The Art of Miniature Sculpting
the basics and techniques.

By Ramon Laan

‘Shae’ (Spyglass Miniatures)

Additional photo’s by courtesy of Steve Buddle of ‘Spyglass Miniatures’.

Welcome to this small treatise dealing with the sculpting of small-scale miniatures. This is a treatise based on a lecture I gave at Ropecon 2003 in Finland. At that time I was just beginning to understand how to actually go about sculpting a figure from scratch. It is not easy to get started, but I was lucky enough to have some excellent mentors who have helped me immensely by giving pointers, critiques and general tips on how to do it. Two I wish to mention specifically; foremost comes Steve Buddle from Spyglass miniatures (thanks for putting up with me the last couple of years Steve!) but second I wish to thank all contributors to the excellent Yahoo-groups community of 1listsculpting.
Please don't think I am a good sculptor or a seasoned one at that, far from it, I am just a dabbler. But as the road to creating a decent miniature is a long one paved with frustration and ignorance I set about collecting a few handy pointers for the lecture in Finland. The set-up was to introduce people there to the basics of miniature sculpting. After this there were some extremely fun workshops to put into practice what was shown in the lecture. It was very nice to do and I humbly think there were a lot of people who have learned a few things there. I will finish this introduction with words a lot of people at Ropecon might remember me saying once (errr, maybe twice… Alright! I said it hundreds of times but it is true!) 'practice, practice and practice again'!

As outlined below I will touch upon a few important stages in the process of miniature sculpting:

- Materials
- The concept
- The dollie/armature
- Bulking out
- Basic anatomy shaping, legs and feet
- The head and face
- The arms and hands
- Clothing
- Armor and weapons
- Details

Materials

Always know what you work with! That is very important for miniature sculpting. This counts for the sculpting medium as well as the sculpting tools.

First up are the sculpting media. There are basically two possible types of medium which are both very useful for sculpting: epoxy putties and polymer clays.

Epoxy putties find the most widespread use in miniature sculpting. Epoxy putties are two-component putties that need to be thoroughly mixed (kneaded) after which they will cure by themselves in often short time spans. Cured epoxy putty is very tough and can take a lot of punishment before it breaks, which makes it an excellent material for sculpting miniatures. Of all epoxy putties used in miniatures sculpting the most well known one is 'green-stuff' ('Kneadatite' by Polymeric syst. Inc.).

'green-stuff'

Green-stuff is often found in ribbons of two components, one blue and one yellow. Mixed together it becomes green.
Once a fresh batch of green-stuff is mixed up the working time is quite limited, so keep this in mind and do not make too much at once. I have often worked on a small piece of detail which just wouldn't cooperate during which time the rest of the batch was nicely cured when I finally came round to it. So make small amounts, you can always mix up more! Basically you have somewhere between half an hour and over one hours to work the green-stuff in before it sets. After a few hours it is fully set. Curing times depends on the ratio of the two components used when mixing it up. Most sculptors use just a little more yellow than blue. Also the temperature is important. The hotter the faster the curing. A lot of sculptors use this to their advantage by making a putty oven out of a light bulb mounted inside a metal jar with a lid. Switching on the lamp heats the inside and when fresh putty is put inside it will take mere minutes to cure. Be careful not to use too high temperatures to let green-stuff cure even faster, I try to keep it under 60 ^{o}C as I found that higher temperatures harm the putty from bubbles on the inside to actually burned!
Also be warned that green-stuff never sets rock-hard. It will, in fully cured state, be somewhat flexible.

Later on I will come back to the properties of uncured green-stuff and explain why it can drive one crazy trying to work with it.
Other epoxy putties can be found, and they all have different finishes. Green-stuff cures flexible and 'rubbery ', but sometimes you want a rock-hard finish. Some hard-curing putties are: 'Magic Sculpt', 'Milliput' and one of my favorites: 'Brown-stuff'.

Polymer clays are totally different from epoxy putties. To cure they need to be 'baked' in the oven (see clay-package for directions) and when uncured the working time is practically indefinite. Handy on one hand, you don't have to hurry sculpting, but also it is very easy to accidentally obliterate that piece of detail you finally managed to get right by a carelessly placed thumb whilst working on a different piece of the figure. Polymer clays are single part, but it is necessary to knead the clay well before use. Basically there are two large brands of polymer clays for sale that find much use. In the States they use 'Super Sculpey' and in Europe we use 'FIMO'. This because Super Sculpey is hard to find in most European countries (I honestly don't know why, and I don't know if FIMO is readily available in the States either).

FIMO

I use FIMO. There are several types of FIMO of which I use both 'classic' and 'soft' (see photo).
FIMO makes for an excellent practice material for getting the hang of small detail and basic shapes. It never cures until baked and you can just use it over and over again if you're not happy. And it generally is much cheaper than epoxy putties. A lot of the illustrations in this article are made in FIMO.
When FIMO is baked it makes a pretty hard finish but it is nowhere as tough and durable as epoxy putties. If you are planning to use your sculpt or conversion in games and they will be handled often you are better of using a polymer clay. But for practice and display miniatures polymer clays are very useful.

