on page 10.

Manual Display Mode

To use Manual Display mode scroll to your first frame and press <RETURN>. You are now in Manual Display mode.

From this mode use the arrow keys to advance forward or backward. You can link Data Disks together with <^>New. And you can <*>Edit and <@>Print.

To leave Manual Display mode press <ESC>.

Menus

Frame-Up's on-screen menus appear in the lower part of the screen. They change often as you execute various commands. Learn to refer to the menu area for help.

Move

The <M>ove command allows you to re-arrange the order of the frames in your presentation. To use, scroll to the frame to be moved and press <M>ove. Then scroll to the frame you want immediately below the frame you are moving and press <RETURN>. You can also press <T>op or <B>ottom.

New

The <^>New command is used to depose the current Reigning Disk and enthrone another. See "Using <^>New" on page 10.

Paddles

The buttons on the Apple paddles are closely watched by Frame-Up. The button on paddle-0 works like the right arrow key. Paddle-1's button works like the left arrow key. If the buttons won't do anything, re-boot Frame-Up without touching the buttons.

Printing

See the section called "Using <@>Print", which begins on page 16.

Quit

Use <Q>uit when are done using Frame-Up. Avoid turning off your Apple while Frame-Up is running. It will usually cause you to lose the last few changes you have made.

Reigning Disk

This is the currently active disk. It is the disk you add things to as you create presentations and the disk you get things from when you give presentations.

Reigning Drive

This is the drive the Reigning Disk is in. The Reigning Drive is reset automatically by the <^>New command from either Display Mode.

To reset it from the Main Command Menu, press <O>ther commands/<R>eigning drive. You will be taken to the Starting Command Menu. From there you will be able to enthrone a Data Disk in the new Reigning Drive.

Reset Key

In general, don't touch this key. If you do and get thrown into Apple's Monitor, you can return to Frame-Up by entering "3DOG" (3-D-ZERO-G) and pressing <RETURN>.

Skip

The <S>kip feature lets you leave frames on your data disk but skip them during a presentation. You may want to vary your presentation for specific audiences. <S>kip allows you to do this.

Scroll to the frame you want to Skip and press <S>kip. Frames to be skipped have an inverse file-type letter. To Unskip a frame follow exactly the same procedure and the inverse file-type will disappear.

<S>kip only applies to Manual Display mode. To skip frames in Timed Display mode simply set the time to zero for the frames you want to skip.

Text Files (DOS)

Frame-Up can read DOS Text files and turn them into black-and-white text frames. Up to 24 lines will be read from each file. Things work best if the file's lines are no longer than 40 characters.

VisiCalc Fans: Use VisiCalc's /PF (/PD on older VisiCalcs) command to make spreadsheets that can be used by Frame-Up.

Text Frames

Text frames use the Apple's black-and-white 40-character by 24-line format. They can be created and edited with Frame-Up's built-in Editor. They can also be read from DOS sequential text files.

Timed Display Mode

This mode is used in unattended situations. Each frame can be individually timed from 0 to 99 seconds. You can also <S>top and wait for a keypress and switch to a <^>New disk in your second drive. For further information see "<T>imed Mode" on page 8.

Unskip

Scroll to the frame you want to Unskip and press <S>kip. It works both ways.

User Messages

Frame-Up's user messages are how Frame-Up asks you to do a few things it can't do itself, such as insert disks in the drive. They are also sometimes used to tell you about unusual situations. If you can't get a user message to go away, press <ESC> to reset Frame-Up.

Additional information in presented in the section "Problems with Disks" on the next page.

"INSERT DOS 3.3 DISK"

This message means to put a normal 3.3 disk in the donor drive.

"INSERT DONOR DISK"

This message means to put a Frame-Up Data Disk in the donor drive.

"INSERT REIGNING DISK"

This message means to put the disk that has been active back in the Reigning Drive.

"REMOVE & RE-INSERT DISK"

This is the equivalent of the DOS 3.3 "I/O ERROR". Vast experience has convinced us that 99 per cent of DOS I/O errors can be cured by making sure the disk is in the drive as it should be and the drive door is closed.

TIPS AND TROUBLESHOOTING

Frame-Up was designed to be very easy to use and to operate as automatically as possible. Giving a presentation will give you enough stress without having to worry about software details. We want Frame-Up to be your trusted assistant, not an embarrassment.

