

VIDEO TOASTER USER[®]

p r e s e n t s

101

Toaster
Tricks

By

LEE STRANAHAN

VIDEO TOASTER USER[®]

Presents

101
TOASTER
TRICKS

by
Lee
Stranahan

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F O R E W O R D

Lee Stranahan is a living, breathing symbol of the magnitude of change NewTek's Video Toaster represents. In late 1990, like so many other Amiga owners, he scraped together the dollars to purchase one of the first Toasters. His first days (and nights) with the device were so powerful that, with his wife's support, he promptly quit his job and committed himself (committed really IS the right word) to learning the Toaster inside and out. His enthusiasm for the Toaster was matched only by his thirst for Toaster information. This led him to form the world's first Toaster user group, as well as the world's first Toaster newsletter, BreadBox. Our own magazine, Video Toaster User, is a direct descendant of BreadBox.

In the two+ years since Lee got his Toaster, he has become the most widely known Toaster expert on the planet. In addition to writing a regular column in Video Toaster User, he criss-crosses the country teaching Toaster users of all levels. His excellent instructional videotapes (published by Rave Video) illuminate those who are unable to see and hear him in person. The man is a walking encyclopedia of Toaster knowledge and information. In "101 Toaster Tricks" he passes on some of his most important discoveries to you.

Jim Plant

Publisher - Video Toaster User

HARDWARE

#1 HARD DRIVES

The 52-megabyte hard drive that comes standard with many Toaster systems is just barely enough space, and with all of the great third party programs, fonts, and 3D files that are out there, even a 105- or 120-meg hard drive can get filled up very quickly. What to do?

The first thing you can do is to make sure that you 'clean house' on your hard drive on a regular basis. Many people treat their hard drives like a bachelor treats his apartment—when things start to get messy, just move to another area. The right thing to do is to make a commitment to erase useless files on a regular basis. Every file should either be erased, copied to somewhere else for later use, or kept if you're planning on using it before the next cleanup session.

The next obvious solution is to get another hard drive. One great option here is to get a removable media device of some kind. The two most popular are floptical drives or Syquest drives. Both allow you to copy a large amount of information to a cartridge. Fill up one cartridge and all you have to do is pull it out and put in another one. There are some important differences, however.

Flopticals typically hold about 20 megs per cart, and the flopticals carts are small—about the size of a floppy disk. On the other hand, Syquests hold either 44 or 88 megs and the carts are a bit bigger. Cost is another factor—a 20-meg cart costs less than \$20, while a 44-meg Syquest cart is around \$65 and an 88-meg cart costs about \$95. Finally, you need to consider speed. Syquest drives are nearly as fast as hard drives, whereas a Floptical is noticeably slower.

So what's best for you? The combination of a regular hard drive and some sort of removable media device is hard to beat. Your hard drive is then used mainly for programs and current pro-

jects and your removable media device is used for backups and archival storage. This is the kind of setup that gives you room to grow.

#2 MEMORY

Simple rule here—you can't have too much memory. You might not *need* 40 megs of RAM, but it couldn't hurt.

The best way to add RAM is probably to add an accelerator board. An accelerator worth buying has room for memory expansion, and usually lets you add at least 16 megs of RAM. There's a reason for this—accelerators need a faster type of memory than normally comes with the Amiga, so they bring their own. If you have an accelerator but don't have much RAM on it then you aren't getting all the performance that you should.

What can you do with extra memory? Aside from letting you run more programs and sections of the Toaster at once, having more RAM lets you load more objects and images into LightWave. Systems without a lot of memory will also have trouble loading in more than a few ColorFonts into CG.

You can also use your memory as a RAM Disk in order to hold framestores for *very* quick access. A RAM Disk treats the computer's memory like a storage device, except the access times are much quicker than even the fastest hard drive. You can access the RAM Disk from Toaster Preferences, just like you would any hard drive or floppy disk. Just be careful—the contents of the RAM Disk are lost when the computer is shut down or reboots. Make sure you have another copy (on hard disk or floppy) of anything in the RAM Disk that you want to keep.

Bad memory chips seem to be the source of a number of problems for the Toaster. NewTek's tech support is great at diagnosing memory problems, and most RAM boards and accelerators come with some sort of memory test program.

#3 CHIP RAM

The Amiga uses two types of memory—fast RAM and chip RAM. Chip RAM is the memory that the computer uses to show pictures and play sounds. The standard Amiga 2000 comes with one meg of chip RAM and adding a memory board or an accelerator does nothing to increase the chip RAM. This is why you can have a system with 32 megs of RAM and still run out of memory in ToasterPaint—you've used up that one meg of chip RAM.

The only way to increase your machine's chip RAM is to use DKB's MegAChip 2000. This gives your machine two megs of Chip RAM, which seems to be enough for most uses. If you use the Toaster for graphics or if you multitask a lot, you should seriously consider the MegAChip.

#4 ACCELERATORS

If you use your Toaster for graphics at all, you need an accelerator. The good news is that accelerator prices have come down—way down. Accelerator speed is measured by the type of chip you are using (usually a '030 or '040) and the speed of that chip. That speed is measured in megahertz, abbreviated as Mhz. A 50 Mhz '030 should be about twice as fast as a 28 Mhz '030, of course. And a 28 Mhz '040 should be much faster than a 28 Mhz '030.

That's all good in theory, but in the real world it doesn't work that way. To show the difference between different accelerators, we did a test render of the Workstation scene that is included with LightWave 2.0:

Workstation

Commodore 25 MHz '030	6:12
GVP 40 MHz '030	4:07
RCS 28 Mhz '040	2:45
Progressive Mercury 35 MHz '040	2:23

This is about what you'd expect, but things change if you use a scene with a lot of textures in it. We also rendered the Texture Examples scene in High resolution and got the following results:

Texture Examples (High Res)

GVP 40 Mhz '030	19:20
Progressive 35 Mhz '040	17:14

From this chart the '040 board doesn't seem like a very good deal, and with LightWave 2.0, frankly it's not. But the next version of LightWave will be optimized for the '040 and rumor has that it's *much* faster. How much faster? Well, reports seem to indicate that, with the Progressive 35 Mhz '040, the Texture example shown above would go from 17 minutes, 14 seconds to about 3 and half minutes. Same hardware, just different software. Scary stuff, kids.

So what should you do? If you need an accelerator now and don't have one, get an '040. The additional speed you'll get elsewhere in the Toaster and the price/performance ratio will make it worth the wait for the software upgrade you'll need to take full advantage of it. If you have an accelerator and just want to upgrade, you might wait for the prices to drop and the boards to get even faster before getting rid of your '030—with LightWave 2.0, a 50 Mhz '030 can be faster than many '040's.

#5 SCANNERS

If you're serious about graphics or 3D work, you might also consider buying a scanner. While the Toaster's frame grabber is a great way to get images into the Toaster, for some types of images a scanner is the better choice.

The price of scanners has also come down. You can buy a 24 bit, 300 dpi (dot per inch) scanner for less than a \$1000, and smaller color scanners can be picked up for under \$400.

So what works better with a scanner? Mostly

smaller, highly detailed images. One good example is the label from a soda bottle. A camera and frame grabber would have a very hard time picking up the detail needed to make a realistic image map. With a scanner, however, you can get every detail. A scanner also works better for many image maps because it allows perfectly even lighting, something that's usually not possible with a frame grabbed image.

#6 ESSENTIAL THIRD PARTY SOFTWARE

Even though the Video Toaster is packed with software features, there are some software packages by other manufacturers that can really enhance the performance of your system. The world of software is a swiftly moving stream, and the best program for the job can change. For that reason, the specific products mentioned below may not be the best programs by the time you read this. Of course, reading the reviews in Video Toaster User will keep you up to date. Bearing all of this in mind, there are some general categories of software that you will certainly want to own.

Directory Utilities : Directory utilities help you to keep your hard drive organized by allowing you to copy, delete, and move files easily. Some more advanced programs also let you view pictures, read text files, run ARexx scripts and more as well. Examples of directory utilities are Directory OPUS, DiskMaster, and the public domain program SID.

Third Party ToasterFonts : If you're a serious user of the Toaster's Character Generator, then you can always use more fonts. There are hundreds of new typefaces available for the Toaster, and some packages even include specialties such as foreign language fonts and special graphics, like flags or weather symbols. Some of my favorites are the Kara Fonts, First Prize Toaster Fonts, and the Professional ToasterFonts sets.

Toaster Sequencers/Utilities : A fairly late entry into the Toaster marketplace, this category

of software lets you create ARexx scripts, sequences (to show a hard disk full of framestores with 7 seconds delay between each one, for instance), move effects from one bank to another, and even create your own custom effects. Examples include Toaster Toolkit, TRexx Professional, and ToastMaster.

Paint Programs : ToasterPaint is a great program, but there are some paint programs that are better for certain uses, such as editing bitmapped images on a pixel-by-pixel basis. Some popular paint programs include Deluxe Paint IV and DCTV paint.

Image Processors : This category allows you to convert images to other formats (such as the PICT format, which is used by the PC and Mac), resize and scale images, change the number of colors that are in a picture, and do special effects such as 2D morphing. Image processing programs are a must if you work extensively with Paint or LightWave. Examples include Art Department Professional, ImageMaster, and Image Effects.

2D to 3D Conversions : Flying logos are the bread and butter of 3D work, and the best way to get a client's logo into the Toaster as a 3D object is to scan or digitize the logo and then use 2D to 3D software to convert it. Programs such as Pixel 3D or Interchange Plus also allow you to convert different 3D object formats.

#7 DIRECTORY UTILITIES

I consider a good directory utility to be as essential to a Toaster system as a steering wheel is to a car. And with some of the great directory utilities available, there's no reason not to have power steering.

For the power users, I don't think anything compares to Directory OPUS. DirOPUS is my favorite because of its flexibility. You can configure its buttons almost any way you want. With the number of different drawers that the Toaster has,

this can be very useful. It's very handy to be able to move a subdirectory of a subdirectory of a directory by clicking one button.