I will now talk some more on the properties of uncured green-stuff and unbaked FIMO, and here also are introduced the sculpting tools.

Uncured green-stuff is very sticky, almost chewing-gum like. It has a somewhat elastic property which seasoned sculptors use to their advantage. When unprepared or just new to green-stuff you will start to think that green stuff is just unusable, as it will stick to your tools, your fingers, anywhere but where it is supposed to stick. There is an answer. Lubrication! When you are new to green-stuff try to take your sculpting tool and put a tiny amount of Vaseline or some other oily substance on it. Then try to work the putty and be amazed how you can easily smooth the putty to a shiny finish and how it will never stick to your sculpting tool. I started out with Vaseline. However, there are some downsides to it. It hangs around. Try putting a piece of uncured putty over a cured piece of putty smoothed with Vaseline. It will not stick, and especially if you were lavish with the amount of Vaseline it will eventually become a mess. A simple solution may be to wash the miniature with lukewarm, soapy water when the putty is fully cured. However, I, and many other sculptors prefer not to use 'oily' lubrication. A lot of professional sculptors out there use water. It evaporates and leaves (almost) no residues. The mini stays clean and washing is not necessary. It is more difficult to learn how to smooth putty with water as lubricant, but in the long run it will give you better putty-control. There is another lubricant that finds some use, and I admit I am one of the users myself. Saliva. Be careful never to let your mouth come into contact with epoxy putties, even when they are non-toxic. This means ever to put your tool in your mouth. But saliva is somewhat in between Vaseline and water in its properties. You should try for yourself what suits you best as lubricant, but for the very first beginners I would suggest to use Vaseline as it is sooooo much easier to get a smooth finish on the putty.
Polymer clays are very different. They need no lubrication at all and working it is easy. Sometimes a bit too easy as you often need a very light touch with the smaller detail. Unbaked FIMO is almost waxy in its feel, and also in its working. It has no elasticity at all.

So now we know a bit more about the medium in which we can sculpt our miniatures it is time to look at our tools, let me tell you that in sculpting a 30 mm figure (in which the scale of an average human is 3 cm from foot soles to top of the head, more on scales later) you will need some finely tipped sculpting tools indeed.

So finding tools with good shapes is important, the next photo shows a few of my favorite sculpting tools.

Three if these are worth mentioning. The top one is a so called color-shaper or clay-shaper. These are like brushes, but they have a smooth rubber tip. They are excellent indeed, I use these most after the Wax-5. The Wax-5 is the second tool from the top. Sometimes called the Rolls-Royce of mini-sculpting tools it is a deserved title. A very useful blade and a great 'hook' on the end. The bottom two tools are actually not meant for sculpting at all. They are Pergamano tools. They are small smooth metal balls on pins but make excellent sculpting tools for some jobs.

But what is foremost important in your tools is their surface. You need a clean, smooth surface to your tool. For example in the next picture you will see two tools, used to make a clean and smooth finish in one swipe of the tool in a blob of FIMO. The top tool sports a very smooth and clean blade while the bottom tool is not polished (it has some rough metal edges) and there is also some old cured putty on the tool. The difference says enough really.

Keep your tools smooth and clean!

Other sources for tools are sets of dental tools, manicure sets (please tell your mom/wife dad/husband before-hand….), knitting and sowing needles (same comments apply) and (blunted or not) Exacto knives or scalpels. In fact, the sky is the limit, it basically needs to be smooth and have a useful shape!

Well! These are some basic materials for sculpting miniatures. So now you were thinking to get stuck in? You could, but I suggest you do read though the following sections about 'ergonomics' and 'the concept' first.

It is extremely important to know what you are doing if you are planning to spend some time sculpting. When I started out I felt positively sick after a few hours of work, my neck was sore and a headache pounded my skull. So what went wrong? Everything! My pose was wrong, I sat hunched over the mini. This impedes steady breathing, strains your back and neck and is just plain wrong. Especially steady breathing is very important. Watch out for this and take regular breaks. Maybe I am coming over as too worried? I used to think that a little time in such a pose would be ok, but I always found myself in this pose for hours on end. Sculpting makes me forget the time. The headache came form bad lighting and squinting. Always be sure you have a well lit area, this will prevent you from actually destroying your eyes. An option is also to use a jewelers optivisor. You can imagine how it feels to sculpt an eyelid on a 30 mm figure? It makes you cross-eyed for sure. I am still pretty stubborn I admit, I do not have an optivisor myself.

But do not get too comfortable with your putty, lubricant and smooth tools in your well-lit and comfortable sculpting spot yet…… you do not know yet what you are going to sculpt do you?