Highly automated programs such as Frame-Up can sometimes be tripped up by abnormal situations. This section describes some of the places Frame-Up will trip and tells you how to recover.

Problems During Presentations

PADDLE BUTTONS WON'T WORK

Reboot Frame-Up. Make sure you DO NOT press EITHER paddle button while Frame-Up is booting.

FRAMES OUT OF ORDER OR GARBLED

This is a sure sign you've changed disks but forgot to press <^>New.

(^)NEW RESTARTS OLD DISK

The drives are both set to "1". If you are using two drives, set the Donor Drive to "2". With either one or two drives, remember you must insert your "new" disk before pressing <^>New.

(^)NEW CAUSES "REMOVE & RE-INSERT" MESSAGE

If you press <^>New and nothing happens for about 5 seconds and you then get a message to remove and reinsert the disk, Frame-Up thinks you have two disk drives but you only have one. Press <ESC> to restart, then reset the Donor Drive to "1".

Problems With Disks

New Frames/Other Changes Disappear

Two things can cause new frames you add to disks to disappear. The same things also can cause you to lose <M>oves, <S>kips, some <D>eletes, and other information as well.

The easiest way to cause these problems is to add them to the Frame-Up Tutorial. You can't do it. To prevent accidental damage, Frame-Up won't write any changes on the Program/Tutorial disk.

The other way is avoid using <Q>uit. Whenever you turn off the computer without first using the <Q>uit command you take your disk in your own hands. YOU MUST USE <Q>UIT.

PROBLEMS WITH DOS 3.3 DISKS

If you are trying to get a frame off of a normal 3.3 disk and you repeatedly get a message to REMOVE AND REINSERT the disk, either:

— the disk is in the 3.2 format, not 3.3
— the disk is copy-protected
— the disk is damaged

If you repeatedly get a message to INSERT A DOS 3.3 DISK either:

— the disk in the drive is really a Frame-Up disk
— the disk in the drive not in standard 3.3 format. Frame-Up expects byte-4 of the Volume Table of Contents to be zero on all DOS 3.3 disks. Frame-Up disks have other values at this location. See Appendix C.

If you have a file on a DOS disk that DOES NOT SHOW UP IN THE DONOR FRAME LIST:

— the sector length must be reset. See page 4.

Some Special Tips

ANIMATION

You can create simple slow-speed animation with Frame-Up by creating several frames with slight changes and showing them rapidly in Timed Display mode. Graphs can "grow" or move across the screen and other effects can be created.

The speed at which frames can change is of concern in this application. The exact timing depends on many variables, such as your disk drive speed, the quality of your disks, and so on. However, if you set frames to change at one second intervals in Timed Display mode, you can expect Lo-Res/Text frames to flash by in 1/4 second, and Hi-Res frames in about 1 1/4 seconds.

If you want to use an animated sequence in a presentation you are otherwise giving in Manual Display mode, see the section called "Combined Mode" on page 9. By actually using Timed Display mode but setting the time of your frames to <S>top, you can do a manual display that includes an animated sequence. Use "1" for the time on all the animation frames except the last one, which should also be set to <S>top. At the end of the animation you will be able to repeat it by pressing the left arrow key and then the right arrow key.

TRANSFERRING FRAMES BACK TO DOS 3.3

Frame-Up does not provide any way to transfer frames from Frame-Up disks back to DOS 3.3 disks. If the frame you want to transfer is a Hi-Res frame, however, it can be done—

Load Frame-Up and display the frame you want to transfer.

Immediately leave Frame-Up and boot a Slave Disk (any 3.3 disk you have initialized yourself and NOT transformed with the "Master Create" program). Then enter:

```
BSAVE WHATEVER,A$2000,L$2000 <RETURN>
```

Low-Res and Text frames cannot be transferred back to DOS 3.3.

LOWER CASE

Lower case cannot be entered from the Frame-Up text editor. However, you can create normal 3.3 text files that include lower case with other software. Frame-Up will pick these off 3.3 disks and turn them into frames with the lower case intact.

The Frame-Up text editor does not support lower case for two reasons:

— most lower case chips display text that is not of presentation quality

— frames with lower case turn to trash when displayed on Apples without lower case chips. Since presentations will often enough be created on one Apple but displayed on another, problems could develop.