For your reference, here's a listing of the Toaster's drawers and a general description of their contents if it's not obvious. On the drive that your software is installed on there are three main drawers—Toaster, Framestore, and Project. The Toaster directory is where the Video Toaster's software is actually stored, and it also contains a number of other important drawers. Be very careful when dealing with the contents of this drawer, since erasing a file could mean having to reinstall the entire system.

Toaster contains the following drawers :

<u>Directory</u>	<u>Description</u>
3D	Contains the following directories : Envelopes, Images, Motions, Objects, Scenes, Surfaces, & the LW.config file
AuxLibs	Important ChromaFX files
CGTextFiles	This is where you store text for importing into the CG
Effects	All the Toaster's video effects
HeyStuff	Files for use with ARexx
TIO	File conversion modules
ToasterFonts	Fonts for the CG
ToasterPaint_Startup	Files TPaint needs

If you aren't *very* familiar with the Toaster and the Amiga, avoid erasing or modifying files in most sections of the Toaster. The only areas you really need to work in are the 3D, CGTextFiles, ToasterFonts, HeyStuff, ARexx, and ToasterPaint_Startup sections.

The Framestore directory holds your frame-

store, as well as having a subdirectory called Pages that holds CG buffered pages. (Much more on those later.) The Project directory holds your projects, not coincidentally.

#8 PROTECTING YOUR HARD DRIVE

It's sad but true—the more you have, the more you have to lose. You fill up your hard drive with cool framestores, custom objects, and a library of CG books and suddenly you have to live in fear of a hard drive crash. That's why the smart folks own backup software and some sort of hard drive repair utility.

Backup software copies the contents of your hard drive to another storage device, usually a floppy disk or a removable media hard drive, such as a Syquest drive. Big deal, you might say, I can already copy my files. That's true, and a straight copy works as a quick and dirty solution in an emergency, but backup software makes the process much easier. Good backup software will also let you create incremental backups. This means that once you've backed up your entire hard drive, the software only needs to backup new files. This is a considerable time savings, and it makes the whole process much more appetizing.

Another good use for backup software is to transfer files that are too big to fit on a floppy disk. Let's say you need to bring a Print-Res LightWave picture to a friend of yours. If the picture was saved with LightWave's Full Size Save Option on, the file can be very big—easily 9 megabytes or more. If you both own Syquests, it's easy. If not, all you have to do is use your backup software to backup just the picture file. This works because backup software can take a large file and split it over several floppy disks. Then all you need to do is bring the floppies to your friend's place and restore the file. Just make sure your friend has a copy of the same backup software that you do.

#9 USING PAGESTREAM & PIXEL 3D

Pixel 3D (and the new Pixel 3D Professional) are must-own programs if you use LightWave 3D to create logos. They do the work of converting a 2D image into a 3D object. Most often, the 2D image is either framegrabbed, scanned, or drawn in a paint program such as Deluxe Paint IV.

Another great way to create 3D objects with Pixel is to use Softlogik's Pagestream desktop publishing program. Pagestream is a great DTP program that can be useful for printing everything from your business cards to brochures and Toaster user's group newsletters. It also has the ability to print its files as an IFF graphic instead of to a printer. Because the resolution of print is so high, these are *giant* graphics. (A business card would be bigger than your interface screen.) And the bigger the graphic, the smoother the 3D object that Pixel 3D creates is.

Pagestream also can use Postscript fonts, the DTP industry standard. There are literally hundreds of different Postscript typefaces available, both commercially and in the public domain.

The process is fairly simple. Enter Pagestream and start a new document. Set your page size to Business Card size or smaller—no larger than 4" by 4". Then select the font you wish to use in a large type size (64 points or larger.) Then select Configure Printer from the Global menu and select IFF-ILBM. Now print the document, and select 300 dpi (dots per inch). A file requester will appear asking you where you want to store the file and what you want to name it. When finished, load this file in Pixel 3D and you're on your way.

#10 IS THERE A MODEM IN YOUR FUTURE?

Though it's clearly not a necessity for your video studio, a modem can really add to your existing Video Toaster setup. For the uninitiated,

modems let you transfer data over your telephone lines to another computer equipped with a modem. So why do you want to do that?

Well, one of the main uses of modems is to allow people to contact computer Bulletin Boards Systems, usually called BBSs. There are commercial BBSs, such as CompuServe and Genie, which charge users a fee to sign on. There are also hundreds of much smaller private BBSs, which usually can be signed onto for the cost of a long distance call. When you go 'online', BBSs are a great place to electronically meet and talk to other users, get problems solved, learn new hints, and hear wild gossip. It's also a way to get in touch with manufacturers, many of which provide online technical support. (In fact, NewTek has its own forum on CompuServe.)

One of the best reasons to go online is for the software. Some of the best programs aren't commercial. They're available in the wonderful world of public domain or shareware files. Aside from the cost of transferring the file to your computer, many files are free programs, called public domain, or PD, software. There are also shareware programs, which allow you to use the software for a period of time to see if you like it. If you do, you are supposed to send the author a fee, which varies from program to program. There is a trust system at work here, and it's a good idea to honor it. Software authors who make money tend to update software and write new stuff much quicker than poor, dead software authors.

You can also use your modem to transfer files to anyone else who owns a modem and computer, even without a BBS system. This can be very useful for a number of reasons. Let's say you're a Toaster artist. With a modem, you can work at home and send your files to users all over the country.

One of the compelling reasons to buy a modem is the recent increase in the price/performance ratio. The difference in modem prices is

usually based on speed—the faster the modem, the higher the price. Modem speed is rated in terms of baud rate. Modems are usually rated with numbers like 1200 baud, 2400 baud or 9600 baud. 9600 baud modems are the fastest, but they used to be *very* expensive. That's changed recently, and a 9600 baud is now a very good buy. In addition, many modems include fax features, and with faxes becoming increasingly necessary for business, that's a very good thing.

There are many other considerations for a modem, so make sure you talk to your dealer to buy the one that's right for you. See you online!

#11 JPEG

If you create graphics, it's a good habit to keep copies of your work around for a while. You never know when that client might come back for more, or when another client wants a graphic 'just like that one.' The problem is that all those images take up precious space. Here's where a file format called JPEG comes in.

JPEG is a file format that is used on all computer systems. The main idea behind the JPEG format is to make graphics files as small as possible. Most image processing programs, including ADPro and ImageEfx, read and write JPEG. This allows you to transfer Amiga format IFF pictures to or from JPEG. (You can save any Toaster framestore as an IFF picture by loading it into ToasterPaint and saving it by using TPaint's Save RGB option.)

JPEG is a 'lossy' compression method, which means the more you compress an image the worse it looks. In practice, this is not nearly as bad as it sounds. You can usually compress an image by 10-20 times with no noticeable loss in quality.

Let's look at what this means in practice. For archiving, if you use 44-meg Syquest car-

tridges to archive images, you can probably fit about 60 frames on a cart. If you took the time to compress the images using JPEG and got a 10 times reduction, you could fit 600 images in the same space. Yikes!

If you use a modem, you can send your files 10-20 times faster by using JPEGs. In fact, if you just need quick client approval and you both have modems, you might want to do an even higher level of compression, since the quality of this electronic 'proof' is not as important at this stage.

The biggest problem with JPEG is that you have to sit there and load each JPEG image and convert it to an IFF so that the Toaster can read it (or vice versa to compress an image.) When you want to JPEG a whole bunch of images, this can be somewhat of a pain. Thank goodness for ARexx, which allows you to write a script to automate the whole process. Then, while the computer does the work, you can go make a sandwich or read the latest Video Toaster User.

#12 USING ADPRO TO CREATE COLOR BACKGROUNDS

One of the best and quickest ways to create gradient color backgrounds for your graphics or CG pages is to use ASDG's Art Department Professional. ADPro has two operators, Backdrop and Backline, that make creating color grades easy and amazingly quick. Just save the image, and then load it into ToasterPaint. The Backline feature also lets you create diagonal gradients, which are virtually impossible to make in TPaint.

#13 TEXT EDITORS

Another useful program to own is a text editor of some kind. A text editor is just a very simple word processor that allows you to type in text and gives you some basic editing functions, like cut,

copy and paste.

So why do you want to edit text? There are a number of areas in the Toaster where this is very useful, but perhaps the most useful is for creating text to import into the Toaster's CG. For creating long scroll or crawl pages, typing the text into a text editor and then importing it into the CG using the Alt-F1 key is the way to go. By using this method, it's easy to make changes to a long scroll page without destroying the page's line spacing.

The Toaster also has a number of files that can be customized using a text editor. Two useful ones to know about are LightWave's LW.config file and ToasterPaint's Keyboard.txt file. (There are hints for modifying those files elsewhere in this book.) In addition, there are some Amiga files (such as the startup-sequence) which can be useful to edit. Finally, a text editor allows you to create and modify ARExx programs, which give you amazing amounts of control over a number of sections in the Toaster.

So where do you get a text editor? You probably already have one—there is a text editor, called Ed, that is part of the Amiga operating system. Sadly, for most of us mortals it is virtually unusable, with confusing commands and no user interface to speak of. There are a number of public domain text editors, but the best editors are commercial products such as ASDG's CygnusEd.

You can also use almost any Amiga word processor as a text editor, although it is sometimes overkill. On the other hand, having a spell checker can come in handy for CG text, and you can also use the program for script writing or business correspondence. If you decide to go the word processor route, make sure you save your files as regular ASCII text. This is very important, because word processors typically put all sorts of formatting codes into your text files.

#14 REND24

One of my favorite shareware programs is Tom Krehbiel's Rend24. If you're a LightWave

user, this program is a must. Rend24 creates a preview animation that you can play on your Amiga screen. Because the Amiga can only display 4096 colors (as opposed to the Toaster's 16.8 million), these previews are generally not useful for final output, but as a way to test motions, lighting, and texture animation all without wearing out your VCR's heads. And of course, Rend24 lets you experiment with animation even if you don't own a single frame controller or frame-accurate deck.

