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Stranded

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By

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Stranded

Computer Animation Thesis Report

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Introduction

I love to make movies. I've made live action and animation. Right now I prefer working in animation. In fact I'm already thinking about what to do next. I have a thousand choices and story problems running through my head. It's those choices and paths that the filmmaker takes that creates a movie. It's the filmmaker's ability to confront and solve problems that dictates the success or failure of a movie.

The choices I made throughout production were deliberate and reasoned. I chose 16x9 for my aspect ratio to accentuate the horizon and the loneliness. I chose red to appear as a sort of catalyst for the story (his cooler, the drink, the apple). The sounds were deliberately placed to enhance the mood of the scene. I wanted to leave nothing to chance, hoping to emulate the attention to detail of such masters as Alfred Hitchcock (*Rear Window, Vertigo*), and Hayao Miyazaki (*Princess Monoke, Spirited Away*).

That's not to say that surprises didn't happen or that everything turned out exactly as planned. I found quite the opposite to be true. Although I planned meticulously for many of the details, I found later that I had overlooked many others. However, it was the planning that made it possible to solve even the most difficult problems and still keep my original vision intact.

I firmly believe that only through a thorough knowledge of film language and the tools that will be used to create the film can a filmmaker hope to create a good piece of cinema. This goes for live action and animation. Technical knowledge of animation tools will only provide for a good-looking film, not an engaging film.

There are plenty of films that only look good. As well as there are many good stories that become distracting because of a lack of technical knowledge. I believe that I've accomplished a nice looking film with a good story.

Story Development

Coming up with a well-developed idea remains the most challenging process in film making for me. To come up with an original storyline that uses traditional narrative structure can be very difficult. The process of working out an idea is often frustrating and rewarding all within the span of a few seconds as you realize and solve the problems of telling a story.

Good Idea? I've Got Tons of Good Ideas

As with any movie, good or bad, you must start with an idea. As it often turns out, the harder you search for that great idea, the more elusive it becomes. I have an entire notebook I've kept for the past nine years filled with ideas (over 250 separate ideas). So, I looked through that and chose a couple to develop further. My original thesis ideas ranged from a comedic poem I wrote in high school to a film noir detective story. But none of them sat well with me. They all had something wrong with them. From concerns such as they weren't ambitious enough to being too ambitious, I couldn't find the right story in any of my ideas. The harder I looked, the less appealing all of the ideas became.

About three weeks into the process of working over my old ideas it came to me. I remember the circumstances pretty clearly. I began riding my bike home from my brother's after spending the evening trying to unwind and forget about my

writer's block. About half way home the idea of a man being lost at sea popped into my head. Nothing unusual or ground breaking there, but feeling that it couldn't be worse than any of my other ideas I continued to think about it.

I continued playing through scenarios, "What if he had a huge amount of string?" "Could he make a net, a shirt, a parasail out of it?" "What else would he need to survive?" "Why would we care if he got home or ended up someplace else?" Within the span of five minutes the story zipped into my head. It happened so abruptly I had to stop at a park bench and write down the idea in a notepad I carry with me for fear of losing this great idea.

After finishing, I immediately went home and told my wife, Jill. In the telling, a few more ideas developed and she came up with the wonderfully perfect title, "*Stranded.*" After that I went through about seven weeks of story and story development with my producer, Jill, and advisor, Malcolm Spaul. It turns out that about three to four shots total remain from my original idea, although the concept remained nearly the same throughout.

One of the original concepts that eventually got cut in favor of other storylines involved Joe (it helps to have a name for your character, even if it's never spoken) making a shirt out of the string to help keep warm and eventually finds himself on a tropical island, populated by people with similar string garments. It seemed a like a stronger ending to let him choose his fate at the end, rather than being washed up on shore where he magically belongs.

If You Love It, Set It Free...

I also decided to cut a scene involving him making a parasail and trying to sail home. This scene had been with me from the start and I loved it. I had even gotten to the point of blocking out the key frames in 3D. After editing it into my animatic, I found that it didn't seem to fit. After a few days of thinking about it, I realized why. It didn't fit in the story anymore.

The story had become less about him trying to get home and more about him becoming strong enough to live on his own. You hear it over and over again, cut out the shot you love most and your film will be better for it. Although this isn't always the case, it certainly worked here.

After cutting the parasail scene I had to change the opening of one more scene. Originally, Joe was to lasso a swordfish in the hopes of getting home. After deciding it was no longer about getting home, I changed it to him trying to catch fish with his net. We already saw him using the net, now we get to see him use it in a way that we presume is going to be successful.

It's amazing how someone can become fixated on one solution and not realize how simple the answer really is. After cutting that one scene the story really fell together. Had I been unwilling or unable to cut that one scene the entire film would have had an entirely different feel to it, and I believe not for the better. Having an unbiased eye towards your own film remains a skill that I hope to continue to develop.

Visual Considerations

Unlike traditional live-action film, which has certain limitations, an animator must decide on the entire look of the film. From the color and design of the character to the detail present in the background, every single detail is the responsibility of the animator.

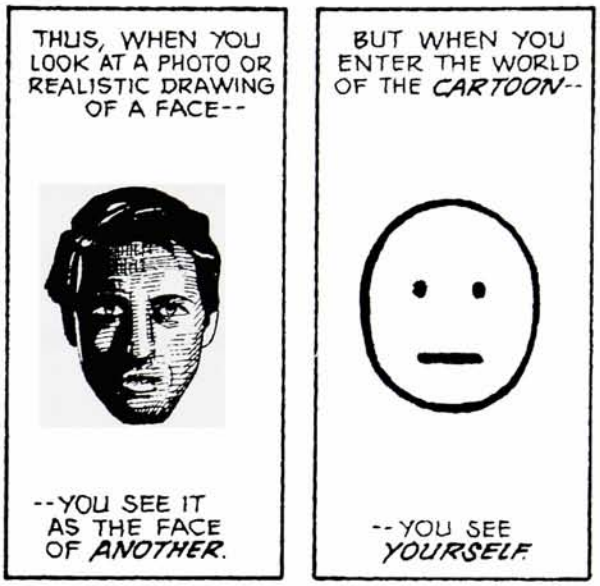
This Is Not A Pipe

There's a very famous painting of a pipe by Rene Magritte. Its French caption reads," Leci n'est pas une pipe," which simply translates to "This is not a pipe." Without going too deeply into the philosophy behind this, simply the painting is indeed not a pipe, but actually a painting representing a pipe. Yet, if shown the image, nearly everybody would say that it was a pipe. They would say so not because they are fools and actually believe they could use the piece of art to smoke their tobacco, but as humans we seek to find meaning in the meaningless. In this case, a few brush strokes on a piece of canvas.

Now, all of the visual arts could be considered to be merely an iconic view of the real world, whether it is of a person, place or object, or something intangible such as emotion and thought. As an artist it is important for us to decide to what extent we abstract these real world notions. In *Understanding Comics* by Scott McCloud, he discusses the great variations in which comics have sought to do this, all with varying results and intents.

Along these lines, the more iconic or abstract a character the more likely the reader will identify themselves with that character. The more realistic, the less likely they'll identify with that character and more likely they'll see that person as someone

else. For instance, would we identify with Charlie Brown if he were drawn like Brenda Star or Prince Valiant? Or, this example from page 36 of *Understanding Comics*:



Icon Do It!

Once I decided that I wanted the audience to have a strong attachment to my character I started doing some sketches of the character. Fairly early on I decided on a design of a character that was very plain (he doesn't even have ears). I also decided that he wouldn't be so plain so as to be devoid of character. He did have a personality that I wanted to be conveyed quickly to the audience. (Appendix B) Later it would be this character design that would lead me towards decisions on how to work the backgrounds.

As I continued to work on the film I went through a number of different shading techniques for the skin of the character. I wanted to show time passing, having his skin become more and more tan (actually more colorful) remained very

important throughout development. I tried out a number of techniques including, scanning in clay for texture to various computerized skin algorithms to colored pencil sketches.

Finally, I decided on a toon shader, an algorithm designed to approximate the look of traditional 2D animation. Scene by scene I adjusted the color of his skin in small enough increments so as to be unperceivable to the audience, right until the end when he's put next to the people who haven't left the shore. At which point, along with his beard, you realize just how much different he is than everyone else.

We All Need a Place to Call Home

My initial concept for the backgrounds involved using 3D in a sort of semi-realistic rendering. As I continued with animating, it became apparent that this wouldn't work for two reasons. One, technically I wasn't capable completing such a task in a satisfactory way and still be able to finish all of the other tasks involved with putting together a film. Two, stylistically it wouldn't match my character.

The decision to go to a toon shader for the character was made in conjunction with the idea to switch to a 2D background. After all, it wouldn't have worked nearly as well to do one without the other. In fact, I believe it was this decision that remains the best decision I made aesthetically.

It allowed for more time to animate the character and develop his emotion. It also provided for a visual style that is unique and won't be reproduced by some plug-in, such as the liquid/ocean shader effects that became available as I started the film. Furthermore, I believe the backgrounds enhance the story and emotions of the film,

which ultimately should be the most important consideration regarding visual style in any film.