UTILITY CITY'S SCREENWRITER

At the very last minute we somehow remembered the Beagle Bros disk UTILITY CITY has a super program on it called "Screenwriter". This program allows users to create Frame-Up-like text frames. To make its frames easy to access from Applesoft, however, Utility City's Screenwriter saves them as DOS 3.3 Binary files. And Frame-Up can't access that kind of file for text frames. Boy, are we embarrassed.

For all you Utility City users out there J. Modulo DeBug, one of the Beagle Bros staff programmers, quickly wrote the following program to convert Screenwriter files into DOS 3.3 Text files so you can get them into Frame-Up. We sure hope it works.

```
10  DIM T$(24):D$ =  CHR$ (4): PRINT D$;"BLOAD TEXT SCREEN"
20  FOR Y = 1 TO 24:L = 128 * Y + 1 - (984 *  INT ((Y - 1) /
    8)) + 895: FOR X = L TO L + 39:P =  PEEK (X): POKE X,223:
      T$(Y) = T$(Y) +  CHR$ (P): POKE X,P: NEXT : NEXT
30  PRINT D$;"OPEN SCREENFILE": PRINT D$;"WRITE SCREENFILE":
     FOR X = 1 TO 24: PRINT T$(X): NEXT : PRINT D$;"CLOSE"
```

APPENDIX A:

ON THE MEANING OF "TO BOOT"

Computer lore would have you believe that the term "to boot" is derived from the adage "to pull oneself up by one's bootstraps". This is not, in fact, the case.

Lexical studies conducted by the author under the direction of Professor John Bremner of the University of Kansas (author of "Words on Words" and a renouned authority on such stuff) have conclusively shown that the term "to boot", as applied to computers and disk drives, derives from the the Second Law of Mechanics, to whit: "If it won't work, kick it." (Which is followed by the Third Law: "If all else fails, read the instructions.")

The word "kick" was transformed into the distinctly British word "boot" by Charles Babbage, inventor of the Analytical Engine and an early computer hobbyist in England.

While it is still common practice in large computer installations to give all the computers and disk drives a swift kick every morning to get them started, it was discovered quite early on by Messrs. Wozniak and Jobs that the Apple, being a PERSONAL computer, suffered considerable emotional stress under this procedure. Therefore, they developed the following technique for "booting" Apples:

1. Find the small rectangular box that says, it is hoped, "Drive 1". It has a door on it that you open by pulling up and out on. If there is another disk in the drive, take it out and put it someplace safe. Insert the disk to be "booted" into the drive. The edge with the two small notches goes in first and the disk label should be on top. Close the door.

2. Reach behind the computer with your left hand and grope for the power switch. When you find it, flip it on.

3. If your computer says Apple II "Plus" just above the keyboard, it will come on and tickle the disk drive. Voila, your disk will be "booted".

3a. Some Apples, like mine, are more personal than others. These machines insist on saying hello to you before tickling the disk drive. They put a "*" up on the screen and say "beep", which in the arcane language of the Apple Monitor, means, "Good Day Sir or Madam, it is I, your Apple computer, at your service. What may I do for you at this time?" You, of course,

will want to respond just as politely, so you say "6 Ctrl-P" and press the key marked "RETURN". (To say "Ctrl-P" you hold down the key marked "CTRL" on the left side of the keyboard and press "P" at the same time).

4. If your computer was already turned on, and you have a ">" or a "]" on the screen, you can tell the Apple to boot a disk you have placed in the drive by entering the magic formula "PR#6" and pressing "return".

5. If none of the above works Do Not Kick your Apple. Call what Xerox machines refer to as the "Key Operator", whoever or whatever that is, and ask why in the name of Babbage, Wozniak, and Jobs the disk drive isn't in slot six. The Key Operator will not have a good reason for this and will boot the disk for you, which, if you've gotten this far, is something you deserve.

APPENDIX B:
EXTENDED UNATTENDED OPERATION

There are many applications in which you may want to leave Frame-Up running unattended for extended periods of time. A store window display might run all weekend; an airport display might run for several weeks.

Frame-Up has been provided with some heavy-duty shock absorbers so it can carry out these assignments without failure.

Assuming you have solved the problem of how to keep your computer from being stolen, your biggest problem will be power outages. These can include everything from the cord coming unplugged to actual area-wide loss of power. Frame-Up has been designed so that it can restart itself without any intervention.