The best (and fastest) way to do a quick preview with Rend24 is to use LightWave's Super-LowRes mode, and turn on Rend24's Halve Height and Halve Width buttons. This will mean super-fast render times, and will create a quarter-screen preview. This small preview means that the animation will be able to play at roughly 30 frames per second—larger previews sometimes have trouble keeping up.

TOASTER SWITCHER

#15 HOW TO MAKE YOUR TOASTER HAPPY

If you have a spare input and you don't have a very stable source on input one of your Toaster, you might start to rethink your setup. The Toaster takes its sync from input one, so it makes sense to have as stable a source as possible. There are plenty of folks who've had their systems crash because they had a TBC as their sync source. (The internal TBCs on the Panasonic AG-7750s are fairly notorious for this.)

A black burst or color bar generator are your best choices. They are both very stable sources that you can sync your whole system to. Black generators can also often output -7.5 IRE, which the Toaster currently can't put out.

#16 MULTITASKING

The Video Toaster's host computer, the Amiga, is a multitasking computer. This means that it can run more than one program at a time. While the Toaster seems to take over the whole system, it's also capable of multitasking. This can be very useful. For instance, if you're working in LightWave and realize that an image you're using needs adjustment in ADPro, you can go out to ADPro and do the work you need to without having to quit LightWave, quit the Toaster, and then restart everything when you're done.

Pretty cool, eh? Well, multitasking is great, but it can cause machine crashes, particularly in a low memory situation. It never hurts to save your work before multitasking out to another program. And, as we've said before—the more RAM you have, the better.

So—how do you multitask? There are two different ways. From the Switcher, you simply press the Ctrl key twice and then the Alt key twice, both on the left hand side of the keyboard. This is also known as the Control-Control-Alt-Alt keyboard command, and experienced Toaster users do it in their sleep. When successful, you'll be sent out to the Amiga's Workbench operating system screen. To get back, you do the same thing (Ctrl-Ctrl-Alt-Alt) and then click anywhere on the Switcher screen when it reappears. This method is the more stable of the two methods and is therefore less likely to get you into trouble.

The other method can be used from either LightWave or ToasterPaint. First make sure a program, such as the Shell, has a window open on the WorkBench—just run Shell from the WorkBench. Then, to multitask out of either of these programs, just hold down the Left-Amiga key (this is the key to the left of the space bar and it has an 'A' on it in most cases) and then press the m key. Every time you press the Left-Amiga and m keys it will toggle you to

another screen—just keep pressing keys until you see the screen you want and then click the mouse somewhere in order to activate the screen. Under the Workbench 2.0 operating system, if you press the Left-Amiga key and the n key, it will bring you straight to Workbench.

#17 EXITING TOASTER THE QUICK WAY

Another useful and little known keyboard shortcut allows you to exit the Toaster directly from the Switcher and without any annoying message asking you if you're sure. So be darned sure you're sure. To use this quick exit just hold down the Ctrl, Alt, and F10 keys all at the same time.

#18 CHANGING COLOR ON EFFECTS

You can change the color of many of Toaster Sytem 2.0's effects. This can be very effective on the sports effects or the Kiki effects. Let's use the Baseball effect as an example.

Select the effect and then press the F10 key to go to Toaster Preferences. Select the color from the *top* row of colors (the BKG colors). You can even use the video static effect. Press F10 again to go back to the Switcher screen and press the space bar to run the effect. Unfortunately, there is no way to save these color choices—they must be reselected any time you pick the effect.

#19 POSITIONABLES

Many people don't know about all the different ways to use Positionables. The basic method for using them is to select one of the positionables, then hold down the right mouse button to resize the frame. Once sized, you release the right mouse button and then move the mouse to position the frame on screen. If you need further resizing, just use the right mouse button again.

Once properly sized and positioned, you have

three options: click the left mouse button, press the space bar or press the Return key. Clicking the left mouse button will create a transition using the frame size and position you've selected as a 'through-point' for the effect.

Pressing the return key or space bar will hold the transition at the point you've selected. This is very useful for creating over-the-shoulder type effects. If you create this kind of effect, you can then run the transition by pressing the space bar—pressing the space bar once will move to the hold point. Then you have two options; press the space bar again and the transition will complete, or hold down the Shift key and press the space bar and transition will go back to its start position.

#20 SMASHING THE BACKGROUND

Grab a frame of yourself or a loved one. Save the frame. Then go to ToasterPaint and paint out just the background, leaving only the person in front of a black background. Save this frame as well, then go to the Switcher and load the two frame on separate buffers. Now run the Breaking Glass effect—you've got to see this yourself, but it will look as though the background is being smashed away.

#21 SPECIAL EFFECTS

To create another interesting effect, select the same video source on both the Program and Preview buffer. Make sure the video has a lot of movement, or if you're using a camera, get ready to wave your hands at the camera a lot. Press the l (lower case L) key to enter live mode and then click on the DV1 button on the Preview bus. Both the DV1 and DV2 button should become selected. (If not, try pressing l again.)

Now select the Diamonds effect from the C bank. Use the Tbar to run this effect halfway—so the points of the diamonds are just touching. This

will create a 'viewed through broken glass' look. You might try a few other effects, such as Clouds or the Weave effect.

#22 RUNNING EFFECTS BACKWARDS

You can run many of the Toaster's effects 'backwards' with the Shift-spacebar key combination. You need to make sure that the effect is one that allows you to go backwards—for instance, the new animated-style Toaster effects will not work.

Use the T-bar to run the effect manually part of the way. When you release the mouse button, the interface should appear back on your monitor, and the small triangle to the right of the T-Bar should be flashing. (If the interface doesn't come back, then you can't use this effect for this trick.) Now hold down the Shift key and press the space bar—this will cause the effect to run backwards.

#23 WHAT PROJECTS SAVE -

Most people are aware that the only way to save a CG Book is to save a project, but many people do not the other things that are saved as part of the project. Here's a laundry list of all the things that are: current effects loaded, current speed of effects, settings for positionable effects, which 'slices' of the Toaster (ChromaFX, TPaint, CG, or LightWave) are loaded, GPI settings, termination settings, current color for CKG and border colors.

#24 SAVING COMPRESSED FRAMESTORES

If you want to save room on your hard drive, resave your framestores as compressed framestores. Be warned, however, that compressed frames do take a little bit longer to load.

To resave your frames, enter ToasterPaint. Press the l (lower case L) key to load a frame. When it's done loading, just press the L key to

save the frame—the file requester should show the same name as the frame you just loaded, so check that it does and then press the Return key. That's all there is to it, since ToasterPaint automatically saves frames as compressed frame-stores.

#25 LUMA KEYING WITH LIVE VIDEO

Many people who've seen the *Revolution* video wondered about the use of the Toaster's Luma Keyer in the scene where Kiki is standing in front of the weather map. They just don't believe it's the Toaster's Luma Keyer. Well, it is.

The man who did it, NewTek's Tony Stutterheim, says, "As much trouble as people think lighting is for luminance keying, that scene was actually one of the easiest shots in the whole tape.

"The lighting was very simple—just standard three-point lighting with an even throw on the back-drop," Tony says. "We used a white backdrop, because it works better than black for this type of keying. The thing to watch out for is areas of white on a person—eyes and teeth. Obviously, the subject shouldn't be wearing any white clothing, either."

One other trick is that you need to load whatever graphic you're using into DV2. Otherwise, there will be noticeable edging along the right hand side of your key subject.

#26 USING THE LUMA KEYS WITH CG

Using the Luma Keyer and digital effects to fly text on and off can be very effective. There are just a few tricks you need to know to make everything work smoothly.

Enter the CG and create a Key Page. Turn off any drop shadows and type a short line of text. Center it on the page by using the Shift F4 keyboard combination. Exit to the Switcher.

From the Switcher, load the CG page you just created and notice which buffer is blinking. Press the space bar once and the page will come up on your program monitor. Press the space bar a sec-

ond time and the CG page will fade off. Now bring up the video source that you wish to luma key over on your Program Bus. On the Preview Bus, select whichever buffer (DV1 or DV2) was blinking when you loaded the CG page.

Try to select that same buffer on the Overlay Bus, and you'll find that the Toaster won't let you. That's because the CG is still 'in control' of the Overlay Bus. To get control back, just click on any effect—you'll see the screen flash briefly and then you're back in charge of the Overlay Bus. (Feels good, doesn't it?) Now just set your clip level, pick a digital effect and you're ready to rock and roll.

#27 CREATING A MOVING POINTER

Here's a neat trick for creating a pointer that moves around live on screen. Enter CG and create a key page. Make sure you have the Symbol font loaded and select it as your current font. Type in a capital letter E and a little pointing hand will appear. Center this on screen and exit back to the Switcher.

Now go through the rigmarole described above to the pointer luma keyed over your video source. Once this is done, select one of the Digital Positionable effects (one of the two on the right.) Hold down the right mouse button and drag the mouse until the pointer is its normal size. Release the right mouse button and now you can move the pointer all over the screen by simply moving the mouse.

#28 FAKING A DROP SHADOW

When you use the Toaster's Luma Keyer with the CG, there is usually a black border along the right hand side. With some fancy CG work, you can actually make that border look like a drop shadow.

In CG, create a framestore page and use a one color, black background. (Set your black level at

0—don't set it any higher.) Change your shadow direction so that the shadow is pointing straight down. Now set the Outline and Shadow color to a gray scale level of about 40. The shadow going straight down combined with the border to the right will create a nice drop shadow effect.

#29 TRANSITIONING BETWEEN KEYS

On System 2.0's E bank of effects, the second row of effects can be used to transition from one key element to another. Load two key elements, one into each digital buffer. Select one element on the Preview bus and one on the Overlay bus. For instance, put DV1 on Preview and DV2 on overlay. Adjust your clip level, and then select on of the second row E bank effects and run the transition. Because those effects take a video source off screen and then bring another back on, they will swap what is in the Overlay bus with the Preview bus.