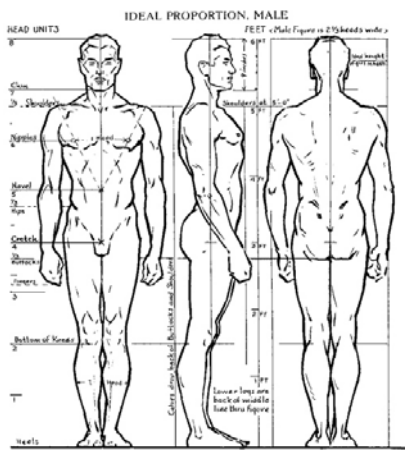
The Concept.

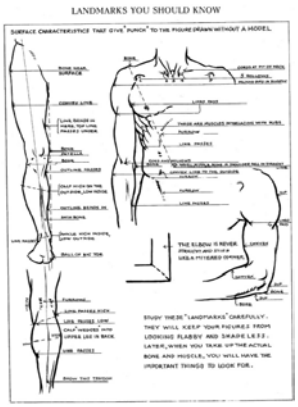
What makes a miniature a good miniature? A flawless sculpt? It helps, but more important is the concept of the miniature. A popular, well designed miniature begins with the concept. Maybe you are gifted and you can draw you own design of a miniature before trying to translate it from 2D to 3D. Maybe you are lucky enough to have a very good imagination and 'see' the concept before you and work from that. That is generally how sculptors work. They either make it up beforehand and work out the mini in their mind (takes a lot of experience I'll tell you) or they work from concept art. I seldom see sculptors 'making it up as they go along', as this will often result in an incoherent figure. So be careful to plan your mini beforehand. Use sketches to work out certain aspects of the mini on paper. Trust me when I say I cannot for the life of me draw anything cool on paper, still I try to sketch a few parts of the concept. It helps me to see if poses work. It helps me to measure out what size body parts need to be.
In all, there are pros and cons to both approaches and it depends what you can and are willing to do on this part.

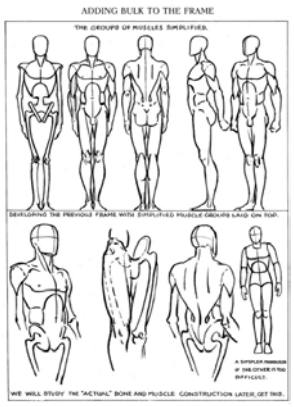
One of the best things you can do and always should do is to get reference material! There is sooooo much artwork out there from which to draw inspiration….. Search the web, browse

bookstores and lay your hands on anything you can. As long as you are careful not to mindlessly use copyrighted artwork or blatantly rip off the artists work you can go a long way for inspiration.

So what makes for a strong conceptual miniature? That would be anatomy! Although a miniature is small and although you do not see every bit of anatomy on the miniature (you certainly don't have to sculpt every tiny bit of anatomy on a 30 mm figure) it certainly shows very clearly if the basic anatomy is wrong. Especially proportions are important. There are rules on proportions of human anatomy as every artist worth his/her salt knows. It might seem weird, but even fantasy figures like Orcs or monsters like Ogres follow a lot of these rules. Again here is an excellent excuse to surf the web again. Find all books you can on anatomy (drawing!!). These examples were found on the web and are from a famous artist name Loomis.

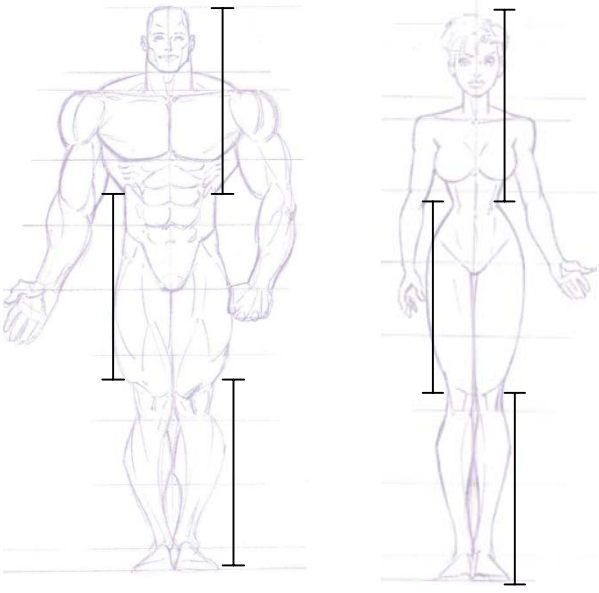






These are just examples of anatomical reference material but it gives you an idea of what to look for. Be sure to also know how the skeleton basically works at the joins, this gives better insight in poses and movement. Also check out whatever miniature you have at home to see how the sculptor went about designing the anatomy.

One handy rule to know whilst sculpting is the rule of thirds.



