Digital Puppet
Summer 2004

Digital Puppets

All of the figures, clothing, and props shown in this issue are available at the DAZ Store (www.daz3d.com).

All of the illustrations of digital puppets come from the DAZ website and are reprinted with the permission of the creators of the digital figures. All right are reserved by DAZ Productions or the designers of the digital puppets.

All illustrations of Vue d'Esprit 4 and Vue 4 Professional are from the e-on Software website and are used with permission.

Digital Puppet Magazine
is written and edited by
Robert Purser

Kid Stuff by Secretheart
for **Kiki** by Lady Littlefox

Kid Stuff
CHARACTER AND CLOTHING TEXTURES FOR KIKI
AND KIKI'S CLOTHING PACK #1

The Goal Of Digital Puppet Magazine

The goal is to produce motion pictures quickly and easily. I want to be able to create an entire motion picture in four years for under $10,000 using my Macintosh computer.

The Magnificent Plan

To do this, I will use digital actors rather than live actors. Not only that, but I will use inexpensive off-the-shelf digital figures rather than design and build my own digital actors.

What's Missing?

Unfortunately, some of the technology is still missing. The biggest problem is that digital puppets do not move well. Using current technology, the movement of digital actors does not look natural and takes forever to create.

On a live-action motion picture, the director starts each scene by blocking out the movement of the actors.

As an example, the director might say, "Get up and walk over to the coffee pot, pour a cup of coffee and begin walking back to your desk while you say your lines. Stop here and continue to stir your coffee as you finish your lines."

With live actors, this scene take only a few minutes to rehearse. Using keyframe animation in Poser, this takes about two weeks and the animation will look awkward and cartoonish.

Then the director might say, "Speak faster but walk a little slower."

With live actors, this takes another two minutes to rehearse. With keyframe animation with Poser, this requires yet another two weeks and even then it still looks awkward and unrealistic.

This is not acceptable! I must find a new way to move the digital puppets in a realistic way while they interact with their surroundings. And I must do the animation rapidly so I can finish my movie in a reasonable time.

More important, I must create a performance which is genuine. The audience must believe that my digital actors have real emotions and feelings.

Preparing To Get Started

My script is completed and I am eager to start. So now, let's look at the current state of digital puppets and digital puppet software.
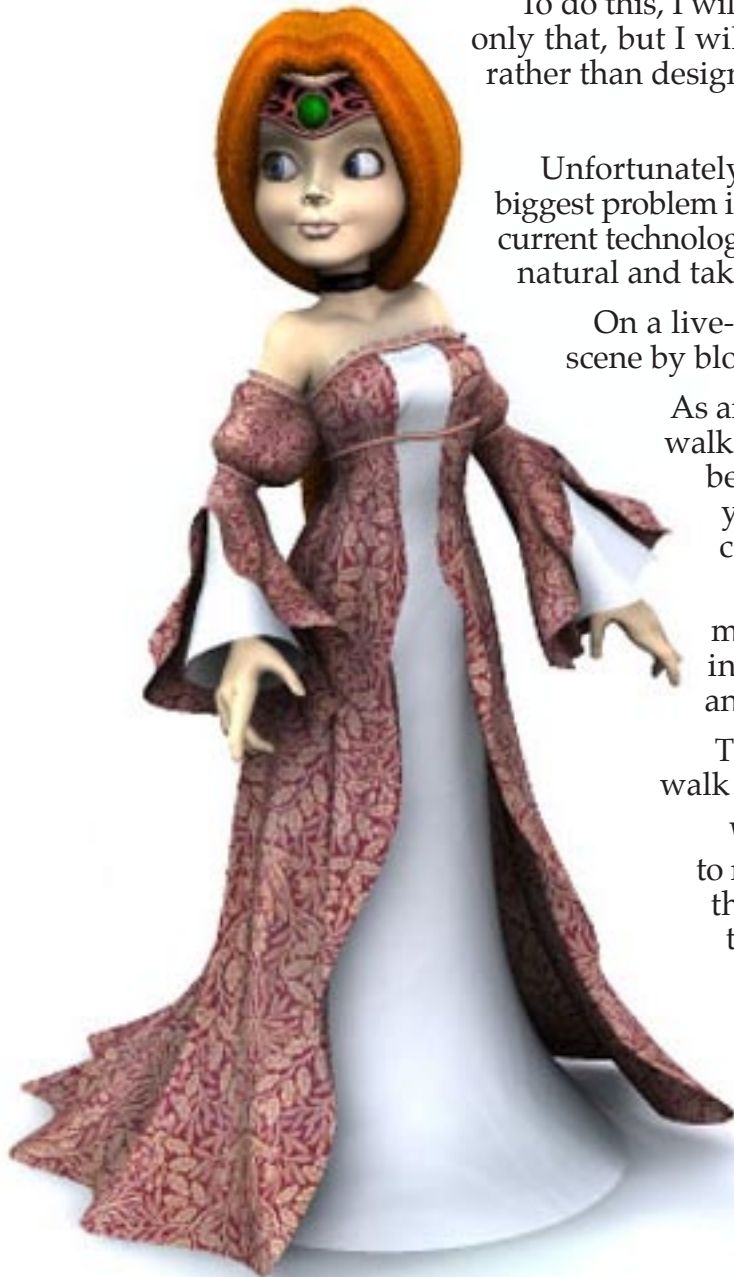
Classic Elegance
for **Koshini**
by Lady Littlefox

The figures created by
Lady Littlefox
are available at the DAZ Store
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First, the Bad News!

Progress seems to have stopped. Corel terminated development and sales of Bryce and the newest version of Poser is not recommended by DAZ Productions. DAZ Studio is only in beta and the program currently has no animation capability.

Poser 5 was finally released for the Macintosh but new features (such as dynamic hair and dynamic cloth) take too long to render to be practical for the animation in low-budget motion pictures.

Victoria and Michael

Here is the biggest shocker! The human figures from DAZ have become too realistic for low-budget motion pictures. I know that this sounds odd but I finally realized that this is true.