#30 CREATING AN EMBOSS EFFECT ON LIVE VIDEO

It's very easy to create an embossed or bas-relief effect on live video using ChromaFX. Go to ChromaFX and set one of the effects to be number 26 (Fade to Neg).

Go to the Switcher and select the same video source on both the program and preview buses. Bring up the Fade to Neg Chroma Effect and adjust it so that the image on Preview is a photographic negative of the regular image. Now, select the Smooth Fade effect (the dissolve that is in the lower right hand corner of every effects bank) and manually run the transition about halfway. For improved quality, run this using video that is black and white.

#31 CREATING A GREAT 'OLD FILM' LOOK

You can combine ChromaFX with the Toaster's video effects to create great looking special

effects. For example, select the same video source on both buses and bring up the ChromaFX 'Fire' effect. Now run the 'Dripping Paint' video effect to create a 'dripping blood' look—perfect for your next low budget horror film.

Another popular effect combines the Sepia-Tone Chroma Effect and the Old Film video effect from the F bank. By using both of these together, you can create a great old-time movie look. For an added degree of realism, try adding a little bit of strobe. Many camcorders, video mixers, and TBCs have a strobe of freeze function, which will greatly enhance the old-time look.

#32 CHROMAFX ON FRAMESTORES

You can use ChromaFX on framestores. Just make sure that the framestore you want to use is loaded into DV2, since ChromaFX uses the DV1 buffer to create its effects.

#33 CHANGING THE SPEED OF CYCLING EFFECTS

You can change the speed of cycling Chroma FX once they are loaded by using the effects speed control. You can also use the effects speed keyboard shortcuts—the , . / (comma, period, and slash keys.)

#34 GETTING RID OF THE CHROMAFX SHIFT

When you run a ChromaFX effect, it shifts the video to the right. This can be a problem when you want to do a dissolve from regular video to Chroma FX'd video. One solution for editing is to create another copy of your source tape and run the Chroma effects on that tape. Now use your TBC's horizontal phase adjustment to bring the two video sources (original and Chroma FX'd) into alignment. This does require losing a generation, but since the video will be running Chroma FX, this is usually not a problem.

#35 USING RAW CHROMAFX FRAMES

You can utilize the actual image that ChromaFX creates. What would you want to do with this image (which tends to be some sort of color spread)? Well, you can use it for a LightWave reflection map, or a TPaint background. To get to the raw frame, render a Chroma Effect from Switcher, then enter ChromaFX and immediately exit. The raw image will be in DV1.

#36 SAVING CHROMAFX

If you fill up your empty ChromaFX slots, you can 'save' your settings and free up space by renaming the file where they are stored. The file is in a subdirectory of the Toaster drawer called ChromaFX. Just make a copy of the file called ChromaFX.Effects and then rename one of them, giving it a name like ChromaFX.Effects2. You now can change the effects in the current file and you'll still have a backup of the original effects you created. To access the original effects, just rename that file as ChromaFX.Effects (remembering to rename the current ChromaFX.Effects file as ChromaFX.Effects3 or whatever first.)

CHARACTER GENERATOR

#37 BIG FONT DIRECTORIES

One of the best ways to create better looking CG Pages is to use some of the great third party fonts that are available. This is one downside to having so many fonts—your ToasterFonts directory can get *big* (mine takes up around 20 megabytes) and just accessing it to add or delete

fonts can take 5 or 10 seconds.

One way around this problem is to use the Amiga's Addbuffers command. Addbuffers helps speed up disk access by letting the computer remember the contents of your drive. Aside from helping with large ToasterFonts drawers, it can help improve your system's overall performance.

The best way to use Addbuffers is to add a command to your startup-sequence. To do this, you'll need a text editor and a little knowledge of the Amiga's operating system. If you are unfamiliar with these things, your local user's group or your dealer might be of help here.

Add the line Addbuffers <DRIVE> 1500 near the end of your startup-sequence or user-startup files. <DRIVE> should be the drive where your Toaster software is located. For example, if your Toaster is on a drive called DH0:, the line would read:

```
Addbuffers DH0: 1500
```

It's also important that you have at least nine megs of RAM in your system, since the Addbuffers command uses memory and you don't want to take away from what your Toaster needs to run.

#38 BETTER CG PAGES THROUGH RESTRAINT

If you want to create CG pages that look more like broadcast graphics, one simple rule might help—when it comes to color, less is more. The most popular colors for broadcast CG graphics are white, off-white, and shades of gray. While it may seem kinda boring, you can create some great looking pages by using different levels of gray. Yellow is also very popular and works very well, although CG's preset yellow might be a little hot for some uses. Broadcast CG also uses red sometimes, but mostly for graphic separators and hardly ever for text. Blue and green should be used sparingly.

These aren't just arbitrary rules, but principles for solid graphic design. TV is a great tutor, and it's always amazing to me how little television

people who work in video watch. Check what the networks are doing, and you'll find you can do much of it using the Toaster.

#39 USING TOASTERPAINT BACK- GROUNDS

Another common network graphic technique is the use of ToasterPaint graphics as a background for CG. In fact, most graphics you see on television are a combination of paintbox and character generator output.

One note here that may stress the obvious (on the other hand, it may not) - the graphics you use do not have to be created in ToasterPaint. You can use a Framestore or LightWave Image or anything else that you can load into TPaint's buffer.

With Toaster System 2.0, it's very easy to import graphics from ToasterPaint for use as a CG background. All you need to do is to have your graphic loaded into TPaint, exit TPaint using the Switcher command from the pull-down menus (or use the Q (Shift-q) keyboard shortcut), and then enter the CG. Select a Framestore Page by pressing F1, then F4, and then Alt F3 to set the color of the background. This will bring up a menu similar to the one used to set a font's color. From this menu, press the F2 key a few times until the F2 button on screen shows a paint brush. This lets you know that you are using whatever is in TPaint's buffer as a backdrop for the current CG page. Now simply type in your text and render to the screen to see the results.

One problem is that you cannot see the TPaint background when typing in the text, which makes it very difficult to align text with an image. There is a great workaround for this, but it works best with the three monitor set-up that is suggested in the Video Toaster's manual. Just follow the steps outlined above, but before typing in any CG text, press the Alt and Help keys at the same time. This will put you into two-monitor mode, where the Interface screen is overlaid on the Preview. Now press the F9 key, which renders the page to the

Preview screen. Because you haven't typed in any text, just the picture in the TPaint buffer will be rendered to the Preview screen. Normally you would press the F10 key to send the picture from Preview to Program, but *don't* do that now. Just watch the Preview monitor and start typing in your text. You will see what you type overlaid on the TPaint picture. When done, just press F9 and then F10 and the completed page will be rendered to the Program monitor. To reset your monitors, just press the Alt-Help key combo again.

One other important note—if you want to save the page you create using a TPaint background, you must either save them from the Switcher as a framestore or use the CG's buffered pages option. Not sure about buffered pages? Read on...

#40 CREATING BUFFERED PAGES

A buffered page is simply a CG page that has been pre-rendered to hard disk. This is very easy to do—simply create either a Key Page or Framestore Page in the CG and press the Alt and F9 keys simultaneously. This will render the page to the Preview monitor (just as pressing the F9 key on its own would do), but it will also save the page to the hard disk. You can tell this has happened because there will be a small lightning bolt next to the page number. There will also be a lightning bolt next to the name of the page when you are on the Switcher screen.

Why would you want a page pre-rendered? Well, try bringing up a fairly complex CG page with a colored background during a live shoot and you'll see why. On an unaccelerated machine it can take 30 seconds or more, and even on a faster machine the delay can be unacceptable. Loading in a page from the hard disk, on the other hand, takes less than 5 seconds, even on a slow machine.

Another important use for a buffered page is

for CG pages that use ToasterPaint graphics as a background. (See the previous hint for more on this.) If you go through the steps outlined above to create a CG page that uses a TPaint background, and you don't save the page as either a Framestore or buffered page *and* save the whole thing as a Project from Toaster Preferences, your work will be lost. When you create a CG page and tell the computer to use a Paint background, it looks to TPaint and then uses whatever is there as a background *unless* you've saved the frame and project already.

Because of the automatic housekeeping features of buffered pages, it's much safer to save your pages as framestores rather than as buffered CG Pages. The housekeeping feature in question here involves the way the CG will erase a buffered page if any change is made to it. Let's look at a fictional tale of woe as an example here.

Let's say Kiki spends all day creating 30 CG pages, each with its own ToasterPaint background. It's a fairly long process—she loads a graphic into TPaint, goes to CG, sets everything right, enters the text and then saves the mixture as a buffered page. Then she repeats the same process 29 times. Then she saves the whole thing by saving a Project from Toaster Preferences. After she leaves, Lee comes in and sees that there is a new CG book on the hard drive. He looks at what's been done and decides that the kerning needs to be adjusted. Thoughtless idiot that he is, he enters CG and changes the kerning. But any change made to the page erases the buffered page (and therefore the TPaint background) from the hard disk. When Kiki comes in the next morning, she's got 30 CG pages over the same background. She later kills Lee, and the jury lets her get away with it. (Just fiction, by the way.)

The moral of the story? Save your pages as framestores. And the next tip is a good trick for speeding up that process.

Turning buffered pages into framestores

This heading is actually a little bit misleading. That's because a buffered page really *is* a framestore—it's just in a different drawer and is named in a different way. It's also a compressed framestore, which means it takes up less space on the drive. (When you save a framestore from ToasterPaint, it's also saved as a compressed framestore. When you save a framestore from the Switcher, it's not compressed.)

This means that it's very easy to convert a buffered page into a framestore page. All you have to do is rename it and move it to the right drawer. Now, this assumes that you have a little bit of knowledge of the Amiga's operating system and where your files are located. As we've said before, your dealer or local user's group can be of more help than any written description.