I believe this desire to create a unique look will keep the film from looking dated too quickly, which, when it comes to 3D, should be a major concern for all animators. This certainly doesn't mean that current techniques and looks will necessarily become obsolete. A good story is a good story, but technology can serve as a distraction to the audience. The software I used was new at the time and an update is already available as I write this thesis less than a year later. In two years, will people be distracted by the outdated technology, or will my story and aesthetic choices stand the test of time? I hope for the later.

Production

Going into the production of this piece, I realized immediately that I would have to proceed very carefully to ensure that I would finish not only on time, but also with a good film. I employed a number of techniques for error checking the creative process and keeping track of the vast amount of information that is created while creating a computer animation.

As the project progressed, I also realized that some of my ideas would require some pretty technical solutions. Some of these I planned for and others were surprises. As I discuss these I may need to refer to specific tools that I used to solve them. What I hope I can convey isn't so much the use of these tools but the solutions that led to their use. In other words, it's the ability to solve problems that remains one the most important skills when it comes to finishing a film.

Let's See It Again

One of the major considerations when creating a film of this size is whether it's going to work when it's all said and done. For the amount of work that goes into creating an animation, one wants to spend as little time as possible animating something that will just be edited out. Or worse yet, animating only to find it needs to be completely redone because it just doesn't work.

To begin with, a storyboard was created to test the story for camera direction and narrative flaws. (Appendix A) Then the storyboard was scanned in and edited to video to test the timing of the piece. Then as animating progressed, a rough render of the scene would be placed in place of the animatic still. At each point of this process, corrections could be made to the story, scene order, missing shots, and timing. It was this process that allowed the discovery that the parasail scene no longer worked before it was fully animated. I estimate that this process of continually checking the edit of the film saved me nearly one month, if not more, of work, and provided for a much tighter story.

One Step at a Time

When it came to a decision on how to animate this piece, I decided fairly early on to use a technique called "pose to pose" or "keyframe" animation. Keith Lango on his website www.keithlango.com has a very detailed account of this process. I used a modified version of his tutorial that uses fewer steps due to the time constraints I had. I made three separate "passes" through the piece, each time doing rough renders and replacing shots in my animatic.

The first part of the process involves blocking out the animation. To do this you pose the character in time, not worrying about how it moves from pose to pose. It ends up looking like a very jerky animation as the character jumps from pose to pose. Very quickly you find the timing and the major points of the animation.

On the second pass through the animation, you begin worrying about how the character moves from pose to pose. At this stage it starts to look like animation. It's still rough and robotic looking though. This stage tends to point out the most flaws in your timing as you realize how long it would take to walk from A to B or pick up an object.

The final pass was the finishing pass for me. This was the last animation stage before rendering. It was at this point that I went through and polished as best I could, with the time I allowed myself, each shot. I would have liked to have made one more pass through the animation but you have to know when to call it quits and finish up a project.

Viscous Circle

Before I began extensive storyboarding I knew that the water was going to present a technical challenge. When I started work on this project the new version of Maya included a liquid dynamics simulation plug-in. It looked pretty good, but actually it looked too good. It just wouldn't match what my character was about. It was also computationally very expensive and difficult to work with. I just didn't know enough, nor have the time, to use it effectively. Most animation firms have entire departments to deal with just the liquid and particle effects.

My most successful tests included a small patch of water that I used various animation deformers and shaders to turn the surface into water. This worked well, it looked a bit more like it would match Joe, and it animated very quickly. Because of how computationally light it was, I was able to hand animate a test inner tube floating on the surface very quickly.

Assuming this process would work well I jumped right into production. As the end of animating neared, I began to try and put the water into my film, as the secondary motion of the character depended in part on the water. I found out that although my original test worked well in that particular instance, it was very difficult to work within other instances.

I spent an entire day trying to get the water to work on one shot, with barely satisfactory results. Doing some quick math, I realized that, with nearly sixty different shots with water in them, this solution was not going to work. It's hard to describe the cold chill that runs down your spine when such a catastrophic realization occurs to you at such a late point in the project. At one very brief point, I actually considered the idea that I wouldn't be able to finish the project.

After a few days of shear panic and hours of brainstorming solutions, I started doing some tests on doing hand drawn water. I would hand draw six frames of pen and ink "waves," scan them in to the computer, paint on the images, bring them into the compositing program at one frame per second and then use a tool called frame blending in After Effects. Basically, it causes any movie at a differing frame rate to dissolve between frames. I also used the same technique for the ripples where Joe interacted with the water.

Coupled with the toon-shader for Joe, this solved a number of my technical and time issues. This turned out to be much closer to the look I had originally envisioned for the film, a look that would be unique and not available "out of the box." As far as buoyancy, hand animating Joe and his inner tube proved to be the most effective way of controlling the animation and it seemed to work with far less effort than the packaged plug-ins.

The Ties that Bind Us

The water wasn't the only technical challenge I had to tackle. Dealing with the string and nets presented quite a problem from the beginning. I tried various solutions, including Maya's Cloth and Paint FX, but was unhappy with the results when compared with the effort required by them.

Again, my solution was low-tech and worked well within my aesthetic and story goals. For the string, in Maya I would draw a simple (three to five points) curve. For each of the points on the curve I attached a cluster (a handle that allows you to animate curve/surface points). I then hand animated each point on the curve to match the action. I then extruded a circle along the string, creating an animated string.

For the net, I used a similar technique. I took the surface points and created clusters for each point or set of points depending on the position on the surface. I created a surface and plotted out the lines of the net on the surface. A circle extruded along the curves provided for the net. I animated the clusters and hid the surface. This leaves behind only the extruded tube net. Although hand animating the points

was slightly tedious, it proved to be much easier than wrestling with the cloth and paint FX plug-ins.

It's Like Herding Cats

The final shot count came in at seventy-one separate shots, more if you count after they'd been split for editing. I knew from the start that it was going to be imperative that I have a very good process for keeping track of all the information. I developed a form that incorporated the storyboard and a checklist so that I was able to keep track of all of the information (Apendix C). By doing this I could quickly see what the shot was and at what stage in the process it was at. These storyboard/checklist forms also had room to make notes on a shot. This proved extremely useful as it gave me a single place to keep notes about each shot.

As I was finishing up, I also created a spreadsheet that helped me to create a checklist for each shot, so that I could easily see which shots were fully finished and which shots had more work. (Apendix D) Simple things such as creating a naming convention for each shot to help me keep track of the huge number of files paid off. Each shot was named "Scene##Shot##" where "##" is a two digit number. Had I not done all of this, I'm sure I would have finished up production, only to find I was missing a number of shots I could have sworn I finished.

Putting It All Together

Getting a 3D character to match up with a 2D background (or vise versa) remains one of the most difficult challenges for those wishing to mix the mediums. It was probably this concern, above all others, that kept me from going this way earlier

in the project. It's, at the very least, expected that a character will cast a shadow. To top it off, my character would have to intersect and interact with a liquid environment.

I approached the problem by deconstructing what I needed from the shot. I needed: Joe to cast a shadow, the ability to adjust the intensity and blur of that shadow, Joe needed to be slightly visible beneath the water, and Joe needed to interact with the water. Depending on what happens and how the shot was framed, I would need some or all of these qualities.

I was able to break down the most complex shots into three separate 3D renderings. (Appendix E) The first render included all of the color information about the character above the water and the shadow cast on a stand-in plane representing the ocean using the background shader in Maya. The background-shaded object served two functions. One, it served as a mask, cutting off anything behind it, simulating the surface of the water and hiding anything that passes past it. Two, it served as a plane on which a shadow was cast.

The second render was simply an alpha channel of anything above the water, without the shadow. This layer was used to cut out the image of Joe. This allowed me to work with the shadow and color images separately. I could then adjust the transparency and blur of the shadow map in the compositing stage.

The final layer consisted of a complete color render with the background-shaded object (ocean) and shadows turned off. This produced a complete image of Joe floating in space. This layer became the underwater layer. By simply adjusting the opacity of this image, it looked as if you can see Joe underwater. As for

interacting with the water, a number of ripple effects were hand drawn and simply added to the final composition.

Rendering out in so many different layers added a relatively small amount of time to production. It gave me much more ability to control the final image than if I had tried to do everything at once. Had I had more time I would have dabbled in using reflections for even more detail. However, I believe that the overall effect came out quite well. (Appendix F)

Sounds Good to Me

Sound adds certain legitimacy to a film. Good sound can make the unbelievable believable. It allows the viewer to enter the world of the filmmaker's creation and reside there. Bad or even just poor sound will do just the opposite. Improperly synched sound effects or poor sound design will constantly remind the audience that they are only watching a movie, never allowing them to enter that world.