The rule of thirds is basically illustrated above and says that the distances between the top of the head to the underside of the ribcage, the underside of the ribcage to the top of the knees and the top of the knees to the foot soles are all equal (1 cm in a 30 mm scale figure). There is only a small difference between males and females in the rule of thirds: females have somewhat longer legs and the groin is a bit higher than with males.

When sculpting a 30 mm scale figure you have to keep in mind, like I hinted earlier, that you do not have to recreate every muscle on the figure. Some shapes need exaggeration and others need to be omitted. Look at existing 30 mm figures to see how their creators pulled this off. This said, there is an awful lot of difference between sculptors and what they like to see in their miniatures so a large part in deciding how anatomically correct a miniature you want is very personal.

For me personally I do like a bit cartoonesque quality to my minis. I do tend to like comics (my favorites are the French 'the back moon chronicles' and several Marvel heroes….). You would be surprised to see how much use a comic is in sculpting. The comic artists also have to decide which parts of anatomy to exaggerate and which to omit themselves, so it makes fine reference material. Try to find books on how to draw comic figures (action heroes) and you'll have a treasure trove of information.

Now, finally, after also having made up this great concepts which took you hours of painstaking drawing you are ready to break out your sculpting tools and putty! Or, maybe not……

The Armature/Dollie.

Before you can actually start sculpting you need two things. The first is simple. You need something to mount the soon-to-be-miniature on. Lots of sculptor use a simple cork and I too find it hugely usable. You can hold the cork and twist it round to tweak the miniature from all sides. You actually do not have to touch the miniature at all which is what we wanted in the first place.
A real human has a skeleton for a reason. If we didn't we would be a sack of fluids and tissue with great difficulties of moving about. It is the skeleton which gives our bodies their foundation. The same counts for a miniature. Although the final cured putty is firm nugh maybe it is certainly too floppy uncured t support a whole miniature. Thus the miniature needs a strong solid skeleton as well. There are two ways to go about this. Make a wire frame or use a dollie.

The wire frame.

The dollie.

As can be seen in the pictures a wire frame is nothing else than a piece of wire over which the mini will be sculpted. The other photos shows a dollie. These are simple shapes in which the basic shapes and proportions are pre-made already, leaving the detailing up to you. An advantage of the dollie is time, it simple saves time to start at this point. However, I dislike the use of dollies nowadays because the dollies often restrict artistic freedom. It has a pose which can only be tweaked a little bit. He wire frame gives total freedom, but you need to bulk out the basic shapes and anatomy first.
The inverted Y shape of the wire is not mandatory, you can make an entire skeleton from wire if you prefer. Lots of sculptors solder their dollies carefully form wires and make absolutely sure that all proportions are correct. In this case the inverted Y shape will become the miniatures' legs and torso first. One advantage of leaving off the arms is that the wire of the arms is not in the way when working on the torso. If you use an inverted Y armature be sure to leave the wire making the torso a bit shorter as the torso should be. This helps when you will attach a separately sculpted head on a wire to the torso and you need to drill a hole in the top of the torso. The wire will not be in the way.

Now! Grab your putty and tools for it is finally time to push some putty!

Bulking out the armature.

This is the phase where you begin to literally flesh out your miniature. Taking great care to mind anatomical proportions you will begin by adding small amounts of putty to the wire. If you do not manage to at once fill out the entire shape don't worry, use layers of putty and let each layer of putty cure before putting on the next.

At this stage it is important to know when to finish bulking out. This depends on the concept of the miniature. Wherever the miniature has bare skin or tight fitting clothes on the legs or the torso you need to be careful to smoothly finish the surface towards as correct an anatomically precision as you wish/can. If the mini will wear loose clothes or bulky armor then you an stop at approximately the right proportions and anatomy and certainly do not have to produce flawlessly sooth surfaces. The picture below shows an example of half a bulked out figure.

Certainly here, but already at the planning and armature stage you should be aware that there are no straight bones in our bodies. Look at the picture of the rule of thirds. The lower legs are quite bent, as are the upper legs. In 30 mm figures this generally needs to be shown as well. But most importantly you must not forget the curvature of he spine. When backs are sculpted in a straight line from the bum to the shoulders the miniature will look very weird.

All in all it is the bulking out stage and the creation of the anatomy and proportions that will be one of the most critical stages in sculpting a miniature, and not as you might think the details. It is at this stage that the miniature will come to life or will stay dead!

But do not be afraid, it is also one of the hardest things for a sculptor, and practice is again the answer.

It is very tempting to start adding detail when the basic anatomy is there, but keep this to a minimum. It is better to get the smooth finish of the surface right at this stage.

Basic Anatomy sculpting.

