



Working within makeup effects: an overview [by Stuart Bray](#)

Very often on shows, the makeup effects and prosthetic department may be a sub-division of either the special effects or makeup departments. On jobs with lots of makeup effects, they may assemble a dedicated crew for the task, such as with movies like *Harry Potter*, *The Mummy*, *Gladiator* or *Saving Private Ryan*. Sometimes the work is outsourced to a company or freelancers who do the work in their own premises.

However it gets done, makeup effects are a peculiar department spanning a number of different skills and disciplines. There is much more to it than cuts and blood- the variety of jobs that come under the banner of makeup effects is quite broad. Here we take a look at some of them.

Prosthetic makeup

When people think of makeup effects, they tend to think primarily of prosthetic makeup. Whether it's creating a simple injury, making someone look fifty years older, burned or like they came from Mars, prosthetics are often used to change appearances subtly and dramatically.



Sequence showing the various steps of prosthetic application. The far left image is the original sculpt on the lifecast. Makeup by Stuart Bray (from BBC show *Walking With Cavemen* (2003). For Altered States FX.

New materials and technologies such as silicone mean very realistic skin-like appliances can be made to blend seamlessly onto the performers' skin allowing live, real time performances to be captured in camera. Sometimes digital elements are combined with prosthetics to create amazing effects which would be impossible or too costly to do otherwise.

There are various skills involved in creating prosthetic appliances, as well as the job of actually going to the set or location to apply and maintain the makeup throughout the shooting day and then remove it after they have wrapped.

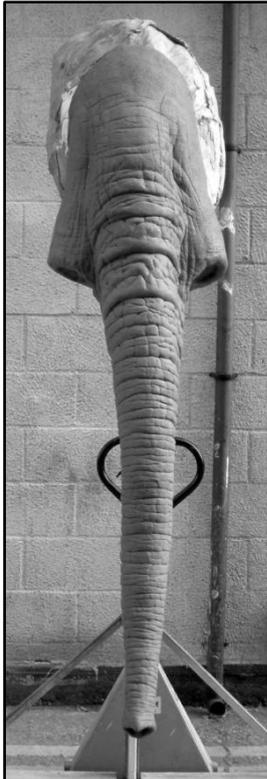


Prosthetics can be as small as a nose tip, or big enough to cover the whole body. This foam latex appliance on Simon Pegg was for *Guest House Paradiso* (1999) for Neil Courbold FX.

An appliance like this could take three or four days to make, and if pre-painted (as it is here) to save time, application could still take one to two hours.

This appliance was used for a sequence where Simons' character is lifted up on a fishing line by a nipple piercing. The nipple had to be seen to stretch as he was lifted up on a hidden harness, with the appliance covering the rig straps. He was also cast for a custom harness which fitted his back perfectly. The thin harness wires were then digitally removed in post production.

The whole appliance needs to be glued carefully to the skin ensuring the edges and colours blend seamlessly.



Full sized elephant 'stunt trunk' sculpt in clay for 'Alexander' (2004).
Sculpt by Stuart Bray & Waldo Mason. For Neil Courbold FX.

Sculpting

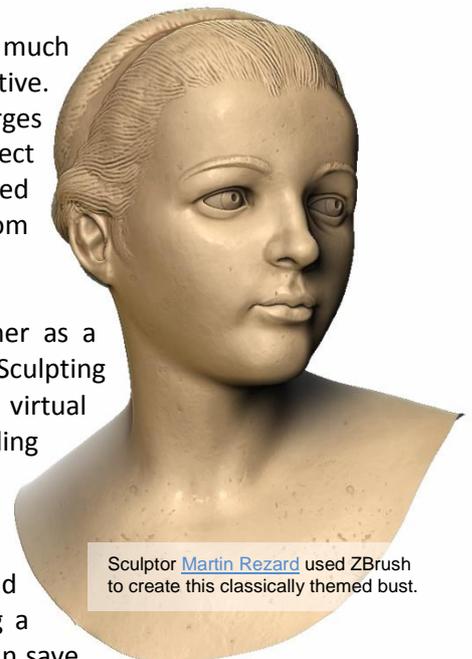
Sculpting is an essential part of the department, and whether it's an ear tip to turn *Spock* into a Vulcan, a whole body 'creature-suit' to make *Hellboy* look fearsome or a battlefield of bloodied corpses on Omaha beach, chances are there has been some kind of sculpture involved.