Realizing this long ago, I've always strived to create soundtracks that not only reflect the world the characters reside in, but also heighten the emotional content of the film. I also realized a while ago that sound effects CDs are great for rare sounds, such as gunshots and jet engines, but are often too specific to the wrong solution. So, my producer and I obtained a microphone and headed out with our camera to record audio. We spent two days recording sounds at the beach, pond, and apartment, trying to create as many of the sound effects as possible. I ended up using three sound effects from CDs, one for the wind, another for the thunder and rain and the other for a big splash, the rest were created just for this film.

This film presented a very large challenge with regards to creating a believable world. Many of the required sound effects were to be synched to what I'll call "soft" events. What I mean by "soft" events is this: when someone slams a door, sets a glass on a table or takes a step on a hard surface there is a concrete or "hard" event with which to synch the sound effect, where as, much of the action in *Stranded* takes place at sea on an inner tube with very subtle movements or "soft" events.

To help solve this problem, I created believable ambient soundtracks. An ambient audio track is a track of audio that plays in the background throughout a scene providing both a believable environment and a sense of continuity from shot to shot. These ambient tracks also served to heighten the key themes and ideas in the film. For example, I was able to use the gentle lapping of the water on the tube and breeze sounds to heighten the feeling of isolation with Joe.

I also created a number of sound effects, including ten different "inner tube" sounds and seven small splashes, which I could place at key events. Using this library of sounds, it was merely a matter of trial and error to find the right placement for the sounds. The choice of sound effects also had a lot to do with the intent of the film. The inner tube sounds, for instance, add a bit of humor to what could be considered a pretty awful situation.

The End

Finishing an animated film is probably the most profoundly satisfying endeavors I have ever pursued. It has to be, for the amount of work and headaches that are involved. Every little detail is left up to the filmmaker. Every sound, color,

shadow, and movement is the responsibility of the animator. Sure, there are a number of mistakes and compromises that a filmmaker must let go by in order to finish the film before the twelfth of never. With careful planning it's more likely the filmmaker's choice of which mistakes go through.

As a film progresses one can only plan for the worst and hope for the best. Proper pre-production for something as labor intensive as a 3D animation cannot be emphasized enough. I spent nearly one third of my entire project time planning and preparing before I even sat down in front of the computer. I feel very strongly that this time was invaluable and saved me twice that amount of time in the production phase.

Throughout the film I relied heavily on the help of others, through opinions on storylines, opinions on editing, and technical suggestions. Periodically, I would show it to someone who had never seen it to check that the story still held together and I hadn't made too great an intuitive leap in story telling. I didn't always take the suggestions given, but they would often get me thinking about where the problems were.

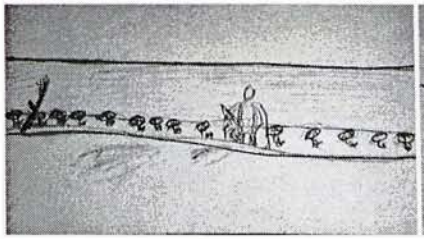
Proper knowledge of the tools is necessary for any artist. Would you expect to be able to paint a picture if you didn't know how to use a brush? Filmmaking is no different. But knowledge of the tools isn't enough. Just because you can hold a brush, does it mean you can paint a masterpiece? Knowledge of cinematography, editing, sound, scriptwriting, and acting are all necessary to create an engaging film. And yet, is textbook knowledge of your art enough to do well?

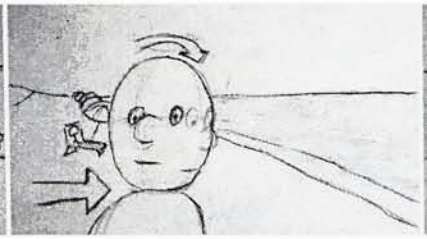
The artist armed with a basic knowledge of the tools and language of their chosen art, still requires one more set of skills. I believe that without creativity and the ability to solve complex problems an artist can only hope to create works of art that tread where others have already gone. Without the ability to use the tools in new combinations and unique realizations, an artist can never hope to create anything truly engaging.

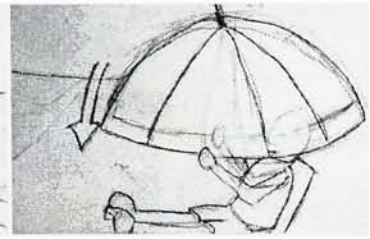
It is with this desire to create something truly engaging that I produced *Stranded*. I wanted the story to be worth watching more than once. I wanted to have a look that was engaging and unique. I feel that through hard work and careful planning, I was able to accomplish those goals. I'm very pleased with the end result.

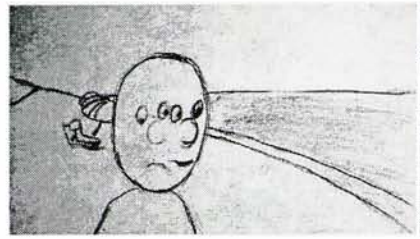
Appendices

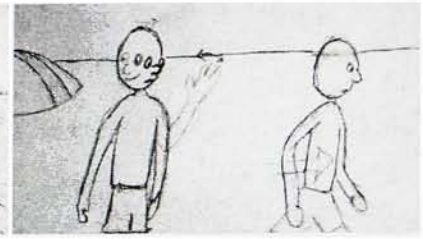
A. Original Storyboards
B. Assorted Production Sketches
C. Storyboard Checklist
D. Render Checklist
E. Typical Compositing Setup
F. Selected Stills
G. Programs Used
H. Bibliography
I. Proposal
J. Credits