So how do we get a smooth finish and correct anatomy. And how do you seamlessly blend uncured putty into (onto) cured putty? Well, this all comes down to putty-control. The more you play around with putty the more you will get the hang of how to work it. I have said it before but will summarize here what you must do in order to get a smooth finish: lubricate your sculpting tools. Work over grease free and clean cured putty surfaces. Use putty sparingly and be certain that you make each layer quite smooth (minimize the amount of bumps in the surface is you work in layers). What certainly helps is to have very fresh putty. Try to acquire putty from a source which hasn't lain on the shelves for a long time already. Here's a tip to keep it fresh: putty can be frozen, so keep it in your fridge. This works great with green-stuff, you can simply snap of a frozen piece of ribbon and put the rest back in the fridge. It will keep fresh much, much longer.

Another nice tip for creating smooth surfaces is either sanding or scraping. Sanding needs a hard-curing putty and it therefore cannot be done with green-stuff. Scraping does work. Take a very sharp knife and scrape the top layer away to a smooth finish.

<u>The legs and feet</u>

So, it is time to actually get the right shapes and finishes at this stage. You still do not have to bother with detail like pouches, buckles and such, but it is very useful to get your 'canvass' right, and by that I mean that the basic shapes will be done now. The following example shows how Steve Buddle went about sculpting the basic shapes of Shae at her torso and her legs.

Basic shaping of Shae.

Notice how Steve's miniature has no straight lines in it, it is all curvature. Steve used brown-stuff for bulking out and basic shaping.
Here are some helpful proportions for a 30 mm female: feet to knees is 10 mm and feet to groin is 15 mm.

This example wears shoes. Shoes and boots are relatively simple to sculpt, especially when you compare it to bare feet. Take a good hard look at real feet and all the anatomy reference material you can find. I would probably go about sculpting feet in 3 stages. 1st I would make the basic shape of the foot and sculpt rough versions of the four little toes. 2nd I would sculpt a basic big toe in when the 1st stage has cured. After curing again I would continue with detailing the foot, sculpt the final shapes (including nails on the toes) and make the ankles.

The torso.

Take a look at the photo again and see how Steve just made a basic torso with a smooth finish. The final model (see title page) wears tight fitting clothes on her torso, so Steve made sure the finish was smooth and rightly proportioned.
Some handy proportions for a 30 mm miniature again: Groin to shoulders = 10 mm and from feet to shoulders = 25 mm.

When the miniature is planned to show bare flesh it is a good idea to work in some basic musculature. Especially for your archetype bare-breasted barbarian hero it is very important to get the muscles right.

This might be a very good time to introduce the concept of 'size-creep'. It means that as you work on your miniature it often happens that the scale of the miniature increases without you noticing. For example, I once started to sculpt a mini in much the same manner as here. The feet and legs were quite alright and true to a 30 mm figure. The torso turned out to be more like for a 32 mm figure and the head and arms (which we will come to later) even more like 35 mm. Needless to say the proportions were way off and the miniature was plain silly. I do have to warn about the most size-creep sensitive part of anatomy in miniatures. You might have guessed it already, it is exclusive to female miniatures. Female breast are almost always sculpted too large.

Size-creep can be combated by regular measuring of proportions and also by using small amounts of putty at once.

So now we have a nice and solid foundation for our miniature. It needs a head you say? Right your are!

Sculpting the head and face.

Sculpting of the head is important for several reasons. It gives the miniature character and expression, it is a focal point of almost all miniatures and it is one of the hardest and most daunting things to do.

There is no ultimate way to sculpt a head and a face, I bet all sculptors do it slightly different. So, what I will tell you next and also try to show you in the photos of the different stages is

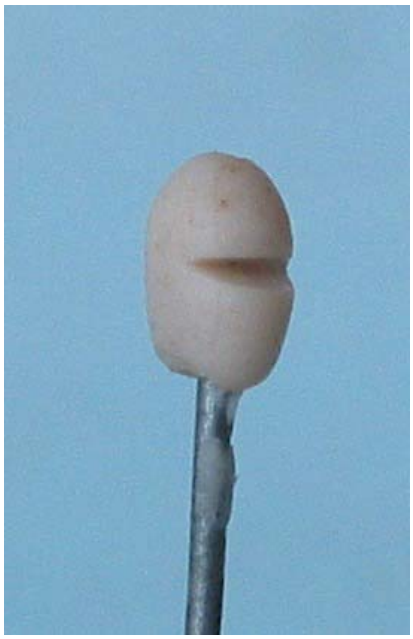
just one way. If I remember correctly it was Stefan Niehuis who sculpts for Assassin miniatures who showed me once. Thanks for that Stefan!.

Generally though, most sculptors make the head separate from the miniature. This has as advantage that the sculptor has all freedom of maneuvering, but size-creep is never far away!

I also think most sculptors begin forming of the head on a small piece of cured putty (ball or egg shaped). Make this a very small piece, mind, you need just a basis to work over.

The following range of photos are a poor and quick attempt to show the process only. A very good idea is to, like me, take out your polymer clay and practice this technique for a while.

In the first photo I have already took a small piece of putty on a wire, put it in a cork and covered the putty with FIMO clay for this practice session. The shape is egg-like as you can see.



