

How-To



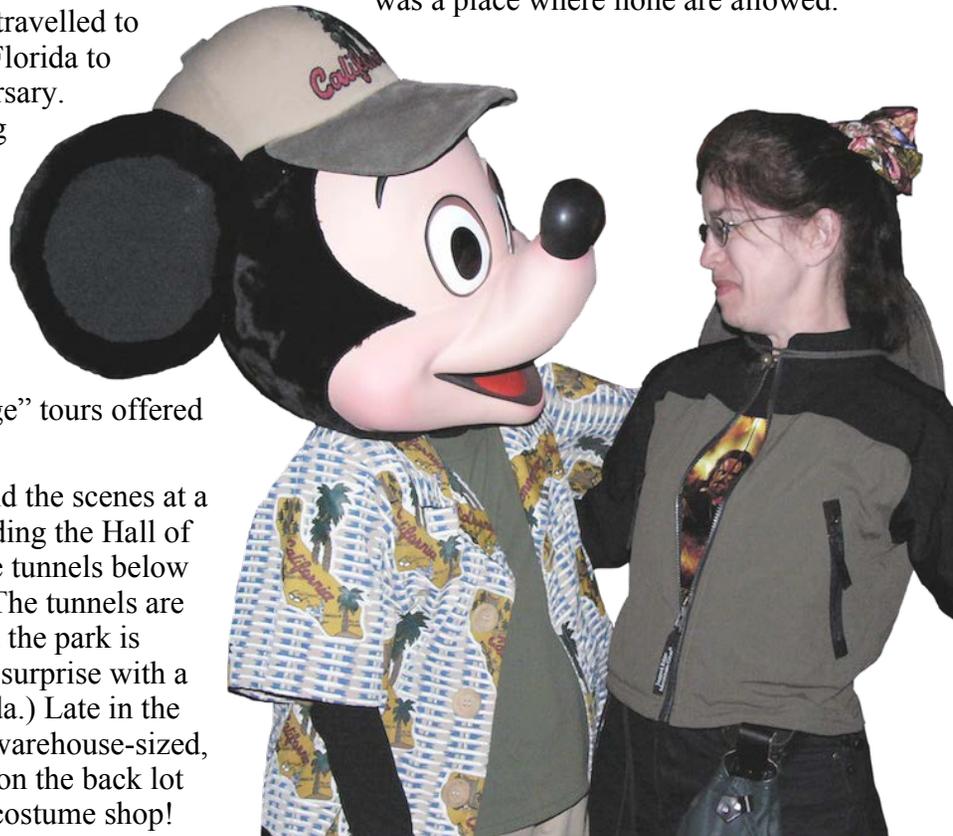
Make Mine Mickey! Philip Gust*

A long-time Disney fan describes how he reproduced the “Mickey Mouse” character head for a “Sorcerer’s Apprentice” masquerade entry with only basic tools, a steady hand, a quick eye– and some pixie dust!

It all started when we travelled to Disney World in Orlando, Florida to celebrate a wedding anniversary. My wife Kathe and I are big Disney fans and even honeymooned at Disneyland in Anaheim, California years earlier. Since we had visited Disney parks a number of times, we decided to go on one of the all-day “backstage” tours offered in Orlando as a change.

The tour took us behind the scenes at a number of attractions including the Hall of Presidents and even into the tunnels below Epcot and Disney World. (The tunnels are actually at ground level and the park is built up over that: not a big surprise with a sea level attraction in Florida.) Late in the day, we pulled up to some warehouse-sized, corrugated metal buildings on the back lot and found ourselves in the costume shop!

This is where the costumes used in the park are stored and repaired. Most of them are manufactured elsewhere. We went into one building and saw racks upon racks of costumes for the many of the characters in the park, and cast members wandering around trying out newly fitted costumes. As we stepped out, the three fairies from *Cinderella* waved as they walked by, and the “Mad Hatter” doffed his large top hat. I would loved to have taken photos, but this was a place where none are allowed.



Next, we entered a building where the heads for all the *atmosphere* or *furry* characters are stored. (They're called “furries” regardless of whether the character has fur.) Disney furries like “Mickey Mouse” have oversized heads and do not speak. *Face* characters like “Belle” are actors whose own face shows and who can talk with park guests. (A breakthrough occurred when “Mickey” was finally able to speak to guests at the 2011 D23 Expo.)