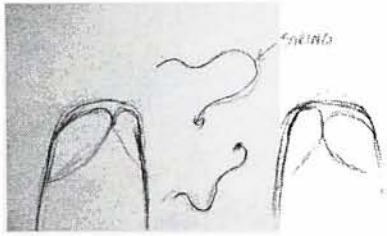


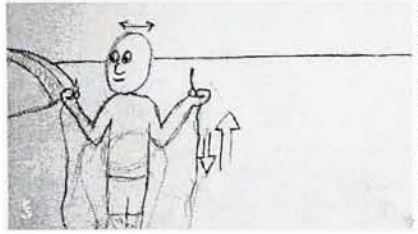


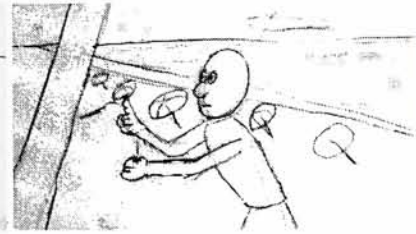


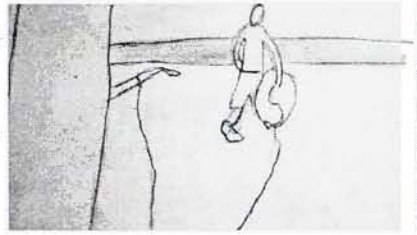


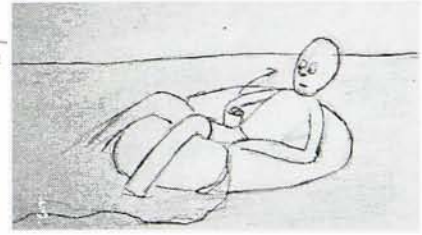


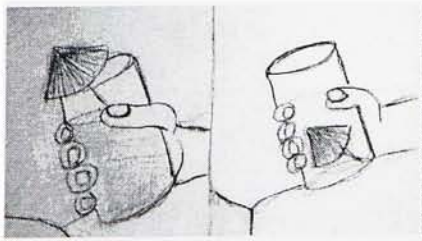


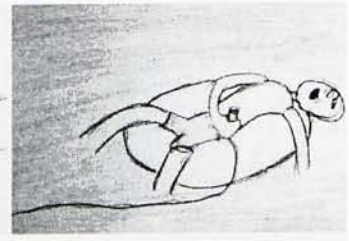


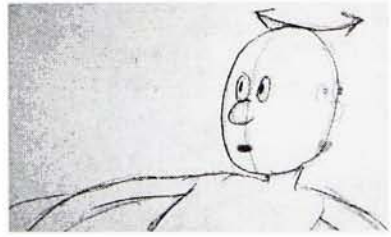


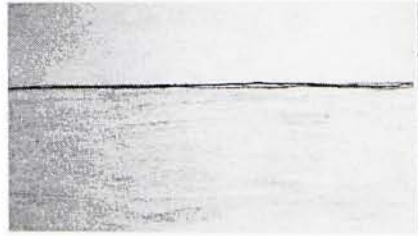


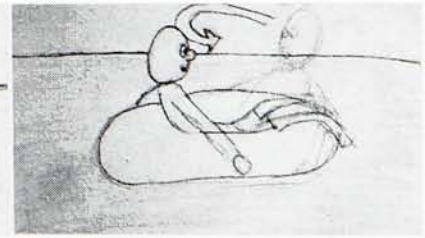




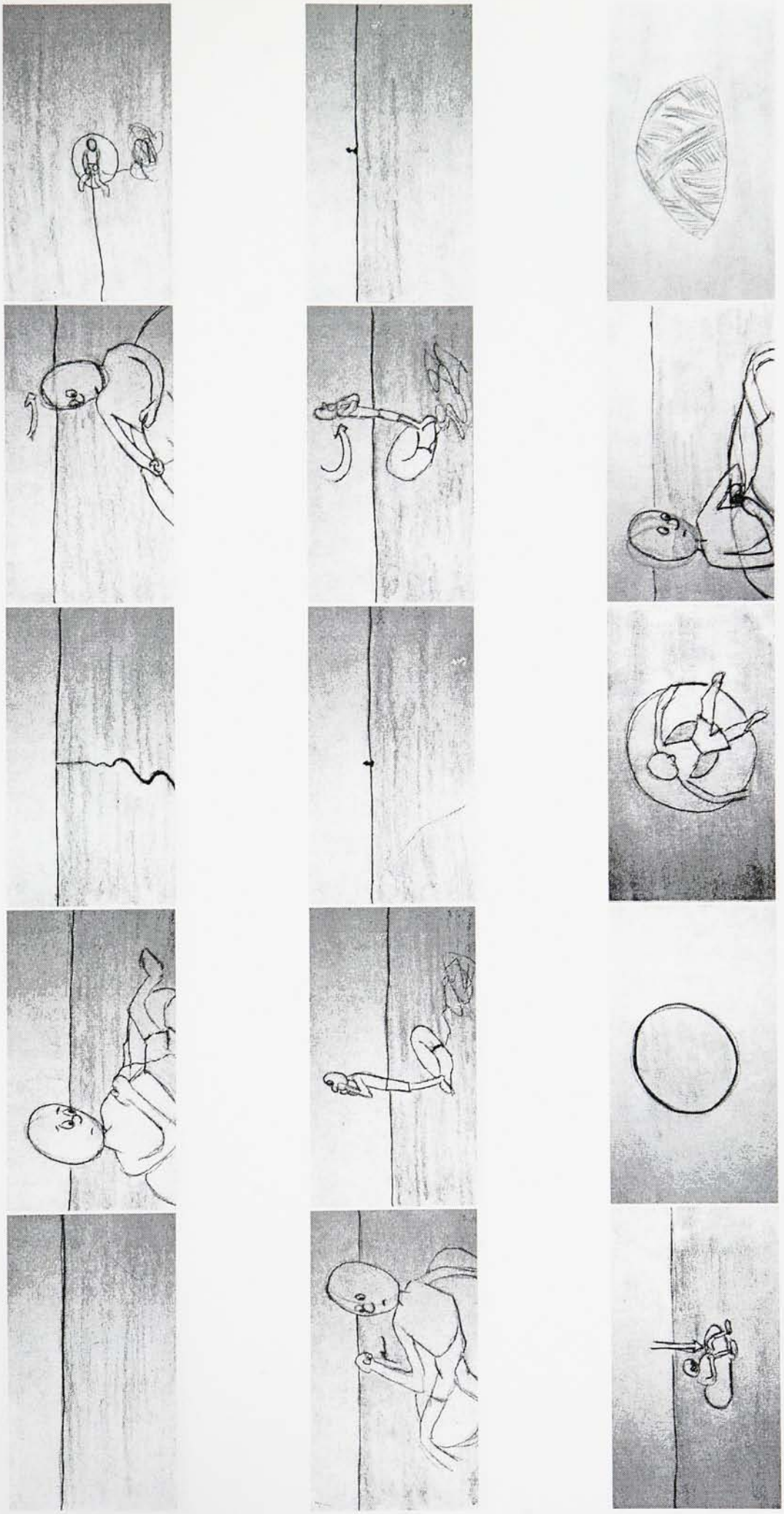


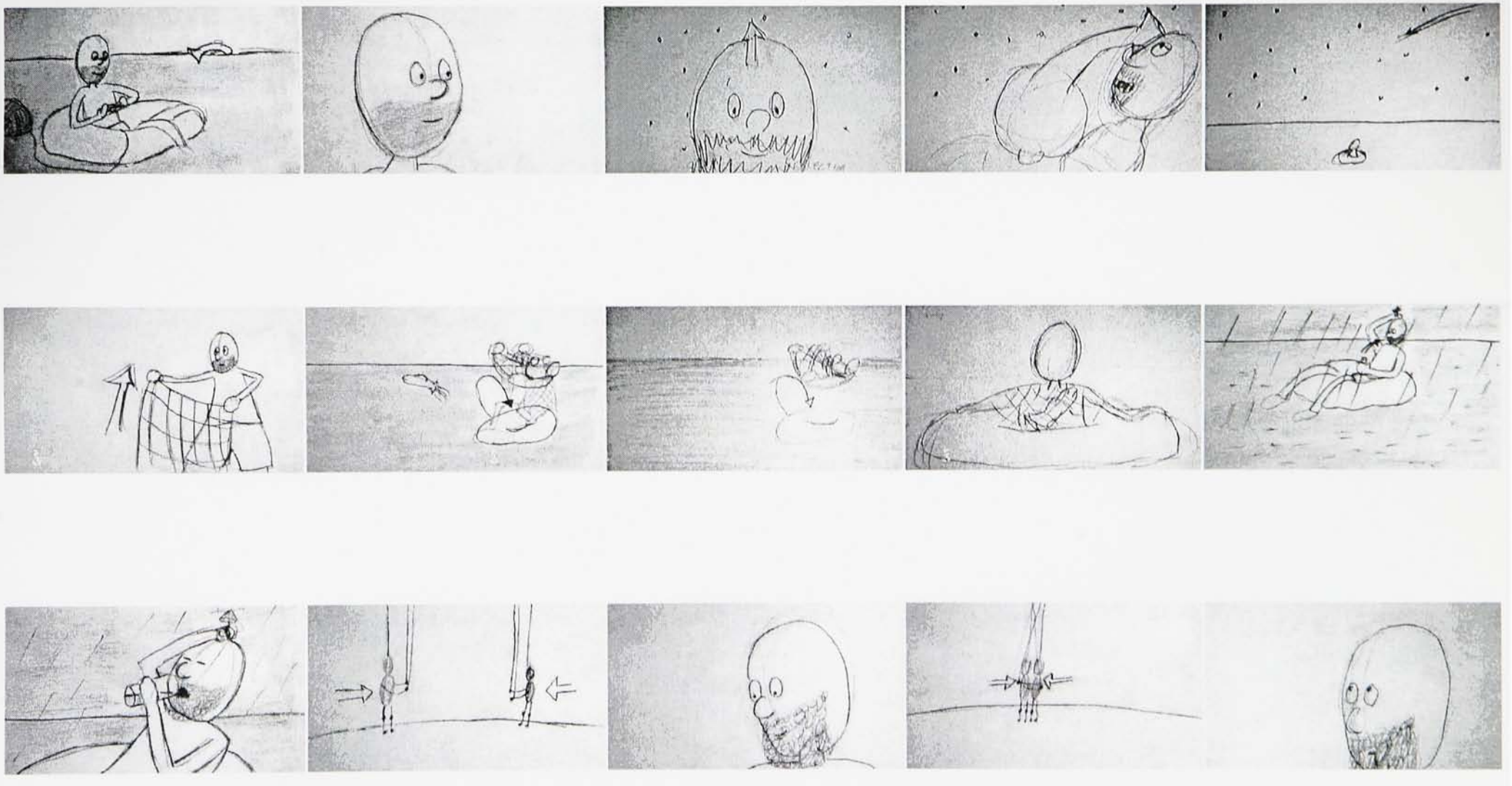


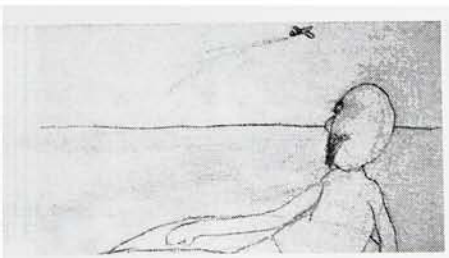
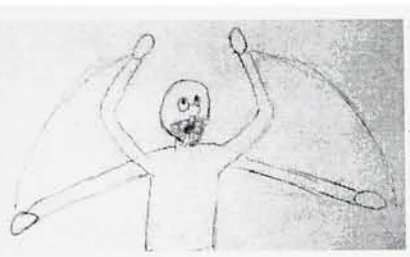
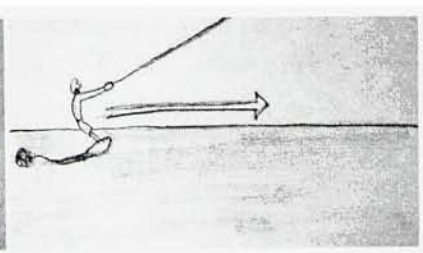
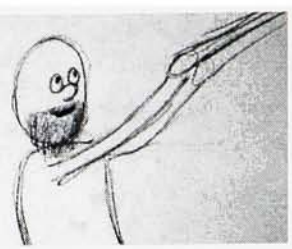
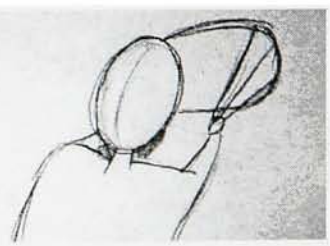
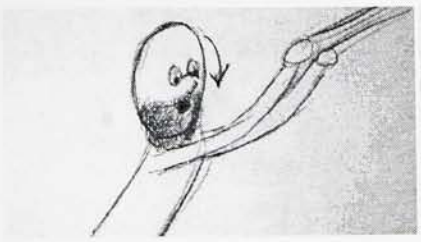
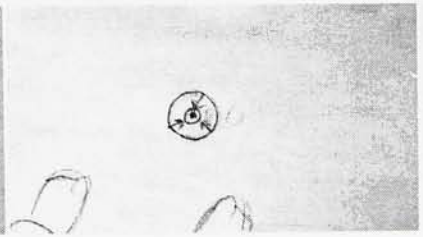
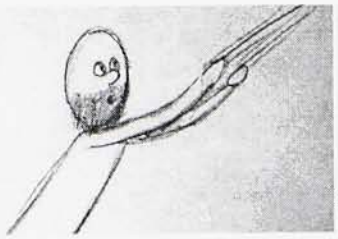