Let's talk about renaming framestores first. When you look at a framestore from the Amiga's operating system, it's stored with a filename that looks something like this...

```
004.FS.Sunset
```

From the Switcher, you'd just see the frame's number (004 in this case) and name (Sunset) when you wanted to load the framestore, but the computer sees it in the form shown above. The formula is ###.FS.NAME, where ### is any number between 000 and 999 (be careful to avoid duplicate numbers—the Switcher will only let you load one of them) and NAME is any name you want to give the frame. The .FS. in the middle tells the computer that it's a framestore.

Although there are important differences, buffered CG Pages have a similar structure. Buffered pages are stored in a format that looks like this:

```
003.PG.001-DH0
```

The formula here is ###.PG.PROJECT-DRIVE, where ### is the page number of the CG page (a number between 000 and 099—

remember, you can have up to 100 pages in a CG book), PROJECT is the number of the project currently shown in Toaster Preferences, and DRIVE is the drive currently shown under Project in Toaster Preferences. Again, the .PG. is a place holder that tells the computer we're working with a buffered CG Page.

There's one important note that bears mention here. The Project and Drive names listed above are *not* for the Project and Drive that you currently have loaded—they are for the drive currently selected. Big difference. Let's say you loaded project 000 from drive DH0: into your system. This is the System2.0 project on many systems. Now you go to Toaster Prefs (the F10 key is the fastest way to get there from the Switcher) and click on the RAM: disk button. Note here that you don't actually load the project—you've just clicked on the button. Any buffered page you now create would be called something like:

004.PG.000-RAM.

So where are the buffered pages stored? They are in their own directory called Pages inside the Framestore directory. This is pretty much all you need to know to change a buffered page into a framestore page. Let's step through the process for clarity's sake.

Grab a directory utility and locate your framestore directory. If you're not sure where this is, go to the Switcher and try to load a framestore. If you can, then just go to Toaster Preferences and see which button is pressed in the Frame Store section. Whichever button is pressed has a Framestore directory on it. Find the Pages directory and go there. Now, simply rename any of the buffered pages you want to as framestores. For instance, if you had a CG page with your softball team's scores on it called 010.PG.002-DH1 it could become 025.FS.Scores—just make sure that you use the conventions listed above. Then move the renamed file out to the Framestores directory

and you're set. When you go back to the Switcher, the new framestore will not appear—you need to go to Toaster Preferences and click on another button in the Frame Store section, and then re-select the drive you had selected before. This will make the computer look at the Framestore drawer again so that it can recognize what's been added.

#41 TURNING BUFFERED PAGES INTO FRAMESTORES THE EASY WAY

Okay, okay—there's a slightly easier way to convert a buffered page, but it'll help you to know and understand the theory above. Really. This method is the quickest way to get a buffered page into ToasterPaint as well.

What you do is go to ToasterPaint and pull down Load Framestore or press the l (lower case L) key. This will show you the contents of the Framestores directory. You'll also see that there is a Pages directory shown. Click on the word Pages, and you see the contents of the Pages directory. Now just double-click on a page to load it. To convert it into a framestore, you just save it as a framestore and give it a new name. The only disadvantage to this method is that you now have two versions of the same page. You should go in and delete the buffered page.

#42 PHANTOM BUFFERED PAGES

Buffered pages are tremendously useful (which is why we've spent the time covering them that we have), but once you start using them extensively, you can start to develop the weird phenomenon of Phantom Pages. To show you the problem, let's create a Phantom.

Enter CG, go to a blank page (let's assume it's page 20) and create a Framestore Page (the F4 option from a blank page). Now, type in some vaguely obscene phrase. Save this as a buffered page by using the Alt F9 key combination. A light-

ning bolt will appear next to the page number. Go out to the Switcher and quit the Toaster.

We'll now pretend that your Mother has come over to see your Video Toaster and its nice character generator. (Just pretend, okay?) Restart the Toaster and enter CG. Go to the blank page you went to before (page 20 in our example) and create a Key Page (F3). Type in a nice greeting and then exit to the Switcher. Now try bringing up page 20. You ought to be ashamed of yourself—instead of the nice greeting, the vaguely obscene frame you created before came up. And in front of your Mom.

Why? Because you didn't save the project before quitting the Toaster. By creating a buffered page and quitting without saving the project, you've created an orphan page. Then, when you created the second page in the same spot as the orphan page, the computer looked to the hard disk, saw that you had a buffered page there and assumed that that's what you wanted to show—which means it ignores what you typed. Voila—phantom page. How do you get rid of 'em? Read on...

#44 THE EASY WAY TO DELETE A BUFFERED PAGE (NO DIRECTORY UTILITY NEEDED)

We've already kinda told you how to do this. If you want to delete a buffered page, just enter CG and make a change to the page in question. This will cause it to be erased from the hard disk. Easy, no?

This works not just with phantom pages, but also anytime you need to erase a buffered page. For instance, if you use the easy method for converting buffered pages to framestores covered above, you can use this easy method to delete the duplicate pages.

#45 CHEATING OUT FLASH PAGES

The 'flash page', where a line of text flashes

on and off, is a fairly common CG technique. While the Toaster's CG doesn't yet have the direct ability to do a flash, there's an easy cheat that creates the same effect.

From the CG, create a Framestore Page and type the word 'SALE,' then go down a line and type the word 'Prices.' Center the two lines on the page. Make a copy of the page and erase the word 'SALE.' Just make sure that the word 'Prices' is the same place on both pages.

Now save both pages as framestores with consecutive numbers. For instance, if you save one page as framestore 200, you have to save the other as frame 201—if you don't, this won't work.

Go to Switcher's effects grid F and select one of the four effects in the lower left hand corner. These effects all have a little 'No Framestore' icon in the corner. With one of these effects selected, select the first framestore that you just saved. Load the frame, and the second frame will also load. Your program monitor will flash between the two pages. The principle here is that whenever a 'No Frame' effect is selected and you load a framestore, the Toaster will load two framestores—the one you have selected and the framestore with the next number. (If there's no frame with the next number, the Toaster will give you a Frame Not Found error message.)

How do you change the speed of the flash? Well....you can't—we told you it was a cheat.

#46 MORE INTERESTING BACK- GROUNDS THROUGH 3D

You can create great looking moving backgrounds for you CG pages easily with LightWave 3D. By having a subtle, slow moving backdrop for your text, you can add visual interest without detracting from your message.

This is technique often used by Toaster expert Tony Stutterheim. "Whenever I'm not working on a project, I'll render a background."

How do you create these backgrounds? They

are usually very simple. One method of Tony's involves creating a simple disc object in Light-Wave, giving the surface some kind of pattern and then slowly rotating the disc. Render times can be very low, since you can render the images in medium or even low resolution. Record the animation out to tape, and then you can use the tape as a backdrop for a CG key, scroll or crawl page.

#47 CREATING LOWER THIRDS WITHOUT HAIR LOSS

When you creating lower thirds or any CG elements that need to be placed at the bottom of the screen, do not create them at the bottom of the screen. The CG can push elements off the page, getting rid of the line you just typed, kerned, and created color and shadow settings for, which has been known to cause Toaster users to rip out big chunks of their hair.

Try creating your lower third at the top of the screen. Once you're sure you're happy with the font type, font size, and shadow distance you can move the elements down to the bottom of the page. You need to do this a line at a time by using the a combination of the Shift key and the arrow keys. One way to save a little time is to use the Alt-F4 keyboard combination to move all lines to the center of the page.

#48 CREATING LONG SCROLL PAGES

The best way to create a long scroll page is to use a text editor or word processor and then to import the text into the CG. This is much better than typing in the text for several reasons. First, you often won't even need to do any typing at all. A crew list or class schedule has usually been typed into a word processor already, for other uses, and can be brought into the CG fairly easily. Second, your text editor may have a spell checker, which means you won't look stupid if you can't remember how to spell 'technician'. Finally, it makes revising a page much easier. (And there

are almost always revisions. Trust me.) The problems with revising a CG scroll page is that it usually destroys your line spacing. By reimporting a CG file, your line spacing will be preserved.

You import a text file in the CG by using the Alt-F1 key combination. Unlike other sections of the Toaster, which present a menu of files and you pick the one you want, the text file import looks for a specific file name in a specific location. If it's not there, you're out of luck. So it's very important to name your files correctly and put them in the proper location.

The files are stored in a subdirectory of your Toaster drawer called CGTextFiles. They *must* be in that drawer or the CG will not find them. The naming of the files is just as crucial—files need to be named with the following pattern—Page<NUMBER>.Text. The CG looks for a different file for each page number. For example, if you create a scroll page on CG Page number 24, when you go to import text the CG will look for a file called Page24.Text in the CGTextFiles drawer.

This is very straightforward, although it can be restrictive. Let's say you created a file called Page15.Text, fully intending to keep the crawl page at page 15. Then you decide you need Page 15 free. You can use CG's copy page command (Shift F8) to copy the page to another location. Don't forget, however, that if you need to import something new into Page 15, you'll have to erase or rename the old Page15.text file.

#49 CREATING BUILT PAGES

Another common CG technique is the 'built page', where elements are brought on one at a time. An example of this might be a Top 10 list, where you show you the items one by one. This is always done with the CG Framestore Page.

The key to easily creating a built page is to build the last, complete page first. Let's say you wanted to create a built page with three safety tips and a headline cleverly reading 'Safety Tips'.

You'd start by creating the complete page—all three items, the headline, and any background you want. Set your fonts, kerning, color and shadow choices, and anything else you need to make the page look great. Now you'd make three copies of the page using the Alt F8 keyboard combination. You'd now have four identical pages.

Now we'll go to the individual pages and alter them. On the first page, you'd erase all the items, but leave the headline. On the next page, erase the bottom two safety tips, leaving just the top item. On the third page you'd get rid of just the bottom item. Finally, you'd leave the last page alone. Now all you have to do is go to the Switcher, and load the pages one at a time to transition between them.