These figures look absolutely fantastic as **still** images but they are too difficult to **animate** realistically. Watching extremely beautiful digital actors move awkwardly in Poser destroys the illusion completely. It looks disgusting!

They Talk Funny!

Probably the best example of this problem is the demonstration movie for Mimic on the DAZ website. Mimic quickly creates lip sync movements and gestures. But if you look at the movie of Victoria talking, the results are not realistic or appealing. Yet on the Greenbriar website, this same motion file from Mimic looks OK with a cartoon character. Cartoon characters are much easier to animate since people's level of expectation is less.

Animation in Poser

The problem is the animation capability of Poser is not good enough. Even though Poser offers full keyframe animation capability, Poser is extremely primitive and awkward because of poor program design and a lack of necessary features.

I keep waiting for a new animation program to replace Poser. I would be happy with just an upgrade to Poser which fixes awkward user interface of Poser, the limited motion capture capabilities of Poser, and the limited programmable animation options in Poser.

Character Animation Software

I thought that if I upgraded to a professional animation program such as Lightwave, Maya, or Cinema 4D, all my problems will be solved. Wrong!!!

While all professional animation software offer bone structures and inverse kinematic, these programs are not designed to work with extremely realistic digital actors. None of them can simulate the movement of the human body well enough to express complex human emotions. And more importantly, none of these programs work directly with the digital puppets sold at the DAZ Store.

Clothing, Texture Maps, and Hair Sold Separately
Vistoria can be purchased at the DAZ Store (www.daz3d.com)

The Good News

I am very excited by the new digital puppets from Lady Littlefox which are available at the DAZ Store. They are ideal for the actors in low-cost motion pictures. I believe that they are much more appropriate than DAZ's Victoria or Michael for my movies.

These figures look human yet they are obviously cartoons characters. Therefore, they are the best of both worlds. These figures are exceptionally beautiful and they have a wonderful emotional appeal.

Even though Victoria or Michael are more realistic, an audience will feel more sympathy for the characters from Lady Littlefox.

Wacky World Cartoon Animals

Note: The DAZ Store also sells fantastic, new cartoon animals from 3D Universe which are wonderful for storytelling. Just looking at them, I can think of all sorts of entertaining stories. (Some of animals remind me of the Ninja Turtles. See page 8.)

Final Cut Pro

I recently began using Final Cut Pro 2 at the local college. I was blown away by the quality of this computer program. After using such horribly awkward programs as Adobe Premiere 5 and Curious Labs' Poser 4, I had forgotten what a really good program is like. Apple's Final Cut Pro is an excellent program.

Why do I need an editing program to create **animated** movies? Movies made using 2D animation are never edited. They are drawn that way! There are no extra frames in hand painted animation.

But movies made with 3D animation are created and edited just like live action movies. When I create my animation, I make each clip longer than I need. Then I edit all the clips for a scene as if I am editing a live-action motion picture.

Final Cut Pro is wonderful for another reason. Final Cut Pro has revitalized the amateur motion picture industry. No one in his right mind would consider making a motion picture with Adobe Premiere 5. But anyone who has ever wanted to make a motion picture has begun looking at Final Cut Pro.

Adobe almost killed the industry by releasing such an awkward and buggy program as Premiere 5. Final Cut Pro has brought the industry back to life... and then some.

Other Software

GarageBand is great fun. It will have a tremendous impact on making music for motion pictures.

Apple has released a new program for title animation and compositing called Motion. I will be looking at this soon.

Now that Adobe Premiere Pro supports surround sound, I hope that Final Cut Pro will soon have surround sound too.

Rompers
For **Kiki**
by Lady Littlefox

The figures created by
Lady Littlefox
are available at the DAZ Store
(www.daz3d.com)

Ultra Realistic Digital People

DAZ has created remarkably realistic and extremely beautiful digital figures. These human figures are superior to the figures currently available from any other 3D model company.

Note: DAZ Productions makes figures for the motion picture and gaming industry. If you see a good looking human figure in a motion picture or a game, it was probably produced by DAZ.

The full figured woman is called *Victoria*. The man is *Michael*. There is a more athletic woman called *Stephanie*. These figures are now at version 3. There are also girls, boys, and a baby but they are still version 1.

Currently, there are 150,000 illustrators and artists who use these digital figures to produce **still** artwork. This is absolutely amazing. The human figures from DAZ have started an entirely new cottage industry for artists and illustrators.

Producing commercial art or fine art containing human figures is hard because the human face is exceptionally difficult to draw. Fewer than 1 in 10,000 artists is able to draw human figures realistically.

By using digital figures from DAZ, artists can now make ultra realistic illustrations which are amazingly beautiful. When combined with scenery from Vue d'Esprit or other scenery generation programs, the results are fantastic... and extremely valuable.

 Go to the DAZ and e-on Software's websites and look at their gallery of illustrations. The artwork is absolutely breathtaking!

Animation Options

There are many ways to animate these ultra realistic digital figures but currently, they all have problems. Because these figures look so lifelike, any problem with the animation will be magnified:

1. Keyframe animation means creating one dramatic pose after another and then the animation program (such as Poser) calculates all the positions in-between. Without other aides, keyframe animation looks unnatural when used with ultra realistic digital puppets.

2. Programmed movements can be useful but Poser and Live Motion have only a programmed "walk" which looks unnatural when use with realistic human figures. Mimic offers programmed facial expressions and lip movements but I have not tested this program.

3. Inverse kinematics is an aid to keyframe animation. It tries to imitate natural movement of the joints of the human body but currently there is no program which does this ultra realistically.

4. Video animation is the v11.1 ideo taping of live actors and then using keyframe animation to match the movement in the video frame by frame. Poser does not do this easily. Live Motion has this capability but the program cannot work directly with the DAZ figures.

5. Motion capture is the most natural form of movement but Poser can only import animation in a simple format. The same with Live Motion. Kaydara's MotionBuilder works much better with motion capture data but the professional version costs over $4000 and the program does not directly support the DAZ digital puppets.