There, on metal shelves, were heads for the most popular furries in the park, as well as some that appear only in parades or on large floats. On the ends of the racks were charts that specified the height requirements for each of the characters, from the shortest to the tallest. It had never occurred to us that the actors for certain characters had to be exactly so tall, but it makes sense.

We discovered, for example, that the “Beast” actor had to be exactly 6' 2”. When we looked for which characters we could be, I discovered that I could portray, among others, “Geppetto.” Kathe was delighted that she's exactly the right height for her favorite character, “Mickey!” Our guide said that women are usually cast for this role because so few men meet the height requirement. We couldn't try on the heads, but we were able to walk right up to them on the shelves and study them to our heart's content.

Kathe Gust and her old pal “Micky Mouse” share a moment together on a visit to Disneyland.

Later, over dinner in the Moroccan restaurant at Epcot, we started talking about what a challenge it must be to costume the characters and especially the furies. As we talked, we began discussing ways to do it, and soon found ourselves hatching a plan for the next BayCon masquerade.

We had attended the previous [BayCon](#), the Silicon Valley regional sci-fi/fantasy convention. It was not only our first sci-fi/fantasy convention but also our first time entering a masquerade. It was a bit scary but fun, and we looked forward to doing it again.

We finally decided to tackle the “Sorcerer's Apprentice” sequence from *Fantasia*, with me as the wizard “Yensid” (Disney spelled backwards) and Kathe, of course, as “Mickey”. I would sculpt the head and create the various props and special effects, and Kathe would make the clothing and “Yensid's” wig and beard. It was a wildly ambitious project, even for costumers with much more experience, but we had the advantage of not knowing any better.

In this article, I'll focus on how I went about sculpting “Mickey's” head.

Patterning

The first step of the project was to create a pattern for “Mickey's” head and ensure that it is the same scale as the ones used in the parks. Luckily, I had a photo of Kathe and “Mickey” nose-to-nose as it were (previous page). Since I know that Kathe is the exact height, this gave me a starting point for scaling the pattern.

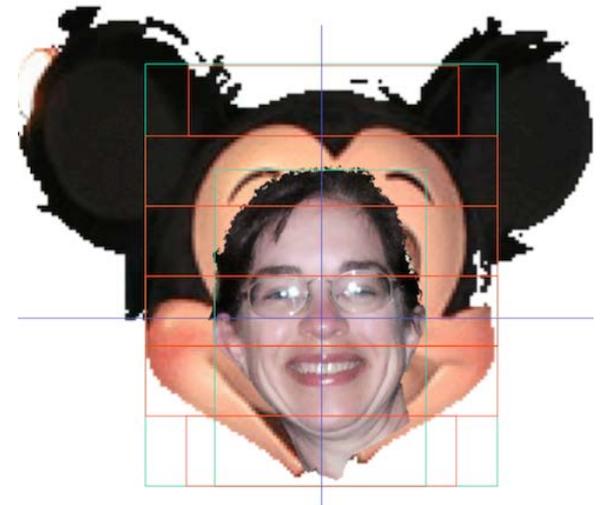
The shape of “Mickey's” head is complicated enough that trying to draw it would be difficult; everyone knows what “Mickey” looks like. Instead, I started with photos of the actual head, both front-on and in profile. There are many photos online to choose from and I selected one for the front view. The photo of “Mickey” with Kathe is very nearly in profile, so I decided to use it.

To create the patterns from the images, I used PowerPoint, the presentation package in the Microsoft Office suite. I was familiar with its operation and it had the basic capabilities I needed. I also used Microsoft PhotoEdit, a free photo editing application that came with Microsoft Office at the time to extract portions of images and create transparent backgrounds. (Note: PhotoEdit is no longer available but a number of other applications also have this capability.)



Using PhotoEdit, I extracted Kathe's and “Mickey's” heads in profile from the original image. I also extracted a their heads front-on from other images and scaled them to match the profiles. I created two slides: one with Kathe and “Mickey” in profile with Kathe's head overlaid on “Mickey's” and the other with the two heads front-on. I ensured that Kathe's and “Mickey's” eyes line up. I placed them on the pages so that I could flip between them to ensure that the scale and positions were correct; a sort of crude animation.