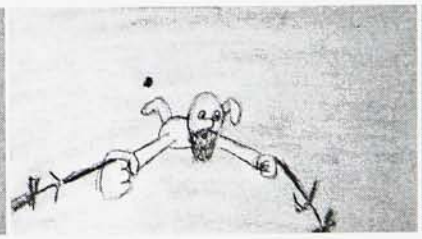


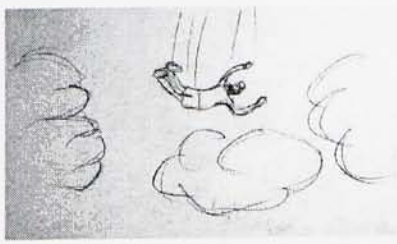
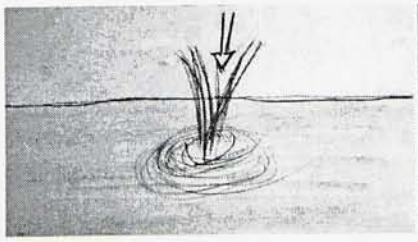


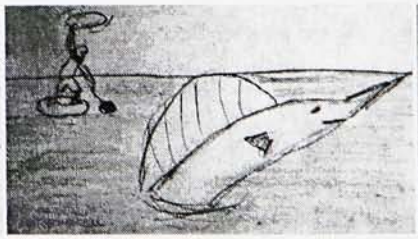
Appendix A: Storyboards

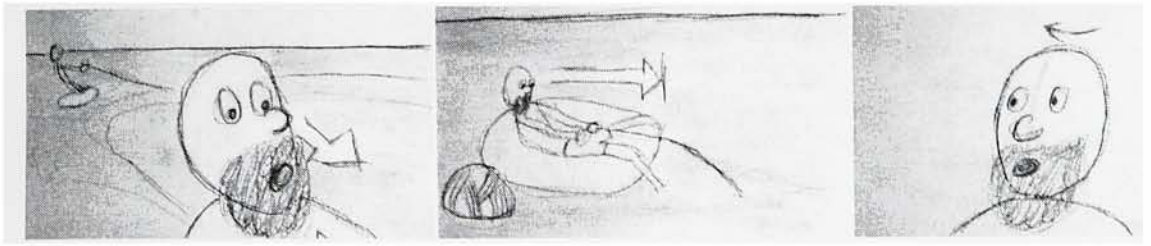


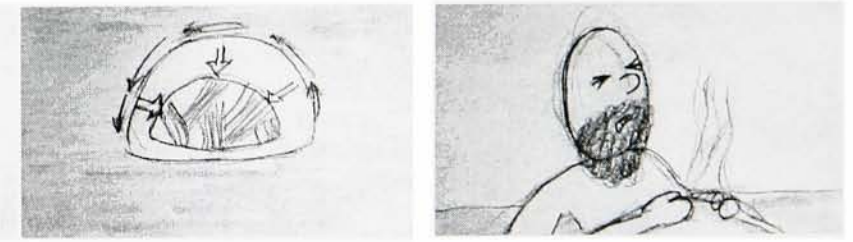


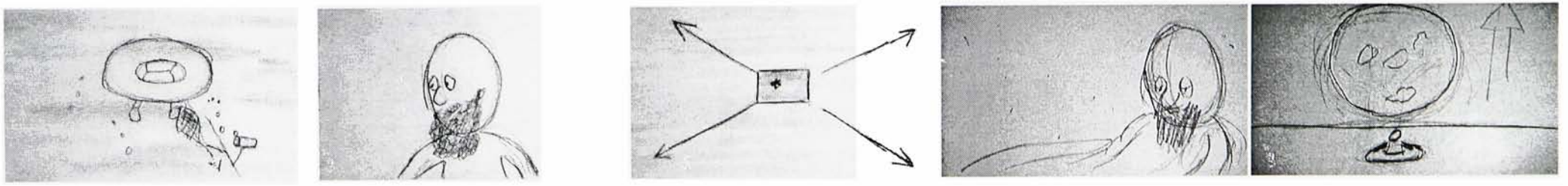










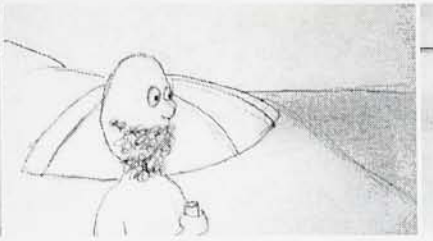
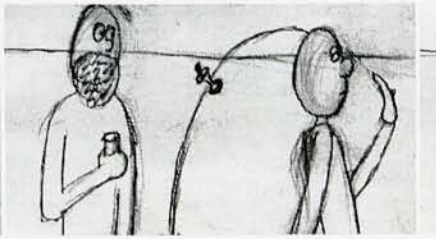
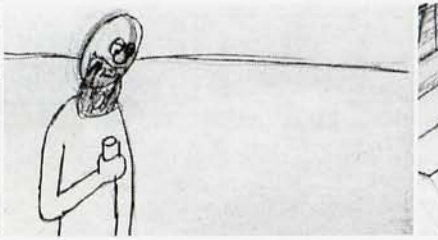
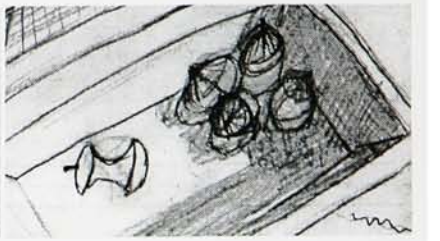
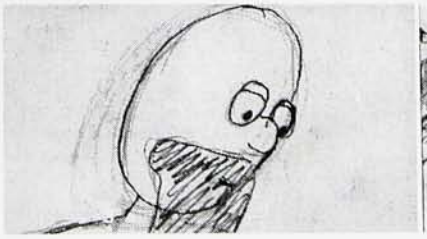
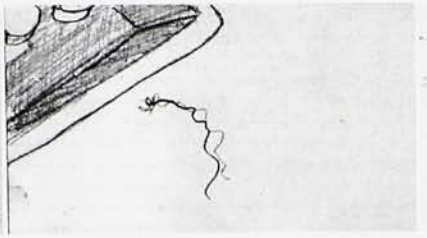
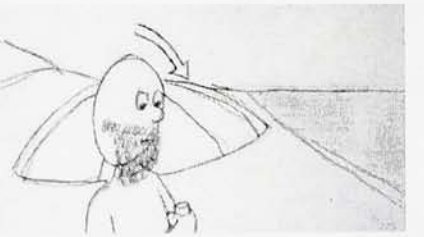
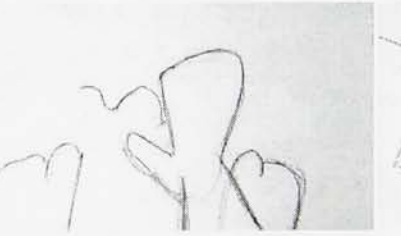
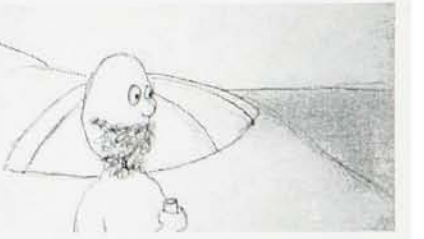
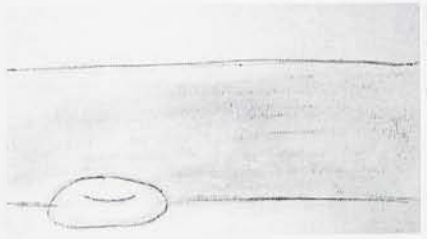
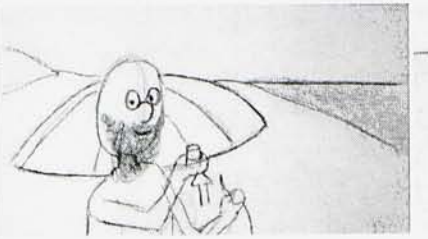
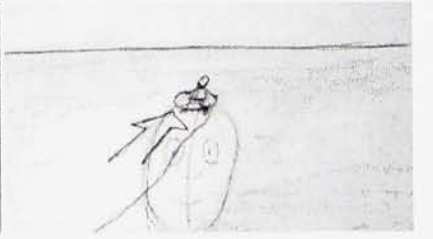