#50 USING EFFECTS WITH BUILT PAGES

While you can use straight cuts or dissolves to bring on the different elements in your built page, you can add some spice to the procedure by using some of the Toaster's other effects. The soft edged wipes on the D bank, for instance, work very well. There is sometimes a slight color difference between DV1 and DV2, and the soft edges can help mask this. You might also try the snow dissolve effect on the F bank. This will 'beam in' the different elements.

TOASTERPAINT

#51 RUNNING OUT OF MEMORY

ToasterPaint likes memory, particularly Chip Memory. If you don't have two megs of Chip RAM, you can run out of memory fairly easily. This can happen if you try to pick up a large brush or use the spare page. Out of memory problems show themselves by 1) a screen flash and 2) what you

wanted to happen doesn't happen.

To free memory try exiting ToasterPaint, and then re-entering it. You also might want to have the GetSmall project loaded, since the Toaster's effects take up memory, and you should also try closing LightWave or CG if they are open.

#52 HOW REDO WORKS

ToasterPaint's Redo command is one of its most powerful features, but some people don't understand how it works. Here's a simple tutorial to explain the basic concept behind TPaint.

Load an image into ToasterPaint by pressing the l (lower case 'L') key and double clicking on an image. When it's loaded, press the R key to select the filled rectangle tool and then press the ` key (the key to the immediate left of the 1 key) to enter the Normal draw mode. Click on a shade of blue from the strip of colors on the palette. Drag out a small rectangle on screen.

Let's start by looking at how Redo is different from Undo. Hit the u key to undo the rectangle you just drew. Now press the a key to redo the image. (Note : a is the keyboard shortcut for Redo—it stands for again...it's used because the r keyboard shortcut is used to pick the rectangle tool.) You'll see that it redraws the rectangle.

You can accomplish the same thing another way—press the u key again to get rid of the rectangle and then press u again. This will undo the undo. So of what use is Redo?

Press u to undo the rectangle one more time, and select a different color from the palette. Now press a to Redo—you'll see the rectangle redraw, with the new color you selected.

This is the power of Redo. It redraws in the exact position that you last drew with, *with whatever settings you currently have selected*. Try undoing again, select a different mode (try pressing the 3 key to go to Darken mode), and then do another Redo. It will draw a rectangle in the same

position with the new mode you've selected.

The Redo feature can also be used to apply more of an effect to an area. If you've selected Darken mode, for instance, you can try clicking Redo a couple of times to create more of a darken effect. Just be careful—you can only undo the last thing that you did. If you press Redo three times and then try to undo, it will only get rid of the last Redo, leaving the other two.

#53 WHAT TO DO WHEN THINGS DON'T WORK -

When working with ToasterPaint, you will sometimes draw on screen and get very different results from what you might have expected. This will usually happen for one of two reasons: 1) You're in the wrong mode or 2) Your transparency settings are wrong. Try checking both of these, fix them if they need fixing, and then do an Undo and then a Redo.

#54 PICKING UP THE WHOLE SCREEN

Sometimes you'll want to pick up the entire screen as a brush, usually in order to resize it and place it in another graphic. There's a quick way to do this—just press the b key (for Scissors mode) and then the w key (for Whole screen). Then you can select the TxMap mode and you're set to resize the image. If your screen flashes once, and doesn't seem to pick anything up, you are low on Chip RAM. Try exiting and then re-entering ToasterPaint to clear up memory.

#55 THE QUICK WAY TO CREATE A SOLID COLOR BACKDROP

The slow way is to pick a color and then press the w key to fill the screen with the selected color, or worse, to draw a giant filled rectangle that covers the screen. The fast way is to pick the color you want the screen to change to and then selecting Clear from the Picture menu.

#56 TURNING AN IMAGE GRAY SCALE

If you use the Colorize mode with black or white, it will turn color to gray scale. To apply this to an entire image, just select black or white as your current color, choose Colorize mode, and then press the w key to affect the whole screen.

#57 TPAINT'S HIDDEN MODE

Not everything in TPaint can be accessed with a mouse. For instance, there is another variety of the Blur mode, called Blur2, that can only be accessed from the keyboard. To access this mode, just press the 6 key twice (the keyboard equivalent specified in the manual doesn't work). Blur2 produces a blurrier blur, and it's the only type of blurring that I use.

Hope that description didn't get too...uh...blurry.

#58 XOR MODE

The Xor mode is great for creating a negative of an image. Just select the Xor mode and select white as your current color. Whatever you draw on now will give you a photo negative. If you press the w key, you'll get a negative of your entire current image.

#59 REMOVING FEATURES

If you're doing photo-retouching type work and want to remove features from a picture, here's an easy way to do it. The principle here is that to get rid of an object, you aren't really removing it—you're really covering it with another image.

First, draw an outline around the object that you want to get rid of. Press u to undo what you just drew. Press b then a to pick the area as a brush. Now stamp the brush down in an area of

the screen that contains an image you'd like to replace the object with. For example, if you wanted to get rid of the top of a tree, you might stamp the brush down in an area of the screen where there's sky.

Once you've stamped down the brush, press u to undo the stamp and then b and a to pick up the new area as a brush. You'll now have an image in the exact shape of the object you wanted to remove. Just position the brush directly over the object and stamp it down. You can then use the Blur mode or transparency setting to clean up the edges.

#60 COMPOSITING IMAGES

TPaint's RubThru mode allows you to take an image from the spare page and rub it through to the current. This is very useful for image compositing.

There's just one problem. Let's say you have two pictures loaded, one a gradient color background, and one a frame grab of a dollar bill. You want to composite the dollar bill over the gradient color background. So you go to RubThru mode, put the dollar image on your spare page, and have the color grade on your current page. And therein lies the problem—you can't see where the dollar bill is, so it's a hit or miss proposition when you do a RubThru.

TPaint's Redo feature to the rescue. Jump over to the dollar bill page and trace around it. This will do the exact opposite of what you want to do; it will rub the gradient image through to the dollar bill page. What we have really done here, though, is to get the shape and position of the dollar bill established. Now press the u key to undo, then the j key to jump to our other page and the a key to redo. You'll have a perfect composite.

#61 SELECTING 24-BIT COLOR VALUES

Because ToasterPaint works in a 4096 color preview mode, when you try to select colors using the color toolbox's RGB sliders, the sliders move in increments of 16. To select any color, move the mouse pointer over the numbers underneath the sliders, and click and hold down the left mouse button. Moving the mouse will now change the values by increments of one.

#62 CREATING A CHALK LOOK FROM A FRAMESTORE

It's easy to create the look of traditional art, such as chalk, colored pencil, or oil by starting with a framestore. The basic idea behind these techniques is to reduce the number of colors and amount of detail in an image.

Load any frame up into TPaint. Portraits seems to work best. Select a fairly thick round brush and set your Edge Transparency slider down around halfway. Use the unfilled freehand draw tool. Now look at your picture and pick an area to work on. Move the mouse over that area, press the , (comma) key and then click the left mouse button to pick the color from the section of the picture you've selected. Now draw over this area using quick, short strokes. Then move to another section of the picture and repeat the procedure. Make sure all your strokes go in the same direction. You also might vary the brush size and edge transparency as you move around the picture.

#63 OIL PAINTING

You can create an oil paint look with a technique similar to the chalk technique described above. This time, select the filled freehand draw mode and a smaller brush, but make sure edge transparency is at 50% or below. Move to an area of the screen, pick the color of that area using the

comma key. Instead of drawing now, however, simply trace around the area color. Move to another section and repeat.

#64 WRITING YOUR OWN KEYBOARD EQUIVALENTS

If you have a text editor and a little willpower, you can easily create your own keyboard equivalents. TPaint gets its keyboard shortcuts from a file called Keyboard.txt, which is in the Toaster directory inside a subdirectory called Toaster-Paint-Startup. There is also a listing of the keyboard.txt file in the Toaster manual, which is a very helpful learning guide.

One interesting thing about keyboard.txt is that you can assign multiple commands to a single key. This lets you press one key and have a long series of commands executed. This is a very powerful feature, and it allows you to create 'macros' for ToasterPaint.

LIGHTWAVE AND MODELER

#65 ANIMATING WITHOUT A SINGLE FRAME CONTROLLER

Some people don't use LightWave because they don't think they can use it unless they own a single frame recorder and expensive frame accurate VTR. This just isn't true. LightWave is great for creating still graphics, and there are two methods for animating with just the Toaster hardware.

The first is to use the Toaster's Luma Keyer and DVEs to fly a logo in or out. This is real cheat, but many folks would be happy to see their company logo flying around with a digital effect. The second is to use a program like Rend24 (described earlier in this book) and then use the

Toaster's genlock to output to tape. The results only look so-so because of the Amiga's resolution, but you are also learning to how animate this way. And once you start using it, LightWave is the about the most fun you can have with the Toaster.

#66 LIGHTWAVE KEYBOARD SHORTCUTS FOR VIEW MODE

As we've said before, it's important to learn the Toaster's keyboard shortcuts. LightWave has a number of these, which are listed in the System 2.0 manual.

There is a very useful set of shortcuts that allow you to use LightWave's different views from the Layout screen much easier. First of all, the F1-F5 keys select different views. F1 shows you the Front view, F2 the Top, F3 the Side, F4 the perspective, and F5 the camera. Pressing the v key will put you in Edit View mode, and pressing the space bar will toggle you through the different edit items. The , and . keys allow you to zoom in and out from the front, top or side views.

#67 THE RIGHT WAY TO CREATE KEY FRAMES

Except for frame 0, you should generally only create a key frame for one item at a time. You can get into some trouble by using the Create Key Frame For All Items option. What kind of trouble? Well, for one thing you can get objects that seem to be moving on their own.

#68 HOW TO GET RID OF OBJECTS THAT SEEM TO BE MOVING ON THEIR OWN

You didn't think we'd just leave you hanging, did you? To understand why things sometimes move in mysterious ways, you have to understand that LightWave uses splines for its motion paths. So what's a spline? Spline is just a fifty cent word

for curve.

This means when you set two key frames for an object, LightWave moves the object from one point to another along a curved path. This creates a more natural motion and makes your animations look better.