For this feature to work your computer must have what is known as the Apple "Autostart ROM". If your computer starts automatically when you turn on the power it has one. If it gives you an asterisk at the bottom of a screen full of junk, it does not; but you can get one from your dealer.

1. The first disk of your show must have the Frame-Up Display Module on it. You get this, if you ask for it, when Frame-Up initializes your data disk.

2. When your disk is ready, but before you press <Q>uit or <^>New, confirm that the number of disk drives is set correctly for the equipment you will be using in the display. Also make sure your LAST use of a Display Mode is <T>imed Display, not Manual Display.

3. Make a backup copy of the disk.

4. Insert the disk in Drive 1 of the equipment to be used in the unattended display. When you turn the equipment on the disk will boot; say "TIMED DISPLAY UPCOMING"; and, after 12 seconds, begin your unattended display. This same series of events will occur whenever power is restored to the computer.

5. If the Frame-Up Display Module is in Manual Display mode on booting instead of Timed Display mode, you must boot the entire Frame-Up program, load the disk, enter Timed Display mode, exit Timed Display mode, and quit. Do not simply change modes using the Display Module's mode change option. While this seems to work, it doesn't change anything on the disk--when the disk reboots it will come up in Manual Mode again.

6. You are now ready for an extended show. Frame-Up will not stop for anything but a disk error. Because of the possibility of disk error disruption, you should use high-quality diskettes with reinforced hub rings. If this is a multi-week display, you should replace the diskettes and clean the drives about once a week.

APPENDIX C:
CUSTOMIZING FRAME-UP

This Appendix presents information of interest to assembly language programmers interested in modifying or studying Frame-Up.

Effective use of this material requires a program that will read and write single disk sectors.

"Beneath Apple DOS" by Don Worth and Pieter Lechner is also highly recommended.

You can reach the Apple Monitor from two points within Frame-Up: the Starting Command Menu and the Quit Menu. In both instances you reach the Monitor by pressing <Shift-Ctrl-M>. This exit is not documented on the menus.

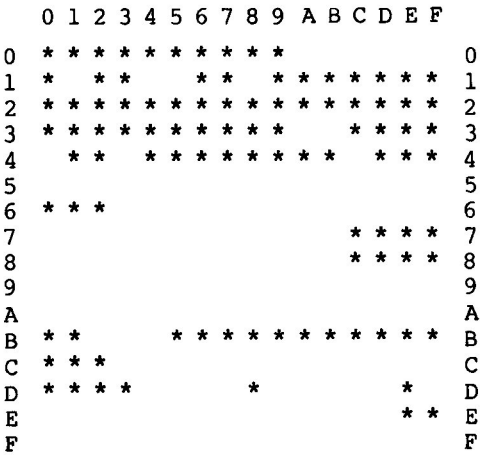
DOS

Standard DOS commands will have no effect from the Monitor or Basic--DOS is not loaded.

Programs that do not require the entire DOS but only the RWTS subroutines can access them through the standard page 3 vectors at $3D9 (JMP RWTS) and $3E3 (LDA /IOB; LDY #IOB; RTS). RWTS resides at its usual 48K location and is unmodified. The free spaces normally present within RWTS at $BA69-95, $BCDF-FF, and $BFC8-FF, however, have been filled with code and the IOB. The exact location of the IOB can be determined using the IOB locator subroutine at $3E3.

MEMORY USAGE

Frame-Up uses the zero-page memory locations shown on the following chart:



The locations from $0 to $9 are used only as scratch space. Your routines may also use these locations as long as they don't try to store anything there.

Page 2 is used as the "Gobble" buffer. Page 3 is empty except for the page 3 vectors. It is difficult to use, however, since whenever Frame-Up is booted page 3 is overwritten by the DOS 3.3 boot routines.

Pages 4 through $F are used for text display and various kinds of disk I/O buffers.

Pages $10 through $1F are reserved for the current Frame List. The first 16 bytes are variables that are discussed later. The Frame List itself starts at $1010. Each entry is 26 bytes long. The first byte is the "time" for that frame; the second and third are the track and sector where the frame can be found; the fourth is the frame type; the fifth is always a blank ($A0); the others are the frame name.