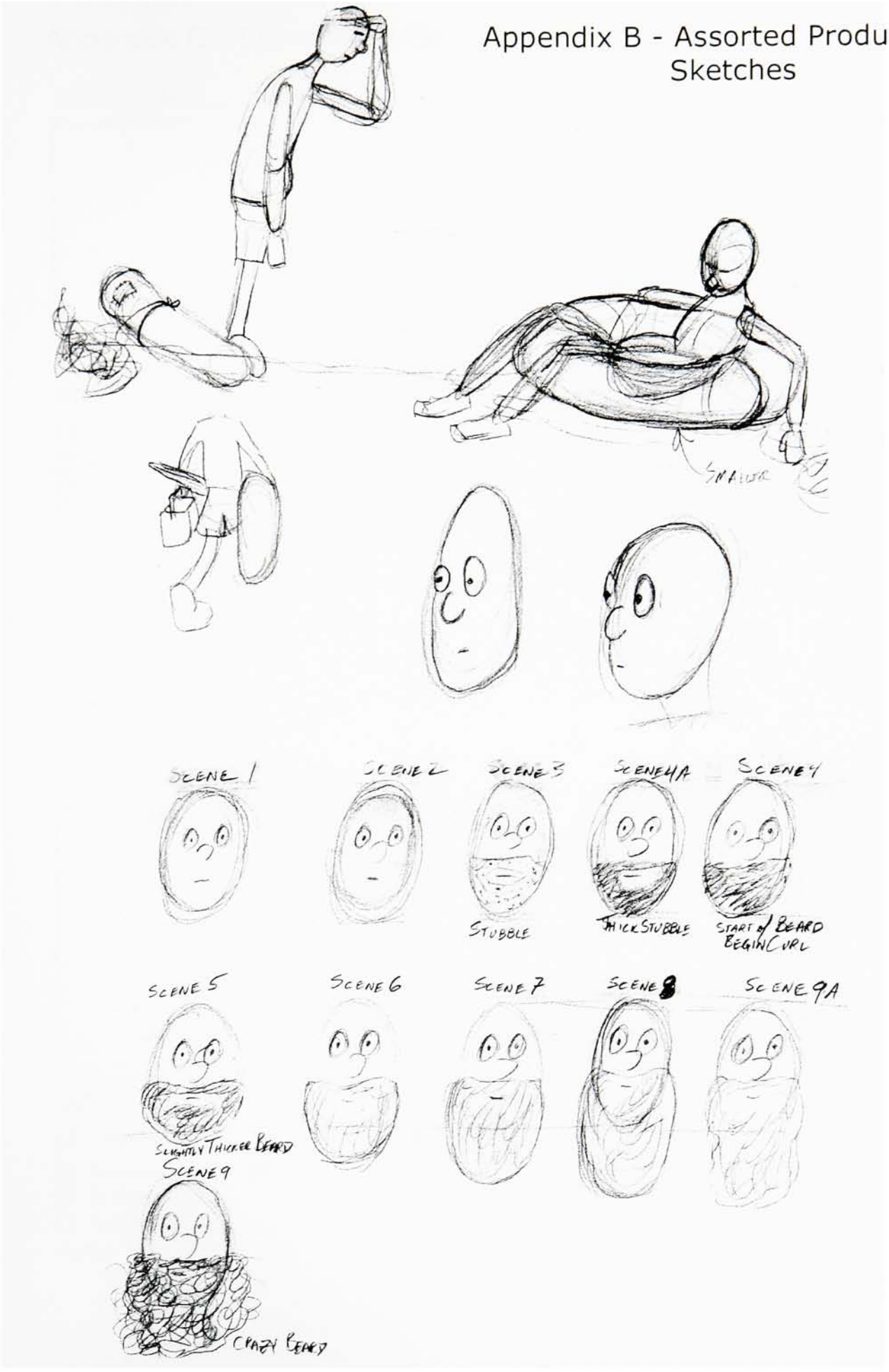







Appendix B - Assorted Production Sketches



Appendix C: Storyboard Checklist

Scene ___ Shot ___ Duration____ Finished ______

Start ___ End ____

☐ Animation
☐ Keyframe
☐ In Betweened
☐ Polished

☐ F/X
☐ Lighting

☐ 3D Rendered
☐ Composited
☐ Final Render
☐ Archived

Notes:

Scene ___ Shot ___ Duration____ Finished ______

Start ___ End ____

☐ Animation
☐ Keyframe
☐ In Betweened
☐ Polished

☐ F/X
☐ Lighting

☐ 3D Rendered
☐ Composited
☐ Final Render
☐ Archived

Notes:

Scene ___ Shot ___ Duration____ Finished ______

Start ___ End ____

☐ Animation
☐ Keyframe
☐ In Betweened
☐ Polished

☐ F/X
☐ Lighting

☐ 3D Rendered
☐ Composited
☐ Final Render
☐ Archived

Notes:

Scene ___ Shot ___ Duration____ Finished ______

Start ___ End ____

☐ Animation
☐ Keyframe
☐ In Betweened
☐ Polished

☐ F/X
☐ Lighting

☐ 3D Rendered
☐ Composited
☐ Final Render
☐ Archived

Notes:

Appendix D: Render Checklist

Scene: 1 Saturation Dif. (From Final): -85% Skin RGB: 184 137 132

Scene Description: First arrives at beach and finds string.
Slightly overcast day.

Shot	1	2	3	4	5	5a	6	7	8a	8b	9	10	11						
Scene Checlist:																			
Proper Shader Assigned																			
Background Shader																			
Glass turned on/off	0	0	0	0	0	0	0	0	0	0	0	1	1						
Ball on/off	0	0	0	0	0	0	0	0	0	0	0	0	0						
Layer Render																			
Sub D Layer ON																			
NurbsBodyPart Layer ON																			
Other Layers Off																			
Beard	0	0	0	0	0	0	0	0	0	0	0	0	0						
Cooler	1	0	0	0	0	0	1	0	0	0	1	0	0						

Scene: 2 Saturation Dif. (From Final): -60 Skin RGB: 190 130 120

Scene Description: Wakes up at sea. -70 180 125 107
Direct sun and no clouds.

	Slightly before noon.										Later afternoon.								
Shot	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Scene Checlist:																			
Proper Shader Assigned																			
Background Shader																			
Glass turned on/off	1	1	0	0	1	0	1	0	1	1	1	1	0	1	0	1	0	1	0
Ball on/off	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Layer Render																			
Sub D Layer ON																			
NurbsBodyPart Layer ON																			
Other Layers Off																			
Beard	0	0	0	0	0	0	0	0	0	0	Very light shadow on texture								

Appendix E: Typical Compositing Setup

Each layer (with the exception of the background layer) contains it's own alpha channel for the purpose of compositing. There are many different ways to approach compositing this particular problem, this just happens to be the solution that worked for me.

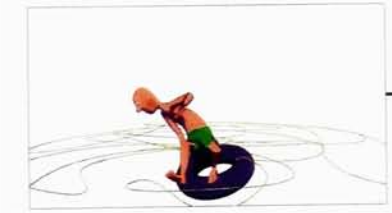
Color Image Render
Also contains the shadow information.

Alpha Channel Render
Note that it does not include the shadow information.

The alpha channel is used to cut out the shadows, leaving just the color.

Adjusting the Color Image's transparency creates the shadow layer.

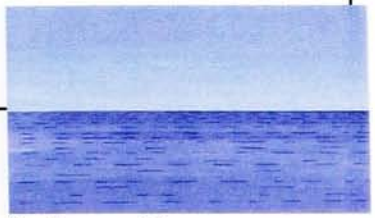
The color and alpha channel layers were rendered using Maya's Background shader in place of the ocean. This effectively hides or cuts out everything that would be behind it. It also provides a surface for shadows and reflections to be cast upon for compositing.