Michael can be purchased at the DAZ Store
(www.daz3d.com)

Stylized Digital Puppets

While DAZ Productions has been developing their ultra realistic figures, Lady Littlefox has created figures which are more entertaining yet remarkably beautiful.

I think the human figures from Lady Littlefox are the first digital puppets good enough to make a low-budget motion picture.

At the DAZ Store (www.daz3d.com), you will find the five basic figures from Lady Littlefox. The girl is called *Koshini*. The boy is *Ichiro*. The little girl is *Kiki*. The slightly more realistic and voluptuous woman is *Krystal. Koshini 2* is an improved version of Koshini.

The digital puppets of Lady Littlefox have been so well received, there is now a wide selection of clothing and other options for this family. A good example is the beautiful products from Secretheart also sold at the DAZ Store.

Lady Who?

Lady Littlefox is also known as Regina LaGrone. She lives in the Midwest and her degree is in Mechanical Engineering Technologies.

Not only does she do 3D computer art and cartooning but she also is a welder, a trained machinist, an amateur glassblower, seamstress, cake decorator, wood-carver, and stain-glass worker.

She uses Lightwave for modeling, Poser for rigging, Deep UV for uvmapping, Deep Paint 3D and Photoshop for texturing and final touchup.

The figures created by
Lady Littlefox
are available at the DAZ Store
(www.daz3d.com)

The Cost Of Digital Puppets

Let's look at the economics of digital actors for low cost motion pictures. There are two ways to buy digital puppets. Off the shelf or custom made.

Lady Littlefox makes custom Poser models which generally run around $3K to 5K. Each model takes around 4 to 8 weeks to develop, test, texture and so forth.

Or you can go to the DAZ Store (www.daz3d.com) and buy her digital models off the shelf at an extremely reasonable price. As an example, the basic figure for Ichiro costs only $19.95 at the DAZ Store.

Then, by purchasing *Ichiro Pak 1 - Skaterboy* for $19.95, Ichiro can be turned into a skaterboarder. By purchasing *Ichiro Pak 2 - Classic Romance* for $19.95, Ichiro can be turned into a romantic figure from Shakespeare.

Quickly, you begin to see the economic advantage the digital puppets sold at the DAZ Store.

More Options

Lady Littlefox tells me that Capsces released a lovely pack called *Maniken* about 3 months ago at the DAZ Store. The pack transforms Ichiro into multiple new characters including older men and old woman of many varieties and you can mix and match the morphs.

Also Sarsa has plans on releasing some textures to go well with Ichiro soon with the release of an upcoming Ichiro pack for Mid June.

Because the figures are standardized and so extremely popular, I anticipate a huge selection of accessories (clothing, props, and variations) will be created for these figures. And the more accessories that are created for the figures from Lady Littlefox, the more popular the figures will become.

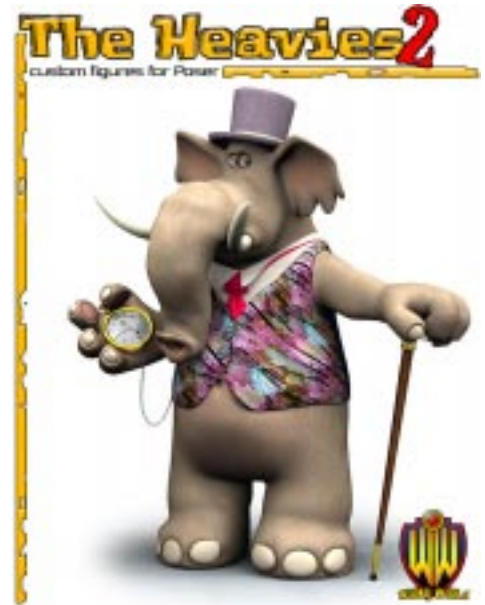That is wonderful news for digital filmmakers.

Skaterboy by Sacretheart
for **Ichiro** by Lady Littlefox
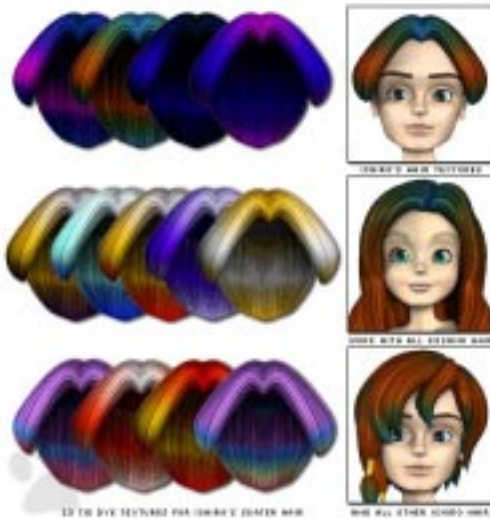
The figures created by
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Wacky Cartoon Animals

A new kind of digital puppet which is great fun for motion pictures is called "The Heavies". There are now three complete families (or species) of The Heavies starting with hippopotamus. The Heavies 2 are elephants. The Heavies 3 are bears.

There is also Sal A. Manda which is a salamander.

The Wacky World Heavies are produced by Dark Whisper (Steve Corder) of 3D Universe in Sedgfield, South Africa.

All of these wonderful figures are available from the DAZ store. Costumes and props are included.

The Wacky World figures created by
Dark Whisper of 3D Universe
are available at the DAZ Store
(www.daz3d.com)

Curious Labs' Poser

The digital figures from DAZ and Poser have become extremely popular for producing **still** artwork of human figures. Version 5 of Poser adds many exciting features for still artists such as more realistic hair and drapable cloth.

However, as an animation program, Poser is less than ideal. I was recently reminded by a reader that Poser was obviously designed by artists for artists. That means the program often seems totally illogical and can be extremely awkward to use.

Poser 4 (which is the last version recommended by DAZ Productions) gives users a wide selection of animation tools but some of the tools are hard to find and most tools are slightly crippled. None of the tools work with way that any sane person would assume. Users must spend the first week just trying to find out what each tool does under every circumstance. (Unfortunately, the manual does not always help.)