You start to get into trouble when you create two key frames for an object and you don't change its position. As far as you're concerned, the object shouldn't move—after all, it's in the same place in both key frames. Just proves you aren't thinking in splines. Remember, spline motions don't want to take the shortest path; they want to take a curved path. And if they have to take an object from one position and then move it out of frame and back to the same position...well, that's just fine by splines.

There are two ways to avoid this. One is to not create two key frames where the object is in the same position. Fine, you say—why would I ever do that anyway? Well, it's pretty easy to do if you create key frames for all items, which is why we gave you that last hint.

The other method is to turn off splines. To do that, you go to the second key frame and press the s button. This will bring up the spline control window. Click on Linear and you're all set. Linear causes the current segment of the motion path to move in a straight line instead of a curve, and that will stop any bizarre movements you're seeing.

#69 GETTING BACK TO YOUR LIGHTWAVE OBJECTS DRAWER

If you get completely lost in the load object file requester, you can get back to your original drawer by typing the word Objects in the window that says Path. (Make sure you type just the word 'Objects' - don't put in any colons or other punctuation.)

#70 LOADING MULTIPLE OBJECTS

Here's a dumb little trick that can save you a lot of time. If you've got to load a bunch of

objects, you know the routine you have to go through. You click on the Load Object button, select your object from the file requester, click the OK button. Repeat for each object. It's a lot of mousing around.

To speed up the process, click the Load Objects button a bunch of times in a row—once for every object you need to load. Now when you select from the file requester and okay the selection, another requester pops right back up, which saves a little work. The little things count...

#71 REFLECTION MAP IMAGES

If you're getting bored with the Fractal Reflections image that comes with the Toaster, go into the kitchen and grab some aluminum foil. A frame grab of slightly crinkled up foil makes a great reflection map.

#72 A GOOD SOURCE FOR TEXTURE MAPS

If you want a nice source for free or nearly free textures, go no further than your local hardware store. You can usually ask to borrow the large samples of different woods and marbles that they have. Wallpaper books can also be a great source of textures.

If you own a scanner, don't hesitate to grab a few pocketfuls of the small panel swatches that hardware stores have. The panels are too small to grab with a camera, but with a scanner set to 200 or 300 dpi they are perfect.

#73 CHEATING TEXTURES

Do you like the look of textures such as Underwater or Fractal Noise but not the time they take to render? Try using image maps instead.

Because of the complex calculations involved in creating textures, image maps render much quicker than textures. You can easily build an image library of textures you like—just go into Modeler

and create a flat box that is the same shape as your monitor screen. Load this object into LightWave and position it so that it fills the entire screen. Now apply the texture you want to the box, render the image and save it using the Save Image option. You've now got your image map.

You can even create the appearance of moving textures. Simply set up the texture so that it animates, and render the frames as described above. When you want to apply the effect to an object, load the images you've created using the Load Sequence option. This can result in a considerable rendering speed increase.

#74 CREATING THE REVOLUTION OLD WORLD—NEW WORLD EFFECT

The 'Old World to New World' animation at the beginning of NewTek's *Revolution* video is another amazing Allen Hastings animation. When the 'Old World' morphs into the 'New World', many wondered how the effect was achieved, since LightWave 2.0 doesn't have surface morphing.

The trick is that the two globes are not actually the same size. The 'New World' object is actually a little bit smaller than the 'Old World' - it was scaled by a factor of about .985 in Modeler. During the animation, the smaller 'New World' globe was parented to the 'Old World'. This made the New World invisible (since it was hidden inside the larger object).

In order to create the transition, LightWave's Object Dissolve function was used. This setting (in LightWave's Objects menu) determines the overall transparency of an object—at 100%, the selected object is completely invisible. An envelope was used to change the dissolve value of the 'Old World' object over time. By slowly dissolving the Old World object away, the New World object inside of it was revealed and an effect very similar in appearance to surface morphing was achieved.

#75 RENDERING SCENES BACKWARDS

You can easily render scenes backwards in LightWave. Just set your First Frame to a higher frame than your Last Frame and then use a negative Frame Step value.

#76 WHAT ZOOM FACTOR MEANS

Ever wanted a chart that tells you lens equivalents for different zoom factor values? Well, here's one anyway...

Zoom Factor	Lens Equivalent
1.6	12.1 mm
2.0	15.1 mm
2.4	18.1 mm
2.8	21.1 mm
3.2	24.1 mm
3.6	27.1 mm
4.0	30.2 mm
4.4	33.2 mm
4.645	35.0 mm

#77 ENTERING STRANGE VALUES IN LIGHTWAVE

Most of LightWave's requesters allow you enter negative values and percentages over 100%, even though the sliders don't allow those values. That nice, you say—any reason I'd want to enter values like that?

There are lots of reasons, actually. A light with an intensity of 200% or 300% is much brighter than a 100% light, and more realistic for some types of lights. In fact, light intensity can be set up to 1600%, for those nuclear winter effects.

An image map that has a negative Image Size value can be mapped backwards. For instance, if

you're mapping an image onto the Z axis of a box and you give the Y size a negative value, the image will appear upside down. (A little *Revolution* trivia here : The 'Bladerunner' animation that ends the tape shows a giant space-blimp with a geisha eating a cherry. The geisha is Kiki Stockhammer, and the frames were actually mapped using a negative X size value. Animator Allen Hastings thought it looked better that way.)

#78 CREATING A WIREFRAME LOOK

There are times when you'll want your animations to have a wireframe look. While LightWave has a wireframe render mode, it doesn't render objects as a 'solid' or hidden-line-removed wireframe. In other words, all polygons are visible, even if they should be hidden.

To create a more useful wireframe look, load an object and go to the Object menu. Click on the Polygon Edges button and set the Edge Color to a light shade of blue. Now set your ambient light intensity to 0% and set your light intensity to 0% as well. That's right—no lights. Try rendering the scene in High Res.

If you only want one object rendered in wireframe or don't want to turn off your lighting, set all of the surfaces in the object you want wireframed to have 0% Specular and 0% Diffuse.

#79 CREATING A SMOOTH CAMERA ROTATION

If you want to have the camera do a nice smooth rotation around an object, null objects are the way to do it. A null object is an invisible object that's amazingly useful. Because they don't show up in the final image, they work great as targets or parents for objects. This rotation trick is a good example.

Set your scene length to 90 frames and load a null object and any other object you want. Select your camera as the current edit item (pressing the c key will do it) and set the null object as the

camera's parent.

Now select the null object as your current edit item. Create a key frame 0, and then rotate the camera 360 degrees in the H axis. As you rotate the null object, you'll notice that the camera moves with it. When it's moved 360 degrees, set a key frame at frame 90. Make a preview and view it.

To see how well this actually works, try recreating the same effect using a different method. Or take my word for it—it's not fun.

#80 AIMING LIGHTS

Another good use for null objects is for aiming lights. If you want to create the effects of spotlights moving across a logo, for instance, just load a null object for every light you have in the scene. Then target each light to its own null object and move the null objects across the logo.

#81 SAVING TIME WITH SHADOWS

If you plan on rendering an image with shadows, make sure you go to the object menu and set your shadow options appropriately—it can make a big difference in rendering times. One helpful hint—never have Self Shadowing turned on for spheres—it's not possible.

#82 CREATIVE LIGHTING

To give your scenes more drama, adjust your Ambient Lighting. Its default setting is 25%, which gives everything a sort of well-lit computer graphics look. Reality isn't usually that bright. A setting of 5%-15% will create a more realistic look.

#83 CHANGING THE LW.CONFIG FILE

If you're experienced with a text editor, you might want to change your LW.Config file, which is located inside the 3D drawer, which is inside

your Toaster drawer.

LW.Config allows you to set default settings for such things as spline tension, which directories you use, and single frame controller codes. One of the most useful things to change is the line that reads ExpertMode 0—change that 0 to a 1 and you'll never be warned that ray tracing takes a long time...something you may know by now.

#84 PROPERLY SIZING RIPPLES OR UNDERWATER TEXTURES

When using the Ripples or Underwater texture, the texture size should be set to the same size as the object. A quick way to set this is to go to one of the Image Map textures and click on Automatic Texture Sizing, then go to the texture you want to use. The size value that auto-sizing set will be maintained.

#85 CREATING COLOR GRADIENTS

In LightWave's Surfaces drawer there are a number of sample surfaces. These can be very useful for learning, but unfortunately, the techniques used to create the surfaces aren't described. One interesting surface is the GradientColor surface, which creates a blue to purple color using LightWave's Grid Texture. How does this work? An example might be helpful here.

Clear your current LightWave scene (if any). Go into Modeler and create a 1m x 1m x 1m Box. Make sure that the center of the box is at the 0,0,0 location. Save this, and then load it into LightWave. Go to the Surfaces menu and select Surface Color. Using the RGB slider, create a light blue color. This color will be the background color. Click on the Textures button, and select the Grid texture.

The Grid Texture's three most important attributes are Texture Size, Line Thickness and Texture Color. The Texture Size determines how far apart the grid lines are, and Line Thickness obviously sets how thick they

are. The color of the line is determined by Texture Color. Let's set these attributes.

Set Texture Size to .25 for X, Y, and Z, and set Line Thickness to .05. Click on Texture Color and create a dark purple. Render the image (low or medium resolution should be fine) and you'll get a good idea of how the Grid texture works. So—how can you create a gradient color using this texture?

The first trick is to set the Texture Size and Line Thickness to the same size. Reset Texture Size to 1.0 for X, Y, and Z, and set Line Thickness to 1.0 as well. This will cause the image to render as only one solid color—the Texture Color. This is because the lines are so thick that they cover everything. Render again to see this.

We still don't have a gradient, though, do we? To create that, we'll be using two other attributes—Texture Falloff and Texture Center. These buttons are found on most LightWave textures, and they are the key to the gradient color trick. Let's explain Falloff first.