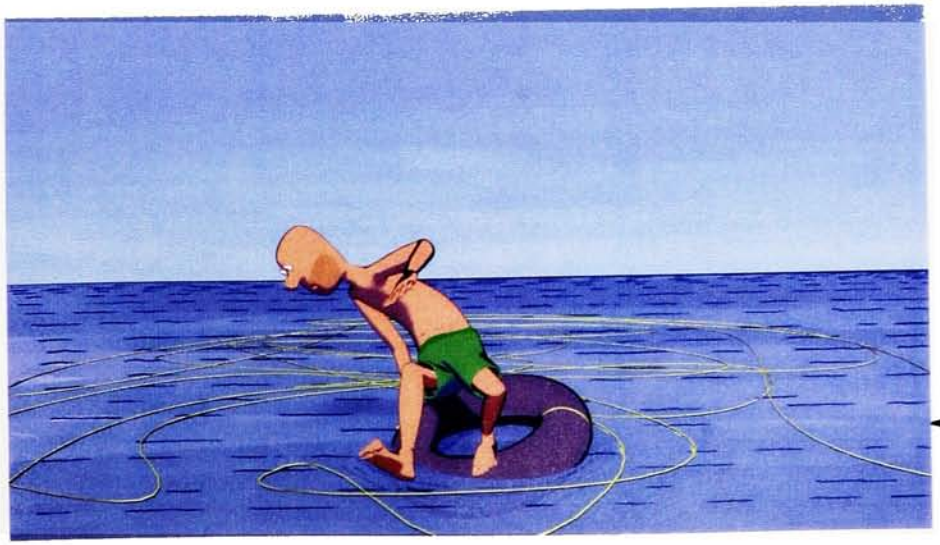
Underwater Render
This layer is rendered without the ocean or shadows. Notice that what would be underwater is also visible.

The Underwater layer after adjusting transparency allows the blue of the water to show.

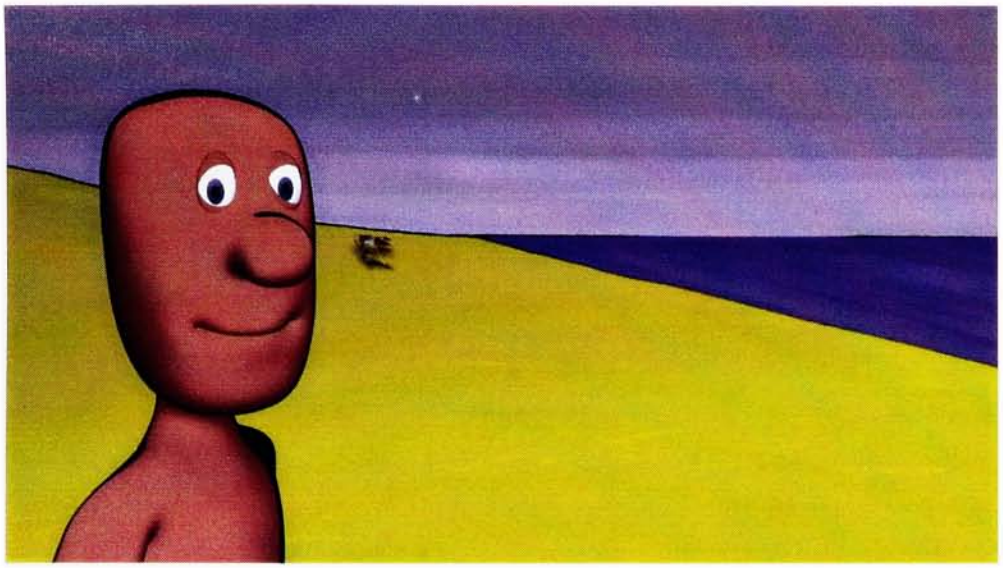
Hand drawn ripples add the effect of the inner tube interacting with the water.

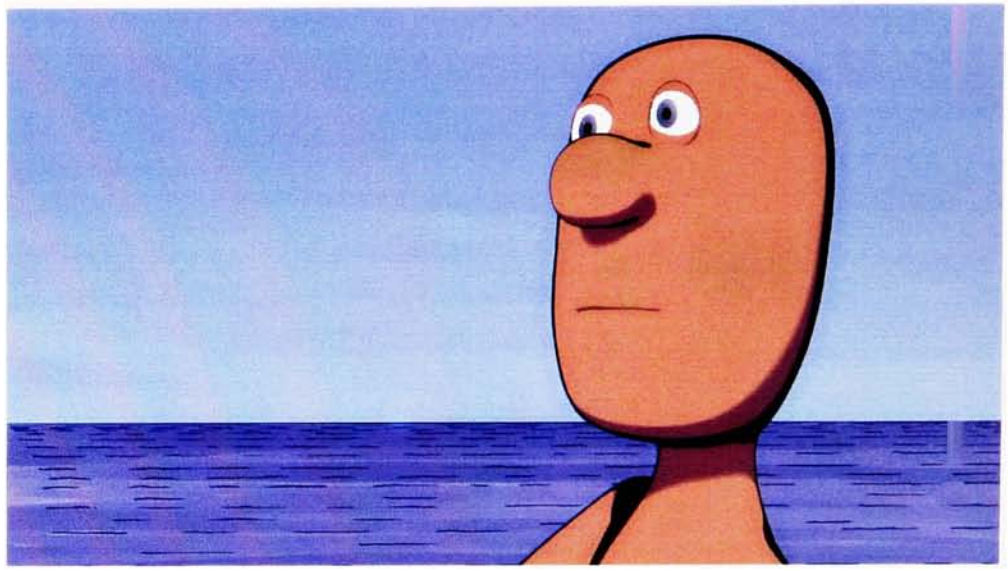


Background Layer



The Final Rendered Image





Appendix F: Selected Stills

G: Programs Used

Editing Software:

Avid Xpress DV 3.5

Adobe Premiere 6.5

Final Cut Pro 3

3D:

Maya 4.5

Texture and Background Creation:

Adobe Photoshop 7.0

Meta Creations Painter 6.0

Compositing:

Adobe After Effects 5.5

Audio:

Cool Edit Pro 1.2

H. Bibliography

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Graft, Lee, et al. Learning Maya: Character Rigging and Animation. Toronto: Alias|Wavefront, 2002.

McCloud, Scott. Understanding Comics: The Invisible Art. New York: Harper Collins Publishers, Inc, 1993.

Meyer, Trish & Chris. Creating Motion Graphics with After Effects. Berkeley: CMP Books, 2000.

Appendix I: Proposal

Stranded

By
Kurt W. Nellis

MFA Imaging Arts/ Computer Animation
SCHOOL OF FILM AND ANIMATION
ROCHESTER INSTITUTE OF TECHNOLOGY
ROCHESTER, NEW YORK
October, 2003

Stranded
A short animation by
Kurt W. Nellis

Log Line

Joe finds himself lost at sea with only his inner tube, his ingenuity and a huge ball of string.

Synopsis

Joe, an average man, walks down to a crowded beach, loaded up with beach going gear. He sets up his chair and umbrella and attempts to greet one of the many bathers on the beach, but is rudely ignored. Joe looks down and sees two ends of string sticking out of the sand. He bends down and pulls the ends out, as the wind ruffles his umbrella.

He approaches a twig off a very weathered tree. He looks at it carefully, tweaks it with his finger, and finally pulls with all of his might. It doesn't budge. He ties a piece of string to it and tests the strength of the knot. Joe, trusting the knot, wades out into the water with a bright red drink in one hand and an inner tube under the other arm. The inner tube is tied to the string. Joe carefully sits down in the inner tube, takes a sip of his drink and closes his eyes.

Joe is entirely passed out, snoring away. He wakes up when his head dips below the water line and he gets a snort of water. Sputtering, he sits up, nearly tipping over the tube. He's drifted completely out to sea. The string that was tied to shore drifts off to the horizon. Joe sighs and begins pulling it back in.

Joe continues to pull the string in. The tangled mass of string grows and grows. Finally, after an unbelievable amount of string has been pulled in, Joe gets to the end and finds that the twig, still tied to the string, is no longer connected to the tree. He scrambles to stand on the edge of his inner tube. He looks off in to the distance and shouts for anyone. No reply. He plops back down in the raft, defeated.

Time passes and Joe eventually gets bored. Sighing he takes one end of the string and begins to make things with it. First, he winds the string into a ball, then it's simple games like cat's cradle, and eventually, he makes a net to catch fish. When the rains come he uses his drinking glass to catch rain water and his paper umbrella to shelter himself with.

Now being aware that he can make things with his string he tries knitting a parasail with his string. This seems to be working fine as he

shoots across the surface of the sea, having a great time, until he realizes that something has gone wrong. The parasail has lifted him hundreds of feet into the air. As the parasail continues to pull him higher, the string tethering Joe to the sail frays and ultimately breaks plummeting him back to his raft and string.

Undaunted, Joe decides to try a new approach. He successfully lassos a fish. This time his attempt turns out to be even less effective as the fish zigs and zags, pulling Joe on a fantastic and fun adventure. Eventually the fish dives, wrenching the string from Joe's grasp. The ball of string begins unraveling at a startling rate. Joe tries with all his might to stop the string from rolling out, but in the end, the string, along with his drinking glass and net, lies at the bottom of the ocean. Joe is left with no means of survival. Joe passes out from dehydration and hunger.