When you want to animate something in Poser, you should be able to pick any appropriate tool and do what needs to be done. However, Poser does not work this way. Only ONE of the tools will actually do what is needed and all the other tools just cause problems. What make this even more annoying is the correct tool for a given task is not obvious or intuitive.

Since I am an engineer, I know that I can eventually figure out any computer program. But with Poser, this is **not** an enjoyable task. Poser is neither easy nor efficient. Because different parts of the program are written by different people, one part of the program will work differently from other parts of the program. No one kept the program consistent.

The good news is now that I have learned how to use Poser (how to fight with the program and win), Poser does work for keyframe animation. Once I figured out the workarounds, it is possible to become reasonably proficient with the program.

When I talk to people who are trying to learn the program, I give them this advice: If you cannot do something, you are using the wrong tool. Try other tools... even tools which should **not** work in this situation. Try switching to a different view or focal length or try using the tools above the window by dragging on the **tool**, not by dragging on the body part. I also recommend using the dials. The dials are extremely useful when nothing else works. (I actually use the dials and the graphs the most.)

Note: Curious Labs (which produces Poser) has been purchased by an animation company in Japan (not by the makers of Vue d'Esprit which would have been the ideal marriage.) Apparently, Creative Labs will try to combine the Japanese animation program "Shade" with Poser.
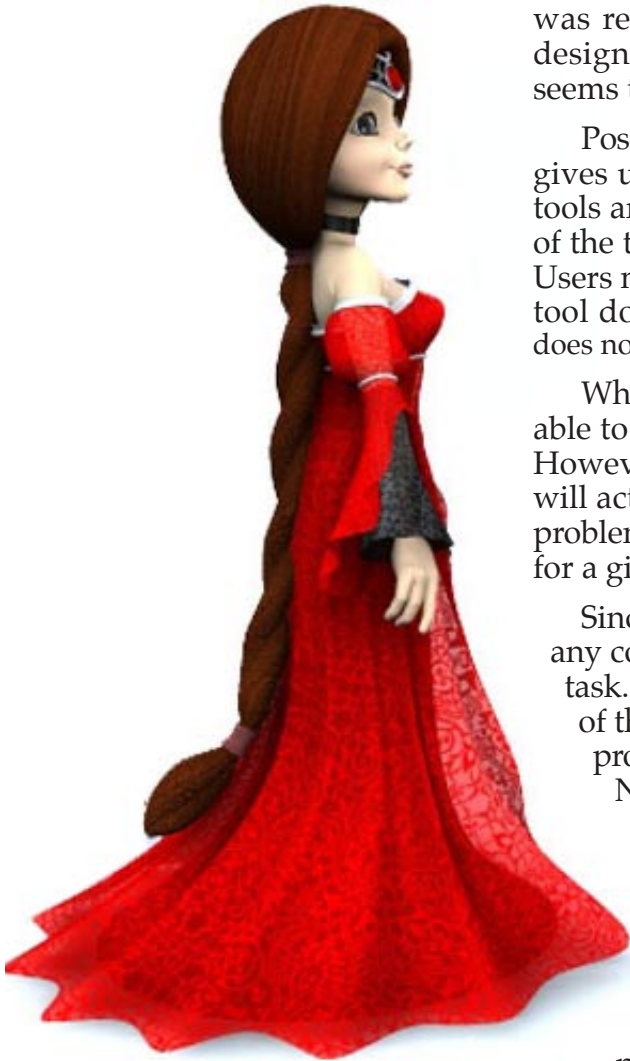
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Vue d'Esprit 4 & Vue 4 Professional

In the last few years as Corel stopped all development and sales of Bryce, a company called e-on Software created a replacement program for Bryce named Vue.

Each version of Vue has improved dramatically with more features... and a higher price. Currently, there are two versions for the Macintosh — Vue d'Esprit 4 and Vue 4 Professional. The professional version costs almost $500.

Vue is a good replacement for Bryce. Bryce was the first consumer program for building scenes from nature and it gained a loyal following. But now that I see the amazing quality of images from Vue, I don't mind the termination of Bryce by Corel.

Vue 4 Professional requires a very fast computer. Bryce was famous for sucking up all your computer's power. Vue 4 Professional is no exception. If you want to run Vue 4 Professional, you should have at least a G4 at 1.25 GHz Macintosh.

To combine moving images from Poser with moving scenery from Vue, e-on Software has an importer program called Mover 5 which will import Poser 5 animation into either Vue 4 Professional or Vue d'Esprit 4. However, Mover does not integrate the two programs and that is what is needed.

Bryce has one major problem. Bryce does not do vegetation well. Fortunately, Vue does not have this problem.