Pages $20 through $3F are used for high resolution text display. Pages $40 through $7F are unused except when a "<B>ackup" is done. <B>ackup overwrites everything from page $10 to page $7F.

Pages $80 through $86 were unused in Frame-Up Version 1.3. Later versions may use some or all of this space. (You can determine what version you have by looking at the right end of the bottom bar on the Frame-Up Starting Menu.) The $80-$86 area is overwritten when Frame-Up is booted, but is not used after that. Information on how you can automatically load your programs into this area is upcoming.

Frame-Up itself resides on pages $87 to $BF.

DISK STORAGE

On the Frame-Up Program/Tutorial Disk, the Frame-Up program code lies on tracks 0 through 3. Pages $B0 to $BF are on track 0, sectors 0 to $F. Pages $A0 to $AF are on track 1; $90 to $9F on track 2; and $80 to $8F on track 3.

On disks containing the Frame-Up Display Module, track 0 and the lower half of track 1 contain program code. The rest of track 1 and all of tracks 2 and 3 are available for data.

High resolution graphics are stored beginning in tracks $21 and $22 and grow down. Each graphic takes exactly two tracks.

Low resolution and text frames are stored at the lowest available track and sector and build up. Each frame takes four sectors.

The <D>elete command looks to see if the deleted item was the last item of that type added. If it was not, the last item added will be moved to the space formerly occupied by the deleted frame. This retains the integrity of each group of frames. It also means deleted frames are usually not recoverable.

Track $11 contains the VTOC at sector 0 and the Frame List at sectors 1 through $E. Sector $F contains a dummy "Catalog" sector so that Frame-Up disks can identify themselves in response to the standard DOS 3.3 "Catalog" command.

The VTOC is set to give a "Disk Full" error whenever you try to save something under DOS 3.3. Byte 4 of the VTOC determines whether Frame-Up will write on a disk or not. If byte 4 contains a "*", Frame-Up will not write on it. This is how the Program/Tutorial disk is protected from accidental damage. If byte 4 contains a "#", Frame-Up will treat it as a normal Frame-Up disk. If this byte contains a zero, Frame-Up considers it a DOS disk. Any other value will make the disk unusable by Frame-Up.

The first 16 bytes of the first Frame List sector, (track $11, sector 1), contain several variables of interest. You can quickly "delete" all of the data on a disk by resetting the following bytes:

DISK TYPE	BYTES								
	$00	$01	—	$06	$07	$08	$09	$0A	$0B
"N"	$00	$00	—	$21	$00	$00	$88	$00	$11
"Y"	$00	$00	—	$21	$01	$08	$82	$02	$10
P/T	$00	$00	—	$21	$04	$00	$78	$00	$0F

These bytes are:

- $00 frame pointed to by the nibs minus 1
- $01 number of items in the Frame List
- $06 next track to be used in saving a high resolution graphic
- $07 next track to be used in saving a low resolution/text frame
- $08 next sector to be used in saving a low resolution/text frame

$09 space left: low/resolution/text frames
$0A space left counter
$0B space left: high resolution graphics

PROGRAM VECTORS

For your convenience, two hooks are available within Frame-Up for attaching your programs. One is available from the Main Command Menu, the other from Normal Display Mode. In each case, whenever a key is touched that is not a recognizable command, Frame-Up will do a JSR to location $BFF4 (from Main) or $BFF7 (from Display). Normally these locations JMP to an RTS and control returns to Frame-Up.

You can change the values at these locations so that control will go to your program. The key that was pressed can be found at $0031.

You should return via an RTS. If you came from the Main Command Menu, the entire page will be refreshed on your return. If you came from Display Mode, the page will NOT be refreshed.

You can also pull the return address off of the stack and return via $BFFA (warmstart) or $BFFD (coldstart).

You can use many of the sector read/write programs to move code you have written directly to the disk. If you ORG your code for the $80-$86 area, you can put it on track 3, sectors 0-6, of the Frame-Up Program/Tutorial Disk. Then your program will be automatically loaded whenever Frame-Up is booted. You can also use the sector read/write program to change the program vectors—operation will then become completely automatic.

You can also write code for the $40 to $7F area. This code must be loaded before Frame-Up is booted. The Frame-Up boot will not disturb these locations. However, as mentioned before, a <B>ackup will destroy all code or data in this area.

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