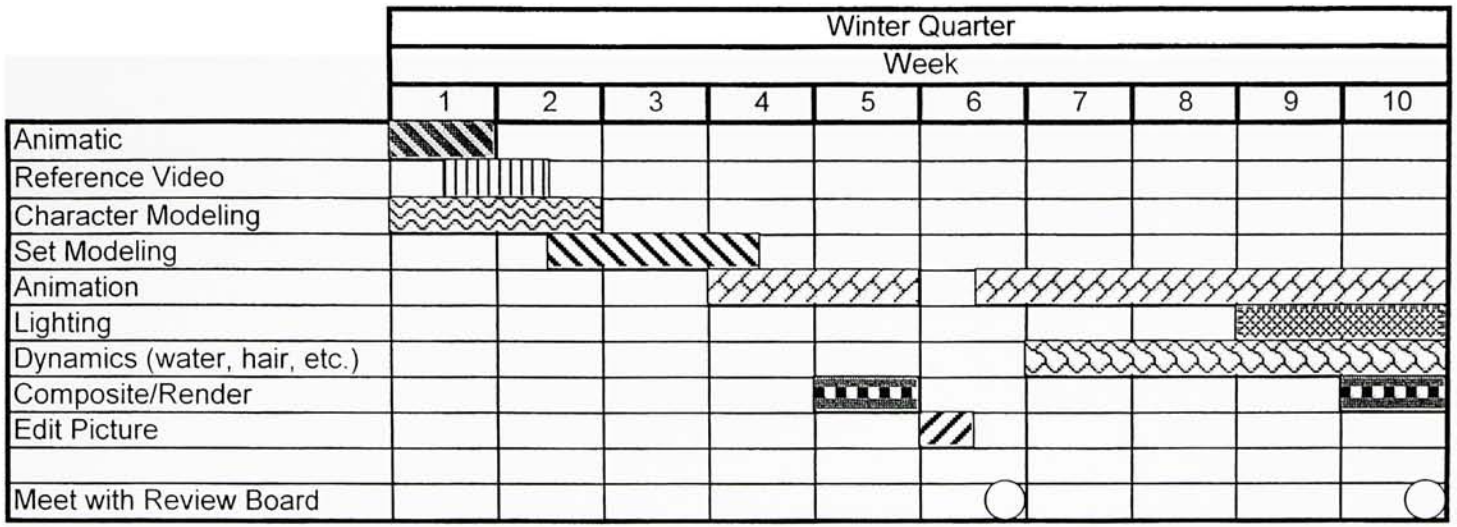
Joe wakes up to find himself having drifted ashore. He happens to be right were he started from so many months ago. It appears as though the same insensitive people are still going to this beach. Not a single person walking by even stops to look at Joe.

With every ounce of energy he has left, Joe pulls himself to his cooler. He opens it and pulls out another bright red drink and takes a sip. He looks to one of his neighbors, who just turns up the volume on his radio, obviously not wanting to talk. Joe looks back out to the sea and his inner tube gently floating on the water. He looks down and sees another piece of string sticking out of the sand.

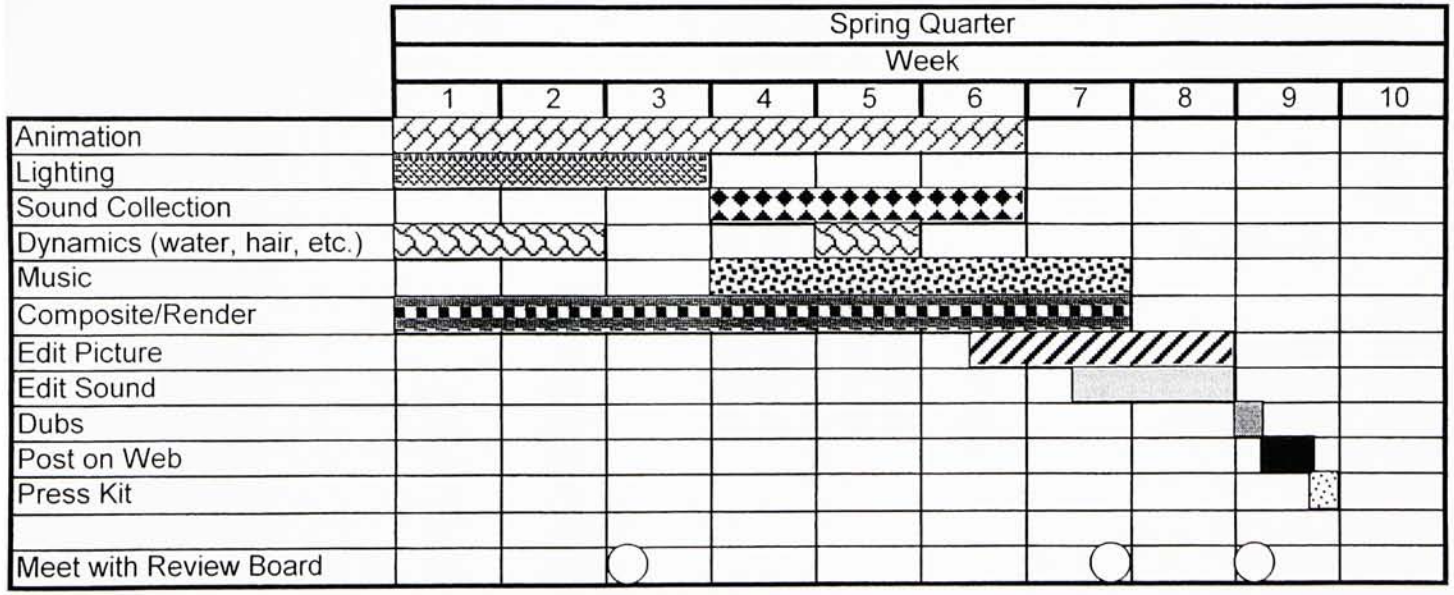
He bends down and pulls the string out. He looks at the sea, his string and then raises his glass to the neighbor next to him. Taking the string and his red drink he pushes back out to sea on his inner tube, smiling the whole way.

Throughout this comedy, Joe will gradually gain more color and personality, starting as a nearly featureless gray icon of a man and ending with more detail. From scene to scene, Joe's beard grows longer and longer, until it's a fantastic mass of hair on his face, and his color goes from a bland almost gray skin tone to that of a well tanned almost red complexion. The soundtrack will consist of ocean noises and music made with homemade instruments that use string. The film will run approximately 5 minutes and be in 16:9 aspect ratio, and will be completely done using 3D computer animation.

Stranded Timeline



Key Dates:
Animatic Completed
Winter, Week 1
Workbook Completed
Winter, Week 6
Rough Cut Completed
Spring, Week 7
Fine Cut Completed
Spring, Week9
Screen Finished Film
Spring, Week 9-10



Dates to meet with review board:
Winter, Week 6
Winter, Week 10
Spring, Week 3
Spring, Week 7
Spring, Week 9

Totals (in weeks):							
Animatic (Finishing PrePro)	1.5		Dynamics (water, hair, etc.)	7		Edit Sound	1.5
Modeling	3.5		Composite/Render	9		PostProduction (Dubs, Post on Web, etc.)	1
Animation	12.5		Sound and Music Collection	7			
Lighting	5		Edit Picture	3			

Budget

	Price	Quantity	Sub-Total	Total
Pre-Production				$20.00
Presentation Materials			$20.00	
Production				
Art Supplies			$30.00	$465.00
Media Transportation (Firewire Harddrive)			$250.00	
Tape Stock				
DV Cam	$20.00	4	$80.00	
Beta SP	$25.00	3	$75.00	
CD	$0.50	20	$10.00	
DVD	$5.00	4	$20.00	
Post Production				
Music			$500.00	$940.00
Festivals				
Press Kit	$5.00	10	$50.00	
Shipping (Entering)	$5.00	10	$50.00	
Shipping (Acceptance)	$8.00	5	$40.00	
Screener VHS	$5.00	10	$50.00	
Entry Fee	$25.00	10	$250.00	
			Total	$1,425.00
			Contingency 20%	$186.00
			Grand Total	$1,611.00

Distribution and Marketing

Stranded will be sent to a minimum of ten film festivals. This will enable the animation to get the exposure it will need to receive distribution. Upon winning awards, the animation has the opportunity to be included on a "Best of" reel distributed by the film festival.

The following is a partial list of festivals the animation intends to enter.

Telluride Film Festival	September 2003
Los Angeles International Short Film Festival	October 2003
Ottawa International Animation Festival	October 2003
New Hampshire Film Expo	October 2003
Sundance Film Festival	January 2004
Slamdance International Film Festival	January 2004

Written and Directed by Kurt W. Nellis

Producer	**Jill Nellis**
Music	**Andy Oyer**
Faculty Chair	**Malcolm Spaul**
Faculty Advisors	**Tereza Flaxman**
	Stephanie Maxwell

Special Thanks
Ruth and Dave Nellis
Andy Redout
Orde Stevanovski
Ander Bergstrom
Kevin LaMark
Bill Landers

Submitted in partial fulfillment of the requirements for the MFA degree in the school of film and animation, Rochester Institute of Technology

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Stranded