Or to put it another way, Vue has flowers and Bryce does not. This might not seem like much... until you see how beautiful the flowers are. Then you will fall in love with Vue.
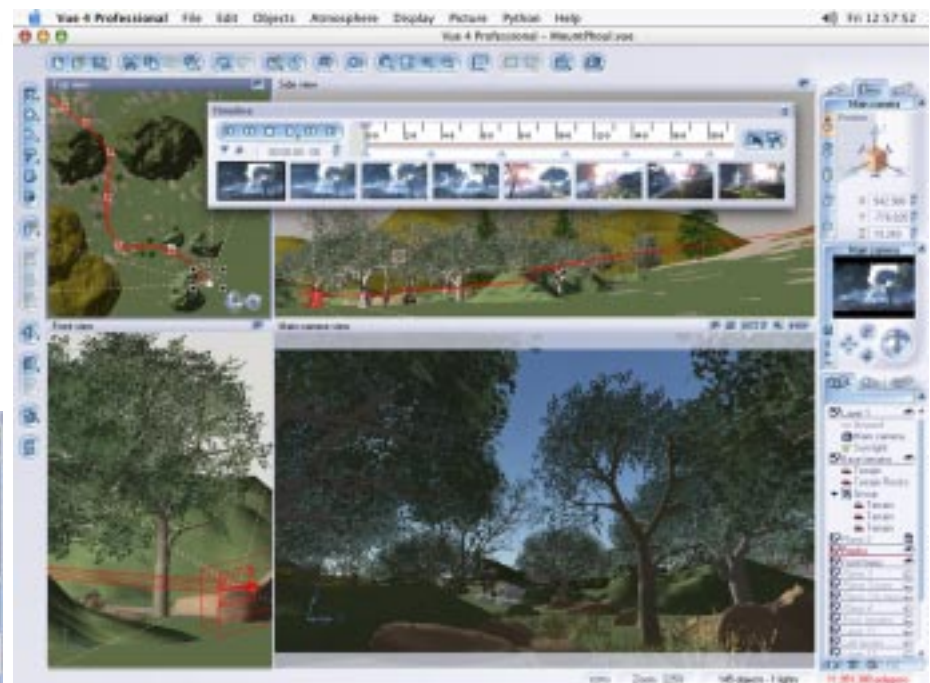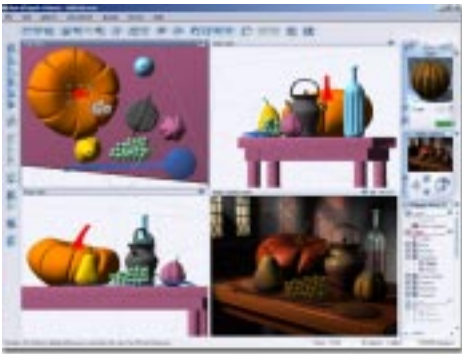
The 20 Steps To Make A Motion Picture

Currently, I have a CRT iMac which runs at 500MHz which is not fast enough to run newer programs such as GarageBand which is ideal for film scoring. To use the latest Macintosh OS X software, I need a new Macintosh computer.

I like the eMac which is low cost and very fast. For $1,500, the new eMac computer comes with 1 gigabyte of memory, an 8X DVD-RW Super Drive, a 160 GB hard disk drive, and a 3 year AppleCare Protection Plan.

As an alternative, I am looking at the G4 PowerMac which can boot in both Mac OS X (with its Classic Mac OS 9) or boot in the full version of Mac OS 9. The high cost of the computer screen is the only problem. The obvious advantage of a G4 PowerMacintosh is the computer opens up for easy hardware upgrading. I cannot do this with an eMac.

Sorry. I do not like the current iMac computer because it is impossible for me to replace the battery inside the very tight case. The battery in my CRT iMac has gone out three times and I live 40 miles from the nearest service center. Never again!

In addition to the Macintosh, I will eventually need about 3 terabytes of disk space. Originally, I purchased two ultra-cheap Firewire/USB drives which are commonly available on eBay. While the drive mechanisms work fine, both Firewire interfaces burned out very quickly leaving only the USB connections. Not recommended!

Currently, I am testing the Wiebetech ComboDrive. I am also concidering buying antique Macintosh servers on eBay which cost the same as an empty Firewire case and installing a 120GB drive.

Getting Started

Here are the twenty steps for creating a motion picture. Each step requires different software for my Macintosh.

1. Script Writing

I can easily rough out a moive script using any word processing program. However, after that, I need a script formatting program to polish the script. I use Final Draft.

No matter what anyone says, it is absolutely impossible to properly format a motion picture script without a script formatting program. If I make just one change on the first page, I would have to update as many as 90 pages by hand if I use a word processing program. Final Draft reformates the pages automatically instantaneously.

2. Stickfigure Storyboard

I create my thumbnail storyboards using paper and pencil. Each frame is no bigger than my thumbnail (hence the name.)

Arabesque by Secretheart
for **Koshini** by Lady Littlefox

The figures created by
Secretheart and Lady Littlefox
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(www.daz3d.com)

Later, if I am ambitious, I will use Adobe Photoshop and a Wacom tablet to create a larger version at quarter size.

Note: Older versions of Photoshop are fine for this. I use version 4 of Photoshop.

3a. Computer Models — Digital Actors

I want complete control when I make a motion picture. That is why I use digital actors.

Martin Hash, the creator of Animation Master, told me that I should make my own digital puppets... from scratch. He is crazy! Only about one person in a million can create good looking human figures. I am an engineer, not an artist. I want to spend all my time making movies, not sculpting. That is why I do **not** use Animation Master.

Currently, the best digital puppets are available from the DAZ Store. There are many other websites which sell their own posable figures but I think the best looking figures are sold through the DAZ Store.

At the moment, I am creating a short movie which is both educational and entertaining. To keep things simple, I am using the basic human figures which come **free** with Poser. These figures do not look as good as the newer digital puppets but they are good enough for educational movies.

3b. Computer Models — Costumes

Costumes make the actor. This is just as true with digital puppets. The problem is there are never enough costumes available off the shelf. For a future project, I am looking for a pompous, old WWII German General in full uniform. So far, I have had no luck finding his costume.

3c. Computer Models — Props

Just like costumes, locating the necessary props is a problem. Poser is not a modeling program and there are never enough props available from the DAZ Store or other sources. Props can be made using a 3D animation program but I have not found the ideal 3D modeling program for this. Perhaps once Poser and Shade are combined, Shade might be a good way to model props for Poser.

4. Full Storyboard

Poser 4 is a good program for creating the still images for storyboards. For a storyboard, I normally create just one or two frames for each shot of the movie.