Falloff gets rid of the effect of a texture. The numbers you enter in its requester are percentage per meter for the X, Y, and Z axes. If you entered 20 for the X axis, for instance, after 5 meters there would be no texture effect in the X direction, because by falling off 20% per meter, 5 meters away would equal 100% Falloff.

Texture Center determines where the texture 'starts'. As you'll see shortly, this is especially crucial when dealing with Falloff. Let's create our gradient to see these settings in action.

We'll start by setting Texture Center. To create a gradient that runs top to bottom, we'll use the Y axis. Set the Y to .5, which will put the center at the top of the box you've created. (Remember—the box is 1 meter on a side.) Now we'll set the Falloff. Set Texture Falloff for the Y axis to 100—this means that the texture will vanish after 1 meter. *And* (drum roll please) by the texture

slowly vanishing, the solid Texture Color will fall away and reveal the Surface Color. Render this yourself to see the effect.

You can experiment on your own with this. Try changing the colors (Surface and Texture) to create different color spreads. Also, try moving the Texture Center and Falloff's axes to X—this will create a left-to-right spread.

#86 CREATING A TRANSPARENCY FALLOFF

You can also use the gradient color technique we just described to create a strip that is opaque on one end and transparent on the other. Go to Modeler and create a flat box that is one meter high and five meters long. Again, make sure that 0,0,0 is the center of the object. Save the object and load it into LightWave.

Instead of using Surface Color as we did above, click on the Transparency button on the Surfaces menu. Leave the percentage set at 0% and click on Texture. Select the Grid texture, set Texture Size to 1.0 for all axes, set Line Thickness to 1.0, set the Texture Center for the X axis to -2.5 and set Falloff to 20. Now set the Texture Value to 100%. This will create a smooth ramp between the Transparency percentage we left alone when we first clicked on the Transparency button (0% or fully opaque) and the Texture Value (100% or fully transparent).

#87 FORMULA FOR LOOPING RIPPLES

If you want to create a Ripples or Underwater texture that loops perfectly, then this is the formula for you: $WL/NF = WS$. In English, this means that wavelength divided by the number of frames you want to make a single perfect loop equals the wave speed you should use.

If you remember Algebra 101, you can put this into action. Let's say that your wavelength is

.5 and you want the ripples to loop every 60 frames. What should your wave speed be? We just divide 60 into .5 and we find that we need a speed of .0083.

#88 USING BACKGROUNDS TO SAVE RENDERING TIME

Here's another hint for cutting down those render times. Let's say you're creating an animation where a logo is shown moving in front of another object that uses a grid pattern as its surface. Rather than having LightWave render the grid object every time, just remove the logo and render the grid object once. Save the frame, and then use that frame as a background image. This can cut rendering dramatically.

#89 KEYBOARD SHORTCUTS

There are literally dozens of keyboard shortcuts in Modeler—learning them will let you create and modify objects *much* quicker. You can get a complete list of keyboard shortcuts from Modeler by pressing the Help key. If you aren't familiar with Modeler's shortcuts, go learn 'em right now. After all, help is only a keystroke away.

#90 NUMERIC REQUESTERS

One of the things about Modeler that can't be stressed enough is to learn how to use the numeric requesters. Most buttons in Modeler have some sort of numeric requester (which can be accessed by pressing the n key), and if you don't know what they do you are missing out on about 85% of the program.

3D artist Ron Thornton, creator of some of the most amazing LightWave images ever, takes the numeric requesters very seriously. In fact, he even tries to avoid using the mouse to draw out shapes. The reason—it's generally quicker to enter the exact size of an object than to try to drag the mouse into

the right position.

Grab the Toaster manual and make sure you understand how all of the numerics work. You might find some features you didn't know were there...

#91 THE RIGHT MOUSE BUTTON AS A LASSO

When selecting points, polygons, or a volume, the right mouse button acts as a lasso. Just hold it down and drag out a shape around the points, polygons or volume that you want to select. The Shift key works the same way as it does in regular selection, allowing you to select things while parts of the object are already selected.

#92 DRAWING POINTS THE QUICK WAY

There are three different methods for drawing out points in Modeler. All start the same way—you select the Points button from the Polygon menu, and position your mouse over the window that you want to put a point in. You can then click the Make button, which is the method most people seem to use. Sadly, it's the slower method because you have to move the mouse over to click the button and then move it back into the window you're drawing in.

The quicker way is to just press the Return key. This is the same as clicking the Make button, but since you can work with both hands it's much faster. The one-handed method is to just press the right mouse button. This will put down a point wherever you click.

#93 CUTTING POINTS

Under LightWave Modeler 2.0, when you cut polygons, the points that make up those polygons disappear. There are times, however, when you'll want to get rid of an object's polygons and leave its points. To do this, go to Select Points mode by clicking on the Points button in the middle of the far left hand side of

the screen (*not* the Points button that comes up under the Polygon menu.) Select some points and press the x key to cut them. Now press the v key and the points will be pasted back in, without the polygons.

#94 CREATING A BEVELED EDGE ON YOUR LOGOS

It's easy to create a bevel on your logos. Try loading the Flatlogo object from the Tutorials drawer and follow along. Extrude the logo into two segments. Select the front faces of the logo and click on Size. Press the n key to bring up the numeric requester for size and select .95—this will make the front slightly smaller. Now move the front faces back towards the logo. To get an even cleaner look, resize each letter individually.

#95 CUTTING DUPLICATE POLYGONS USING INFO

In Modeler 2.0, if you create a flat primitive it will automatically be created with two sides. This is undesirable for some uses, since you can't extrude a two-sided polygon.

Let's say you wanted to create a triangular column that you could use Bend on. In order to use Bend, we'd have to be working with a number of segments and there is no way to directly create this type of object. Select the Disc button from the Objects menu and drag out a disc in one window—don't give it a third dimension; just leave it flat. Now press n to bring up the disc's numeric requester. Set the number of segments to 3 (to create a triangle) and click on okay. Hit the Return key to make the object.

Click on the Polygons button from the Select menu in the middle of the far left hand side of the screen. Press the w key to bring up the statistics menu and click on the + button next to the Total Polygons line. This will select all the polygons, and you'll be able to see that there are two polygons (one on each side) of our flat triangle.

To get rid of one of the polygons, first press

the *i* button. This will bring up the Info window. Click on the Deselect button and one of the polygons will be deselected. Now press the *x* key to delete the polygon that is selected. You can now extrude the polygon, giving it 20 or so segments and then use Bend on it.

#96 SMOOTH CORNERS

Sometimes you need to create a rounded corner for an object. The hard way to do that is to draw the individual points. The easy way is to drag out a disc and then remove points to leave a rounded edge.

#97 SINGLE POINT OBJECTS

You can create one-point objects in Modeler. There are two kinds of single-point objects. If you create a point and then save just the point, you've created a null object. If you create a point, and then press the *p* key to create a polygon, you've created a single point polygon—these are the objects that you use to create stars and other 'particle' objects.

#98 TWO POINT OBJECTS

You can also create objects with just two points. Draw two points next to each other, and press *p* to connect the points. This type is object will render out as a thin line, or a 'hair' type of object.

#99 CREATING DIFFERENT SHAPES WITH PRIMITIVES

Although the Disc primitive is usually used to create cylinders, you can actually it to create a number of useful shapes. You do this by using the numeric controls and changing the number of segments.

If you change the number of the disc's segments to three, you are creating a triangle. If

you wanted to create a lug nut, you might try five or six segments. As the segment number starts to get up over about 12, the disc becomes more and more circular.

Another interesting little sub-tip : a four-segment cone will create a nice pyramid.

#100 RESIZING MODELER WINDOWS

If you don't have anything in the Preview window, you can resize the windows by clicking anywhere in the Preview window, holding down the left mouse button and dragging.

#101 SELECTING POINTS FROM PREVIEW

If you *do* have something in the Preview window, mainly a preview of an object, you can select points or polygons from the Preview. Just go to Modeler's Options menu and select the still preview mode. Now you can select in the preview window the same way you would in any window. To rotate the object in preview, just hold down the Alt key and drag the object with the mouse.

Saving Time With Surface Creation

You can save a little bit of time when you create surfaces by creating one less surface than you need. Then use the Default surface as the surface you didn't create. When you load the object into LightWave, just go to the Surfaces window, rename Default to whatever other surface name you want and then resave the object.

And your free 102nd tip...

#102 EXPERIMENT

The Toaster is *fun!* It was made by fun people who work at a fun company. Enjoy it. The more you play, the smarter you'll get. Take it from me...

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OUR EXPERTS

Lee Stranahan is known across the country for his ability to show people the power of the Video Toaster. He wrote the Tutorials for the acclaimed Video Toaster 2.0 manual and last year he logged over 30,000 miles giving seminars, speaking at conventions and user's group meetings, and working at trade shows for NewTek. He is currently featured in the Desktop Images instructional tape series.

Tony Stutterheim is the director of NewTek's award-winning Revolution. As the former head of NewTek's Video department, he has been working with the Toaster since before its release. A prize-winning photographer and video editor, Tony is also responsible for many of the amazing LightWave 3D animations seen on NewTek's promotional tapes. He is currently starting his own high-end production/post-production/3D graphics studio.

John Gross is the lead instructor at NewTek University, NewTek's training program for its authorized dealers. John's classes at NewTek U have earned him high praise as a teacher and Toaster expert. He writes the "Dear John" column in *Video Toaster User* magazine, and has also worked as a graphics/3D artist in Minneapolis.

OUR CLASSES

Toaster Essentials is our general purpose hints and tips class, which covers use of the Toaster's Switcher, Digital Effects, the Character Generator, ToasterPaint and much more. Those attending will learn how the Toaster works, and techniques that they will be able to use in their work right away, whether they work in broadcast, corporate or industrial video.

LightWave 3D Essentials is designed to show people how to use LightWave 3D. Students will learn methods of creating 3D graphics; how to create and modify objects using the Modeler; how to create and apply surfaces, such as wood, glass, and water, to objects; and how to lay out a scene to create either still images or animations.

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