Now I could create full-size versions of the profile and front-on “Mickey” images by measuring Kathe's head and computing the scale factor. I carefully made measurements at multiple locations on her face to compare scale calculations derived from them and come up with a final value for the scale.



Next, I applied the same scale factor to the “Mickey” images. I created a presentation whose page size would accommodate the full-size head, copied the “Mickey” images onto two pages, and resized the images to the scale I computed earlier.

Now that I had full-size images of the head, I needed to print them to use as a guide while sculpting. This required “posterizing” the image so that pieces of it could be printed on regular sheets of paper and taped together to make the full-size image. Although PowerPoint does not support this, Adobe Acrobat Reader does, so I printed the pages to PDF files, and then used Acrobat Reader to print the PDF files. Once printed, I taped them together to make full-size profile and front-on views.

Sculpting

The next step was to sculpt a “Mickey” head that matches the ones in the park. It appeared from looking at them in the Disney World costume shop that the heads are a hollow molded plastic that fits over the actors head. The ones we saw had chin straps in them, and at least one appeared to have a head piece similar to the one inside a hard hat so that the weight didn't rest on the shoulders. Once molded, the head is painted and airbrushed, and any flocking or fur is then applied as appropriate.

Not having all of these technologies available, I decided instead to sculpt the head from foam. There are many kinds of foam, from the soft foam used to stuff cushions to the hard foam used for ice

chests. The kind of foam I wanted is a dense material that can be carved and holds its shape but is slightly compressible rather than rigid. It is a specialized foam that is normally difficult to find and can be very expensive.

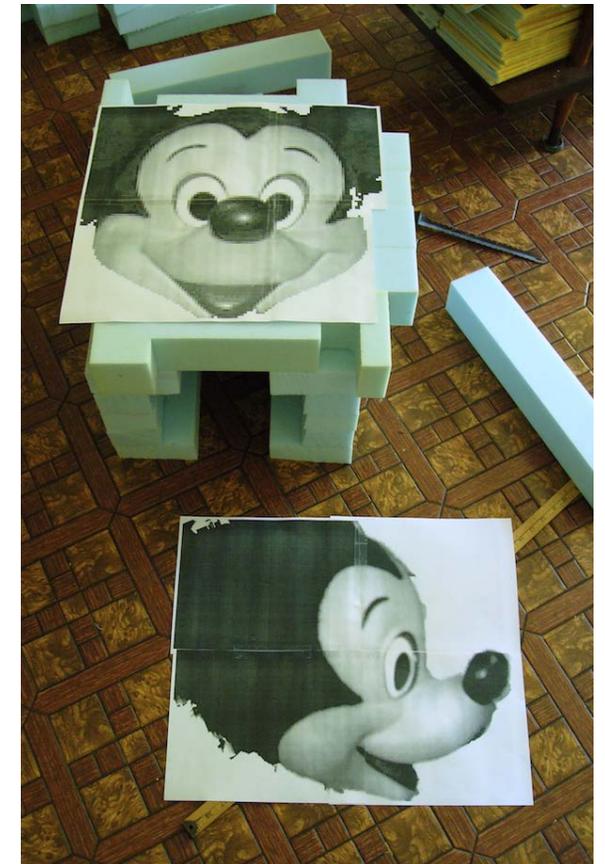
However, it is exactly the kind of foam that is often used inside packing boxes for computer workstations and servers, where the protection warrants the expense. The packing material is usually discarded once the computer is removed. It's not that difficult to find this material in areas like Silicon Valley, where workstations and servers are regularly purchased. However even outside of technology hubs, it is still sometimes available.

The best advice is to contact the shipping and receiving department of companies who purchase this kind of equipment, describe what you're looking for and how much you need, and let them know that you'll happily pick it up if they'll save it



for you. It can help to tell them what you'll be using it for. An interesting story sometimes builds a bit of good will. I luckily happened on a quantity of the material because a company in the industrial complex I worked at had just purchased computer equipment and thrown the foam into the dumpster shared by all the companies in the complex.