To produce a frame for the storyboard, I create the opening frame for the shot without any background scenery. If there is a lot of action or camera movement in the shot, I also create the ending frame for that shot.
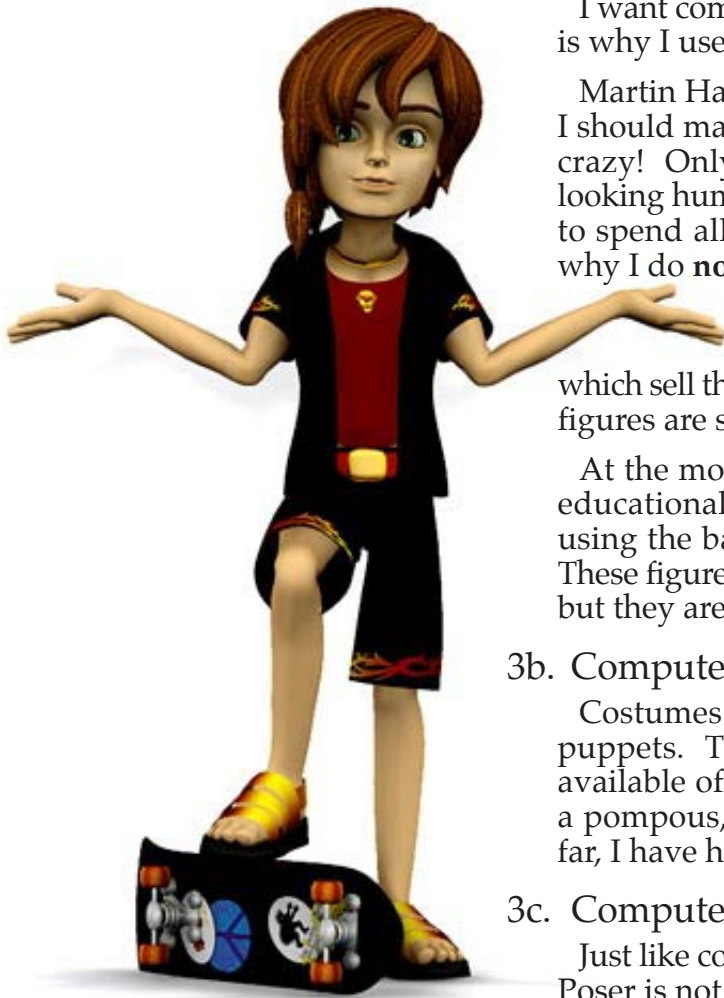
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Later, I will use the same Poser files to produce the final animated movie clip for the motion picture.

5.   The Animatic

An animatic is a movie of the storyboard. The animatic shows me roughly what the movie will look like. More important, it gives me the timing of my movie. Frequently, I will go back and change the script once I see the animatic.

To create the animatic from the storyboard, I put all the still images (at 320 by 240 pixels) from the storyboard into an editing program and I make a rough edit of the motion picture. I use my normal speaking voice for all the actors.

Almost any editing program can do this. You can use something as simple as Premiere 4.2 or as fancy as Final Cut Pro. Note: I do not use iMovie, Final Cut Express, or Avid Free since they require movies with the DV codec which require too much disk space. (I use an old version of Premiere simply because it is handy.) If there are two frames for a single shot, I dissolve between the frames. Between scenes, I use a fade. Otherwise, I use a cut. Even Premiere 5 can do that.

6.   Recording the Dialog

Recording dialog or any audio on any Macintosh computer is a pain. To record sound, I need a professional quality microphone which use a low impedance XLR connector. (Never use the microphones from Radio Shack.)

Apple does not have the necessary connections built in. To connect a microphone to my Macintosh, I must buy an additional interface device... even if the interface is just a small audio mixer board (which is what I currently use) plugged into the audio input jack of my iMac.

I would much rather record sound using a Firewire interface for audio. But the price for these units is still too high. The advantage is Firewire allows for 24-bit rather than 16-bit audio as with USB. Working with 24 bits is much easier than 16 bits. (I use the extra bits as headroom.)

I wish I had a Powerbook or iBook connected to a professional microphone to record dialog. I also want the ability to record four tracks of atmosphere in 4-track surround sound.

There are dozens of programs for recording dialog. Premiere 5, Final Cut Pro, or any DAW program (including ProTools Free using Mac OS 9) will record dialog. But I also need to edit the sound files that I record.

Currently, there is only one program which can trim and massage individual sound samples of a sound file on the Macintosh. This is Bias Peak. A light version of Peak comes with Final Cut Pro called Peak Express. I have not tried this

Boys Will Be Boys
by Secretheart
for **Ichiro** by Lady Littlefox

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version of Peak. The first version of Peak was slow and awkward to use and required many more keystrokes than the now defunct SoundEdit 16 rev. 2 program which was a great little program. I find this very annoying.

An alternative method for recording dialog is to use a MiniDisc recorder such as Sony's MZ-37. This was the last Sony model to accept regular batteries without the need for a special box to hold the batteries. Currently on eBay, a used Sony MZ-37 sells for a higher prices than new ones sold for just two years ago. It has become a real favorite.

Powered microphones for MiniDisc recorders which are designed for recording concerts are good for recording the human voice (dialog) if you have a very quiet room with no echos. I always use the manual setting for the volume. The automatic volume setting never works for dialog.

The only problem with all MiniDisc recorders sold in the USA is digital audio cannot be transferred digitally from the MiniDisc recorder directly into the Macintosh computer... despite what the sales literature implies. Our wonderful Congress will not allow this. Therefore, I must use a tiny analog audio mixer board connected to the audio input jack of my Macintosh computer and an program which records analog audio to do the transfer. This is very annoying since analog audio introduces noise. Ugh!!!

7.　Animation

Poser is still my only option for animating the digital puppets from DAZ. Version 5 of Poser has a new render engine but DAZ Studio does not recommend Version 5 of Poser. Therefore, I still use version 4 of Poser.

In the future, I will be looking a Kaydara's MotionBuilder with the hope that DAZ Productions will convince Kaydara to directly support the DAZ digital puppets.

In the distant future, DAZ Studio will support animation but this might be years away.

8.　Building The Movie Sets

There are many ways to create movie sets:

Method 1:　Sphere, Cylinder and Cube

Whenever possible, I try to use simple props in Poser (specifically the sphere, cylinder, and cube) to make scenery and props for my movies. Photographs can be pasted on these objects to make them look real. I realize that this is not ideal but with proper lighting, sometimes I can get away with it.