Next I took a sharp-bladed tool and ‘cut’ in an eye slit. Simple as that.

Then I took a small ‘sausage’ of FIMO and stuck it in the middle of the eye slit. I then bent it all the way to somewhat under the ‘chin’.

Then I again took my sharp bladed tool and cut the sausage in three parts whilst attached to the head. The upper will be the nose, the middle will be the upper lip and the lower part will form the chin. See the picture to see the proportions of these parts.

This is a fun part. Look at the photo above to see how I tried to shape the upper blob into a nose, the middle into an upper lip and he lower into a chin. I also added a lower lip at this stage. If this would be putty I would need to know if the face would have an expression that would need the brows to be different from now. If so I would need to tweak the brows. But then this is a good stage to let the putty cure. With FIMO this is all unnecessary and therefore highly recommended as practice material. In the next photo I have widened the brows a bit to give the face a bit of expression and I also added a small blob of FIMO to be the eyes.

The next photo shows ha the brow has been tweaked further, I have added a small roll of clay and blended it into the forehead.

It gives the face a bit more of a fearsome expression as well.

I have stopped at this stage. With the experience I have now I see that the face is OK-ish, but the head is very much too small compared to the face. The skull needs extending to behind and up. Remember that the eyes are halfway on the head. The next photo shows the (bare) female head on he torso of Shae.

You see here that Steve has made a fine face and although this miniature will get a lot of hair and ears, the skull shape is very smoothly done. Look a the definition on the forehead, mainly through the amount of skull behind it.

Don’t forget, when you are attaching the head to the miniature, to make a neck! Here also is another reason to sculpt the head separate from the mini: you can fiddle around with the position of the head and see what fits the miniature best. then glue the head in place and sculpt the neck.

Hair is technically not that difficult to sculpt, but to make it look realistic is very difficult. If you want your miniature to have short hair than you could sculpt it on the separated head. If the miniature will have long hair it is best to wait to the last to sculpt the hair.

The way to go about sculpting realistic (or at least good looking) hair is to divide sculpting hair in two. First you do bundles of hairs, and afterwards you sculpt the strands. See the next two photos how I gave my head some hair. First I put the general form on the head.

And then I followed up by carving in the single strands.

When sculpting hair it is very important to make the final strands as smooth and uninterrupted as possible. This makes sculpting good hair pretty difficult, but with some practice and keeping in mind to work first in bundles and then in stands it is possible to reach a level as shown in he next picture of shae.

Sculpting arms and hands.

Right! Now it is time to go ahead on the arms and the hands. In this case we need first to drill holes in the cured putty where he shoulders will be. Then insert a wire which is best formed and bent in the right shape before being super-glued in place.

One reason to attach arms after 'finishing' the torso is that you have all the room for uninhibited sculpting of the torso then.\

A handy tip on proportions: when arms are stretched down, the thumb is exactly at groin-height.

As with the legs, first bulk out the arms and then, when cured, finish them correctly.

Use your reference material for the right anatomy.

Look how Steve has inserted a wire, and bulked out the arm and then worked the surface to a smooth finish. Note that the thumb is at groin height.

The sculpting of hands is, even more than feet, very difficult to pull off right. I guess it couldn't hurt to go about it almost the same way as with feet, with curing in between the stages. I would again 1st make the basic shape with four fingers. Then, after curing add the rough thumb and finally go back and sculpt the joins and right shape of the fingers.

One of the reasons hands are difficult is that they are often adorned (rings and such) and they often hold something. If your hands are holding something first sculpt that something, attach it to the wire and only then begin with the first basic shape.

Remember that fingers are not evenly rounded and smooth, there are thickened and often bent parts at the joins. Be sure to include this in your fingers or else your hands will look like the sport sausages instead of fingers.

So, right now we have a somewhat basic miniature and all we need is to clothe them or put them into armor, maybe give him some furry clothing. Maybe he holds a book? Or we can give it a pouch? In short, now we need to add detail. It is impossible to handle all possible detail in depth, so I will try to show a few tricks in the following sections.

Sculpting clothing.

Sculpting folds in clothing like cloaks can be very rewarding. It is not even that hard, but you need to follow some rules and practice a lot. When we do a piece of clothing with folds in it remember that you should not try to be to true to reality in the folding. Choose a few well placed big folds in a cloak or robe as this will look far more attractive and effective as a great lot of small ones. In the next photo you'll see in three stages how I make folds.

First attach a piece of putty. Take your tool (I love the 'hook' on my wax-5 for this) and 'pull' a few folds downwards and smooth the surface. You can then either shape the underside by cutting it of with a sharp knife and make a sharp edge or you can let it cure and then cut the underside of.

Practice with FIMO. I practiced by putting a blob of FIMO or putty on my thumb and shape it into a cloak.