Once I had the foam, I cut and dry-fit it into a block that would accommodate the profile and front-on face in the printed images on the outside, with a cavity for the Mickey's head on the inside.



Next, I glued the pieces of the block together. I'm a big fan of spray adhesives, and especially Super 77 from 3M. It doesn't run, creates a good long-lasting bond, and sets up relatively quickly (~30 seconds – long enough to adjust or take things apart if necessary but short enough not to require clamping). This is especially important if you need to glue on additional pieces of foam without having to stop working for a long time.



Since I did not know what kind of foam I had, the only way to be sure it would work was to try it on some scraps. The wrong adhesive will either not hold once set, or melt the foam into a useless puddle. Luckily, Super 77 seemed to work quite well on whatever kind of foam it was. The pieces

went together with no problem and held tightly. Once the adhesive had cured, I transferred the front and side outlines to the block using felt marking pen.

Now it was time to carve, but first I needed something sharp that could carve the foam. After reading, trying, and discarding a number of suggestions, I finally found what I was looking for in the whatnot drawer in the kitchen: a serrated freezer and bread knife from Quikut, Inc. I'd had it for years and it's not even made anymore, but they can often still be found on eBay. They last forever.

The heavily serrated freezer edge worked great for rough shaping the foam, and the wavy bread cutting edge worked well for more precision cutting. I used this knife almost exclusively throughout the project.



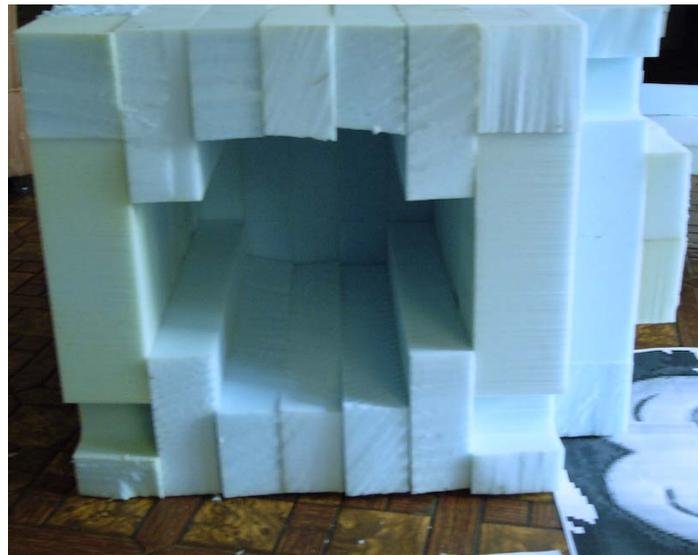
Before moving on to describing the actual carving, let me offer a few safety tips. This kind of foam sheds very fine particles, so it's important that you wear some kind of eye protection to keep particles drifting off your work from getting into your eyes. Your skin will also be covered with these particles, so also avoid touching your arms to your face. Finally, it's important to wear some kind of respiration protection. The kind of mask used to protect against dust works just fine. No need for more expensive and uncomfortable respirators for this size of particles.



How do you sculpt “Mickey Mouse?”

Start with a block of foam and slowly cut away everything that doesn't look like “Mickey Mouse.”

It's a variation of the old “carve an elephant” joke, except that it's really not a joke in this case. The important thing is to learn all the curves by heart *before* you carve. As I mentioned, “Mickey” has some deceptively difficult shapes and I ended up printing and keeping literally dozens of pictures of “Mickey” from many different angles on hand. They included photos of the character head from the park, statues, or whatever I needed to learn the shapes. It took me several weeks of just studying the shapes, and visiting Disney stores to study 3D renditions, before I began sculpting.



Once I was ready, I made the first cut along the outline of the side profile.



The next sculpting cuts were to begin shaping the head itself to follow the shape in the photos. I got around to the muzzle and mouth once the head began taking shape.