Method 2:　3D Movie Sets

Another option is to use computer models (both props and

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scenery) created specially for Poser. The DAZ Store now has an interesting collection of pieces of movie sets which can be combined in many ways to create very good looking movie sets. The selection is still limited but the quality is excellent.

Method 3:   Cyclorama

A interesting, new option from DAZ is a Cyclorama. I have not tested this but the concept sounds interesting. With version 4 of Poser, I must blur the background images that I put onto the Cyclorama to get the effect of a limited depth of field. With version 5 of Poser, the blur option of the new renderer should create a natural looking blur automatically. Note: The Cyclorama is not designed for a super wide angle lens nor a high telephoto lens. (Note: I use only these lenses for my movies.)

Method 4:   Backdrops

Another alternative from DAZ is their backdrop paintings called Millennium Environments. I have not tested these.

Method 5:   3D Programs

Most of the time, I actually prefer to use a separate scenery generation program such as Bryce. This way, all my movie sets have a similar style. I deliberately use no textures on my movie sets so my movie sets do not overpower the actors. By using lots of lights on the movie set, I get just as good an effect as texturing without any of the hassle. If I absolutely need to texture an object, I will use only a bump map rather than adding any color. This creates a very clean looking movie set.

Note: Now that Corel has stopped selling Bryce, the most impressive scenery generation program is Vue d'Esprit 4 or Vue 4 Professional. I have not reviewed these programs yet.

9.   Rendering the Movie Set

If I create a movie set with Bryce or a similar program, I render the movie set separately from the digital puppets. And rather than render my movie set as a QuickTime movie, I render my movie sets as **still** images in Bryce, usually in three or four pieces -- near, far, and very far . Then I use AfterEffects to create the "Ken Burns Effect" for animating the background scenery for my movies. I do not actually use the filter called "Ken Burns Effect" but rather I create the effect directly in AfterEffects. I load the three or four pieces of artwork from Bryce into AfterEffects and I move the camera in Adobe AfterEffects like a multi-plane animation camera. This method is 100 times faster than rendering my movie set as a 3D movie in Bryce. Therefore, I don't need a render farm for my movies.

Final Cut Pro has compositing features but they are not good enough for this. Adobe AfterEffects can control the rate of acceleration of objects but Final Cut Pro cannot.

10. Compositing

I use either Poser or Adobe AfterEffects to combine the movie set movie created with the Ken Burns Effect (from Bryce and Adobe AfterEffects) with the animated actors I created in Poser.

I have not evaluated Apple's new text animation and compositing program — Motion. It might work as well as Adobe AfterEffects which is a wonderful program.

11. Editing

Final Cut Pro is the best editing program I have used. The program is amazing, specially if you have ever used a dreadful program like Premiere 5. Both Premiere and Final Cut Pro were developed by the same person. Premiere 4.2 was the last version of the original Premiere. Yet, the differences between Premiere 5 and Final Cut Pro are so amazing, you would never know they had the same origin. (Note: Version 3 of Final Cut Pro is the only version which works with both System 9 and Mac OS X.)

12. Musical Scoring

Today, there are many ways to do film scoring:

Method 1:   Live Instruments

Both Final Cut Pro and iMovie have a voice-over tool which can be used to record live instruments while watching the movie. If you are a musician and can play lots of musical instruments, this tool is all you need to produce very professional film scores. Note: The voice-over tool is much easier to use in Final Cut Pro than iMovie since in Final Cut Pro, the voice-over tool can create many, many tracks, one after the other.

Method 2:   Digital Instruments

Apple's GarageBand is an inexpensive way to get into music production and the quality of the synthetic instruments is amazing. The only limitation is GarageBand cannot play a movie while you create your music. Instead, you must import the audio track from the movie into GarageBand or create a click track which is an audio file that has all the timing and hit points for the scene. (More about film scoring in the next issue.)

Apple's Soundtrack is also good but the current version lacks some of the features found in GarageBand. Therefore, expect a new version of Soundtrack which combines all of the features of Soundtrack with GarageBand.

Warning: Do not confuse **Soundtrack** with **SoundScape** which I do not recommend. SoundScape might be OK for corporate videos but not for motion pictures.

Remember that GarageBand requires a MIDI keyboard which can connect to your Macintosh either directly via USB or through a MIDI interface (USB or serial.)

Skaterboy by Secretheart for **Ichiro** by Lady Littlefox

The figures created by Secretheart andLady Littlefox are available at the DAZ Store (www.daz3d.com)

Method 3: MIDI

There is a wide selection of MIDI systems which can create musical scores. Be aware that most MIDI sequencers and MIDI systems are not intuitive and are never easy to set up. MIDI is so basic and so flexible, it can be a nightmare. It is amazing that such as simple system as MIDI can be so complex and awkward, specially when you are getting set up.

Some software manufacturers do not help this problem. As an example, Bit Headz' Unity Player is similar to GarageBand but GarageBand is designed for consumers and Unity Player is not. This makes a tremendous difference for filmmakers who are not musicians.

13. Sound Effects

Sound effects come from sound effects libraries or they are recorded in the field. Either way, I always sweeten (enhance) each sound effect. A program like Bias' Peak will do this. Final Cut Pro cannot since it does not work with individual sound samples. (I still prefer Sound Edit 16 version 2.)

14. Foley Sound

When I have too many sound effects to create individual (such as footsteps or the rustling of clothing), I record these sounds live while I watch the movie. Both Final Cut Pro and iMovie have the ability to record voice overs. This same voice-over tool can be used to record Foley sound... if you have a very quiet room. (Getting a quiet room is a real problem. Disk drives and computer fans are a nasty source of noise.)

I am still amazed that no one has developed a Foley sound program which creates footstep sound effects when you pound on your Macintosh keyboard as you watch the movie in slow motion. A Foley program would work exactly like "Olympic Decathlon" except it produces the sound of footsteps on various surfaces.