When sculpting tight-fitting clothes like for example stockings you basically treat the legs as if they were to be bare skin. This means that the anatomy needs to be there and the finish should be smooth. Simply add some ridges where the border of the cloth would be and make a slightly raised and sharp edge. See in the next photo how Steve made these ridges on Shae's tight jacket.

So also were the slightly larger ‘flaps’ on Shae’s jacket made (jus below her belt).

Sculpting Chain mail and armor.

As can be seen in the following pictures it is actually not that hard to sculpt chain mail. All you have to do is to use the right tool. The ball-tipped pergamano tools are perfect for this job. The finer the tip is the finer the links of the chain mail.

The way sculpting chain mail works is as follows. You take the tool and gently push a row of slanted holes in the medium. The individual holes look like the middle left one. But you need

the holes to be much closer to each other, effectively pushing them upon the next one to make the previous hole collapse (see the picture next to it). Then it is simply case to go down to the next row. Again make the holes of this row close to one another , but the holes should be skewed to the other side. Push all your holes slightly upward too.
When all the chain mail is done try to round off the links at the edge like I did in the bottom right on the photo.

Plate mail and weapons are all about being able to sculpt sharp edges. This is quite a challenge in green-stuff, but it is a matter of putty control. There are a few things you can do to help. You can either use a different putty (like brown-stuff) which can be more easily scraped or sanded. You can cut off the plate along the edge to create a nice sharp edge, but this is often prohibited when unreachable.

Bladed weapons like swords can be made with all kinds of different materials, but almost always the blades are first made by careful sanding, filing or scraping of cured hard putty or metal or plastic. Then the rest is sculpted on the weapon.

Sculpting other detail.

<u>Belts and pouches.</u>

Belts are just flattened rolls of putty which I wouldn't even mention if it wasn't that you should not forget that most of the time the belt is tight. Be sure then that the belt leaves an indenture where it sits, with small folds along the robe it binds for example.

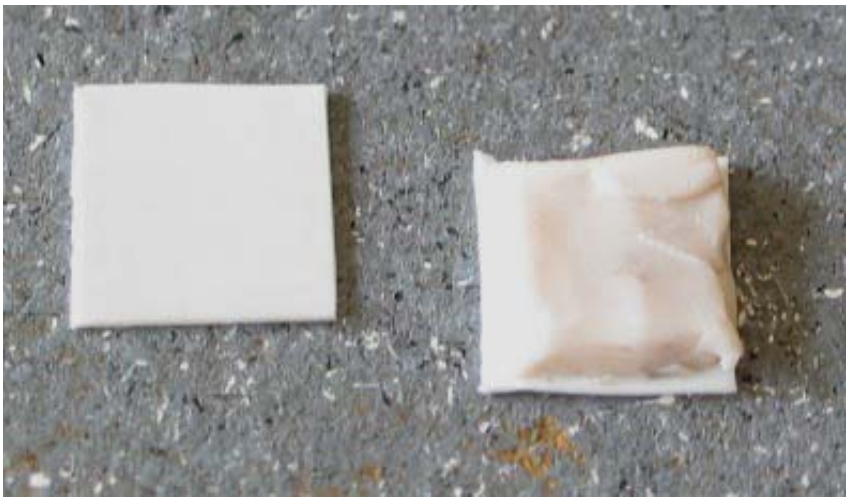
Pouches are easy.

Just take an egg shape putty blob and attach it to where you want the pouch. Then make some folds towards the thin top. Put a small ball of putty on top of that and work into an opening. Twist some very thin rolls of putty into rope and put that around the pouch's thinnest area just above the folds. The same technique goes for larger sacks.

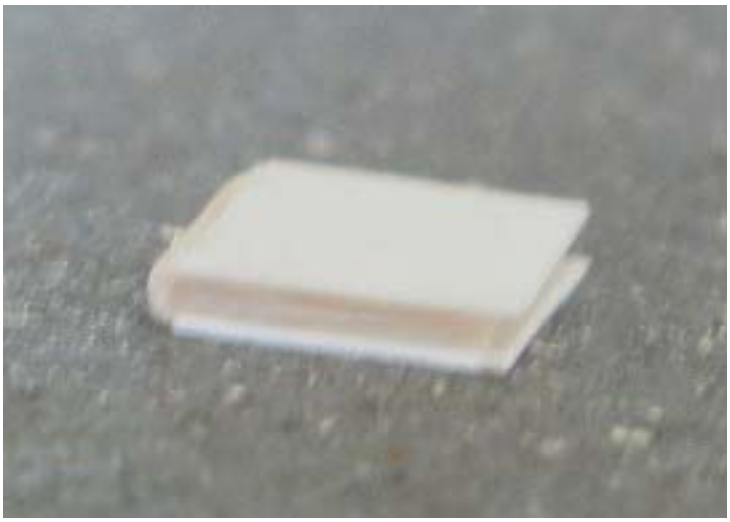
Books and scrolls.