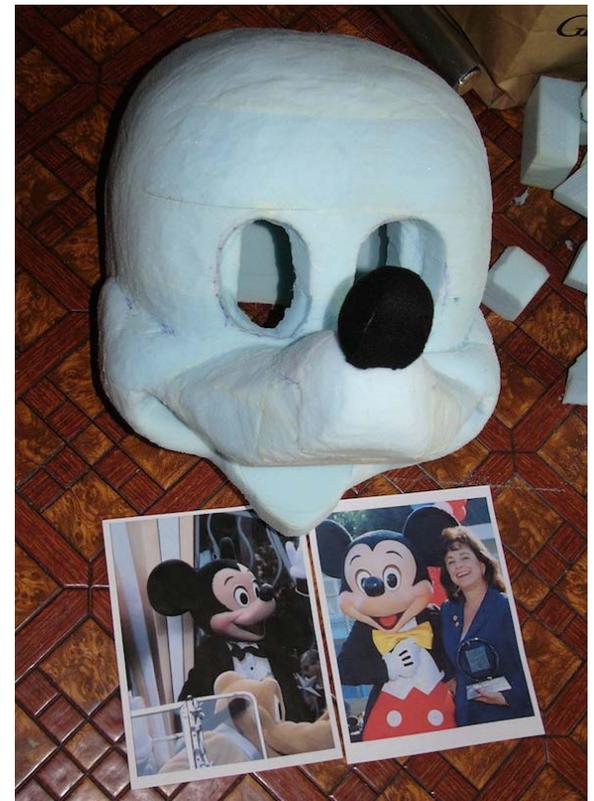


Placing the eyes and starting to shape the muzzle was the next step in the process. I'd place eye inserts during the finishing process that would give Kathe as good a field of view as possible from within the mask. I used a combination of the bread side of the knife and coarse grit (50-100) sandpaper for this part.



For the mouth, I rough cut and attached additional foam to the bottom and carved it to shape. Using a quick-setting adhesive like Super-77 made this process go much more quickly. Finally, I carved and shaped the nose from scraps of foam, but did not attach it until near the end, once the the head was covered

The final step was to use finer sandpaper (250-350) to finish-sand the foam and eliminate waviness from the sculpting process. At right are views of progress, along with a few of the reference photos.

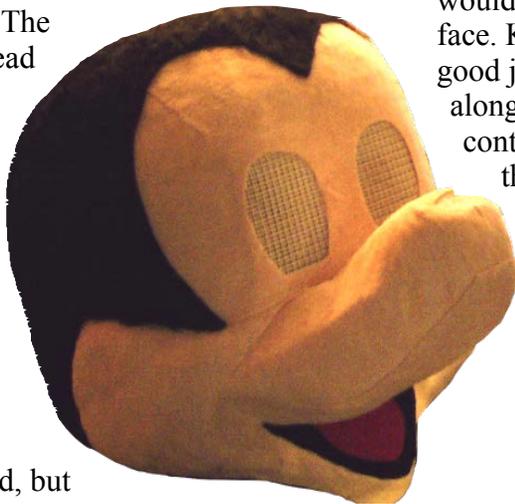


For the ears, I used styrofoam disks of the kind used for floral arrangements. There are a wide variety of sizes, and I selected one that best matched the ears in the scaled photos. I made the ears detachable for easier transport. I glued long threaded rods into the foam ears. The rods ran through long plastic tubing-lined holes in the head and were bolted inside with washers and wing nuts.

Finishing

The top part of the head used in the park is covered with a low-nap material, and we found a coarse felt that matched the images we have and our recollection of the finish pretty well. The felt was draped over the head and fit in place rather than first developing a muslin. The tricky part was cutting the fabric to allow it to conform to the shape of the head, and to match the front edge around the face. Kathe had a much better feel for this than I did and she took the lead on that part. The ears were covered in the same material.