With a Foley program, you use your index fingers to "walk". As an example, each time you hit the "F" and the "J" key, a series of foot step sounds is heard of someone walking on a wooden floor. Another example is the "D" and "K" keys which produce the sounds of footsteps on concrete. Also there are keys for shoes on gravel, shoes on grass, squeaky shoes, etc. Each of the footsteps is unique and different, not the same one heard over and over again.

When you are satisfied, these footstep sounds are automatically added to your movie's sound track in Final Cut Pro in perfect sync with the movie.

Lady Of The Manor
for **Koshini**

The figures created by
Lady Littlefox
are available at the DAZ Store
(www.daz3d.com)

Krystal
by Lady Littlefox

The figures created by
Lady Littlefox
are available at the DAZ Store
(www.daz3d.com)

15. Mixing

Adjusting all the final sound levels and panning all the sounds can be done in Final Cut Pro. Final Cut Pro can create a mono mix, a stereo mix, and a fake surround sound mix. Currently, Final Cut Pro still does not work with 5.1 surround sound or even four-track surround sound.

Fortunately, surround sound for motion pictures is not realistic but rather stylistic so I can fake a very simple surround sound mix. I simply put some of the sound elements from the front speakers onto the back speakers at a much lower volume.

An alternative program for sound mixing is ProTools. Most filmmakers use ProTools even if they edit their movie with Final Cut Pro. ProTools has been used on almost every motion picture made in the last five years. It is the standard.

16. Titles and Credits.

I use Photoshop and Adobe AfterEffects for titles and credits. I have not tested Apple's new Motion program. Most other title programs work best for creating corporate video and flying logos so these programs are a waste of time and money. AfterEffects and Photoshop are all you need.

17. DVD-Video Formatting

Once the movie is finished, each chapter must be compressed and put onto a DVD-Video disk. In theory, you can do this with iDVD which is free with a new Macintosh but I will probably use DVD Studio Pro.

18. Archiving

I use Roxio's Toast for archiving data onto CD-Rs and DVD-Rs. Tapes are useless for archiving. They eventually rust.

Warning: Be extremely careful if you buy Toast from Roxio's website. They shipped me an old version, not the version advertised on their web site. I had to ask them to send me an update and they never sent me the new manual. Yet, they acted like it was my fault for buying from them. Not nice people! Also, on eBay, you get a better price.

19. Artwork

For packaging and posters, I use Macromedia's Freehand or Adobe PageMaker for layout and design. I always use Adobe Photoshop for working with images.

20. Distribution

I will let you know once I get that far!!!

Scene 18 Take 2 Camera A

Two Unedited Scenes
for Final Cut Pro

This issue of Digital Puppet Magazine has two **un**edited scenes on the CD-ROM which are good practice for budding filmmakers and film editors who have Final Cut Pro. These scenes are for advance film students. (The scenes on the previous issue were for beginners.)

Learning Film Editing

If you become an apprentice film editor inside the movie studios of Hollywood, you will have hundreds of practice scenes from the most exciting motion pictures and TV dramas currently being made in Hollywood. It is really great fun!

However, outside of Hollywood, there is almost nothing for film schools and film students.

Unedited Scenes For Film Schools

Here is a list of the commercially available Editing Workshops:

- The "Gunsmoke" footage is getting a bit old and the footage is sold only to recognized film schools by the America Cinema Editors' store on VHS tape. (Film students cannot buy it.)

- "Highlander Uncut" has been discontinued. "Highlander Uncut II" and "Xena Uncut" were never released. (Many men are still very eager to edit any scene from Xena.)

- I was not thrilled with "Cut To The Chase". (It has no dialog.)

- The BBC's "Bright Wolf" is very interesting but poorly directed, expensive, and must be digitized.

- I have not seen "The Bank Holdup" so I cannot recommend it.

Please Edit Me!

Scene 18B Take 2 Camera B

Scene 18A Take 2 Camera A

Scene 18 Take 2 Camera B

Scene 18A Take 2 Camera A

Scene 18A Take 2 Camera B

- ACE (American Cinema Editors) provides scene from motion pictures and TV dramas shot on film for their annual film editing contest for film students. (Very limited distribution.)

On The CD-ROM For Summer 2004

The two scenes on this issue of Digital Puppet magazine give you the opportunity to work on an actual motion picture made in Hollywood while still in the comfort of your own home or classroom. This is the real thing! This is your golden opportunity to become a film editor. (Additional software required.)

Quick Start

To use these film clips, simply import the clips into your editing program. (I recommend Final Cut Pro.)

Or you can use Apple's QuickTime Movie Player (which requires QuickTime Pro) to export the film clips into whatever format and size your editing program prefers.

Naturally, the film clips play better if you copy them to your hard drive. Be aware that if you convert the film clips into the DV codec, they will require about 2.5 GB of disk storage.

Excellent Practice

These two scenes are remarkably good for practicing advanced film editing. The writing, the acting, and the photography of these two scenes are excellent. I think the scenes are wonderfully humorous... even if the scenes are for mature audiences.

Both scenes are 2.5 minutes long. There are 12 clips for the first scene and 14 clips for the second scene, all of which run the full length of the scene. They are **all** master shots. Many of the takes were filmed with both A and B cameras which is why there are so many clips. This is a tremendous amount of coverage!

This motion picture has a very quirky style of filming with lots of hand held movement even for static shots. This adds a wonderfully dynamic feel to the footage... but difficult to edit.

With so much footage, these scenes are extremely challenging to edit. You can spend days, even weeks, trying to get the best possible edit. There are thousands of possible combinations and they all look remarkably good... yet very different. The more you work with the footage, the more interesting it becomes.

These scenes make an excellent final exam or extra credit work for advanced students.

Warning For Parents

The subject matter of both scenes is adult. Please look at the footage. If you think the scenes are inappropriate for your children, return the disk and I will refund your money.

Reminder: If your child becomes a film editor in Hollywood, he or she will be earning enough that you can retire in style. Motion picture editors can earn $100,000 per picture. Best of all, no college degree is required and no state license is needed.

All your kids need is skill and practice. Theses two practice scenes in this issue of Digital Puppet magazine are exactly what they need for learning advanced film editing.