Scrolls are simply rolled up thin sheets of fresh putty. Easy as that but it looks fine. Don't roll them up entirely or even only slightly if the scroll is supposed to be opened.

Books are again all about sharp edges. Here is an example on how you could make them.



Take two squares of thin plasticard. Put some putty in between and squish the two halves together. There should not come out putty from between. Carve in the lines of the pages while still uncured and add a roll off putty to one side to make the back as shown in the next photo (sorry about the blurry photo).

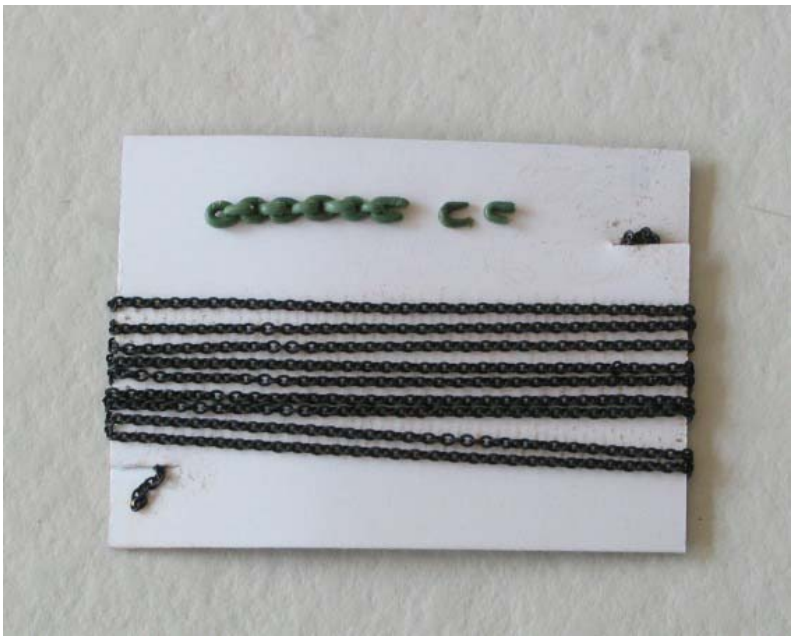


Wood.

A wooden surface can be created by carving chaotic, somewhat parallel lines into an uncured surface. Finally push some holes into the a few lines, again the ball tipped tools are perfect for this. See the photo for an example.

Chain.

Sculpting chain is long and tedious work. You have to sculpt each and every link one after another. Free hanging chain is even worse as you simply do not have a solid underground to work on. To tell the truth I always use real chain whenever possible. But the next photo shows you how chain could be made.



Jewelry and gems

Jewelry or gems can really liven up a figure and it can look very cool if done well. I begin by taking a small round or oval (depending on what you want) ball of putty and press it to where you want. Be careful it is well attached, but do not squash it. This will be the gem and will therefore need to be real smooth. I take a paint brush with lubricant (water is often enough to do the trick) and make the surface nice and smooth by gently brushing the putty surface. Let it cure. Then take a small roll of putty and drape it around the base of the gem and shape it into a 'mount' for the gem. See the next photograph.

The trick to making nice gems and jewelry is to keep it simple and small.

Furs and feathers.

Sculpting fur is a bit like sculpting hair. You also work in bundles and thereafter you add detailed strands. The trick here is that fur does not have parallel hairs, but in a swirly pattern.

Shown on the right is the first stage, simply add some rolls of putty overlapping each other

then you could take a bladed sculpting tool and add 'swirly' strands

or you could use fine tweezers and pull tiny hairs downward for another cool effect as in the bottom picture.

Feathers are done in three stages with no curing in between. You d have to sculpt each feather, even if you have to do a whole wing. But take care to look at loads of reference material of birds if you want to do a wing: feathers overlap!

The three stages are shown above and need no further comment besides a sorry for the blurry picture again.

Rivets and stamps.

Stamps are small moulds that can stamp a shape into a piece of uncured putty. Rivets are thus easily made.

You take a small bit of putty and it where the rivet goes. Press your stamp in and trim away the edges: you are left with your rivet. You could like this also make screws, by simply scoring a line in the top of a rivet.

If you have to add a piece of detail over and over again on a miniature you can make it once and make a stamp. This is easily done by pressing some fresh putty over a cured piece of detail (to be copied). Make sure the cured piece is well lubricated, I use Vaseline here. Leave

the stamp to cure. You simply pull it off and use it to recreate the exact detail further along the miniature.

Well, this about sums up this introduction on sculpting miniatures. It is meant as a helping hand for people wanting to try their hand at this great pastime, but who have no idea where to begin. I hope to have helped a few of you to take the plunge and just try it.

Do not be disappointed if things don't work out as you hoped they would at first, just sink your teeth in and persevere! After all, and I might have mentioned it before (I forgot if I did), sculpting is a question of practice, practice and some more practice.

Good luck and enjoy!

Ramon Laan