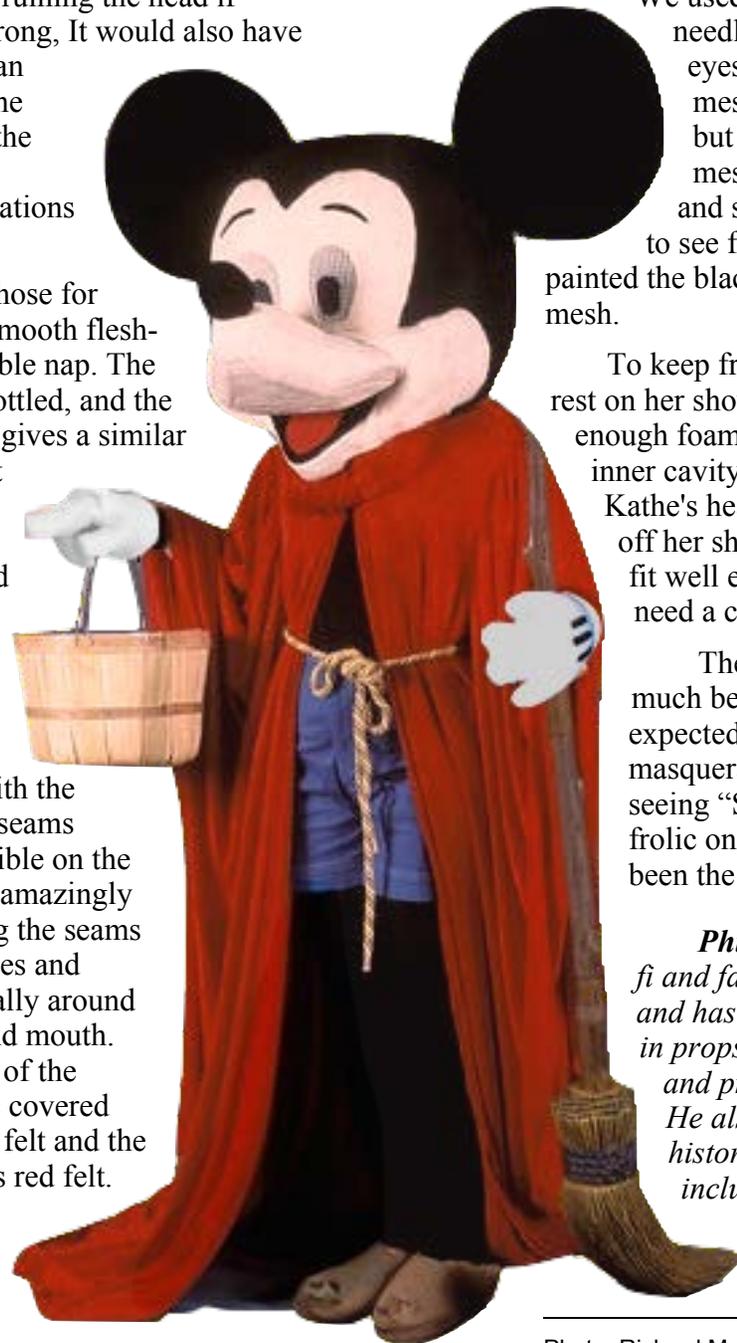
We also decided to use felt for the face itself. The face of the park head had a smooth painted finish, and I considered trying to seal the foam and paint it to match. However, we really didn't know what to seal it with. Something like Mod Podge might have worked, but



there was a risk of ruining the head if something went wrong. It would also have meant purchasing an airbrush to apply the paints and having the skills necessary to reproduce the gradations in the park mask.

The felt we chose for the face is a very smooth flesh-toned, with no visible nap. The color is slightly mottled, and the light playing off it gives a similar impression to what we saw on the park mask. Again, Kathe took the lead in draping and cutting the fabric to fit the contours of the face. This was a much trickier job than with the black felt because seams would be more visible on the face. Kathe did an amazingly good job of placing the seams along natural ridges and contours, especially around the muzzle and mouth.

The inside of the mouth was covered with black felt and the tongue was red felt. The eyebrows were also black felt.



We used two layers of white needlepoint mesh for the eyes. A single layer of mesh was too sparse, but with two layers the mesh was fine enough and still allowed Kathe to see fairly well. We painted the black irises onto the mesh.

To keep from having the mask rest on her shoulders, I added enough foam at the top of the inner cavity to cradle the top of Kathe's head and hold it just off her shoulders. The head fit well enough that it didn't need a chin strap.

The head came out much better than I ever expected, and the BayCon masquerade audience loved seeing "Sorcerer Mickey" frolic on stage— it must have been the pixie dust!

Philip Gust enjoys sci-fi and fantasy costuming, and has particular interests in props, special effects, and prosthetic makeup. He also costumes in historical periods, including Regency, Victorian, and early 20th C.

Photo: Richard Man, Imagecraft Studios.