[Martin Rezard](#) sculpts a Minotaur maquette in plasteline for *Inkheart* (2008) for [Millennium FX](#).

The scale of sculpting can vary enormously from subtle prosthetic appliances which need to have pore perfect detail, to huge oversized creatures which may require a whole team of sculptors. Ideas and designs may be sketched out on paper or made as 'maquettes'-small scale versions which can show the producers the idea without the materials and cost involved in a full size version.

Sculpting commercially like this is as much pragmatic problem solving as it is creative. There is rarely time to indulge the artistic urges many sculptors have, as this is only one aspect of the process. Once you have your sculpted form, you then need to make an object from it which can be used during filming



Sculptor [Martin Rezard](#) used ZBrush to create this classically themed bust.

New technologies mean digital models can be sculpted too, either as a design tool to simply show concepts or to create the final version. Sculpting software such as [ZBrush](#), [Mudbox](#) and [modo](#) are used to create virtual models which can later be output in a lightweight material for moulding without the need for clay-useful where massive sculptures would need literally tons of material.

Even with computers, the sculptor still needs to understand form and shape in order to create convincing work (after all, simply having a word processor does not make you a novelist). Doing it this way can save time and money, allowing for many more variations of design before committing to a final concept.

Moulding & casting

Once you have your sculpture, you need to reproduce it in an appropriate material. You sculpt an original form in clay because it's an easy material to push around and work to your intended shape. Once you have that form, you then need to make a mould so that you can make rubber versions. Anything which is made from a mould is known as a 'cast', and care must be taken to ensure that each cast is useable.

Good moulding is essential, as once the mould is made your original sculpture is usually ruined in the



The elephant trunk has been sprayed with a silver waterproof sealer to prevent the clay from drying out.

Clay walls are added to enable the mould to be made in a number of sections. The various pieces will then fit together perfectly, allowing easy removal of the casts.

Large moulds such as this need to be both strong and lightweight. Fibreglass is often used in this instance.



process. This doesn't matter though, as you now have a copy of the sculpture in reverse-out of which you can cast out multiple copies. It may be that you need one or fifty casts - they'll all come from the same mould, and they'll all need to be useable. Sometimes processes can go wrong, and mouldmakers will need to solve the problems that occur.



Fibreglass and polyester resin used to create a supporting jacket for a silicone mould. Mould by Stuart Bray for BBC TV's *Waking the Dead* (2008) for Waldo Mason.

Moulds and casts can be made from a variety of different materials depending on the requirements and the budget for the project. Mouldmakers need to be skilled with all of them, and be able to judge which materials are right for the job.

Moulding can generate a lot of work with master moulds, duplicates, inner cores, and multiple casts all coming through the mould shop doors. Very often toxic chemicals and materials are used, so good air extraction and health and safety need to be observed to operate safely.

Lifecasting

If you need to give an actor a groovy-looking Vampire forehead, you'll need a copy of his real forehead to sculpt the appliance onto if it is to fit perfectly. This is why lifecasting is an essential skill to the department, as it is the first step in the process of creating a custom prosthetic appliance. Lifecasts of heads, hands and whole bodies can be done quickly with a skilled crew. Once the original is cast, a master mould is usually made so that duplicates can be made.

The intention is to get an accurate copy of the performers face or body, and if the performer has been released for a short time or needs to leave promptly, there is a lot of pressure to get it done right. As it is critical this be done correctly and comfortably, lifecasting requires a lot of practice to perform competently.



A plaster lifecast fresh from an alginate mould taken directly from the face. Photo courtesy Ed Woodward-www.sculpt-ed.com



Seaming

Often moulds are made in more one piece, which means there will be seam lines to be removed. Good mouldmaking and casting skill will reduce the severity of seams, but there are often imperfections to be made good before a cast can be used.

Sometimes a cast could be perfectly useable except for a small imperfection such as a tear or an air bubble. In this instance, a good finisher can rescue the cast and remove the necessity to make another instead. If the cast in question is a prosthetic appliance where there may be close-up shots involved, good seaming and repair is essential.

This silicone severed head is from *Dracula* (2006) for Kristyan Mallet- www.kristyanmallett.com.

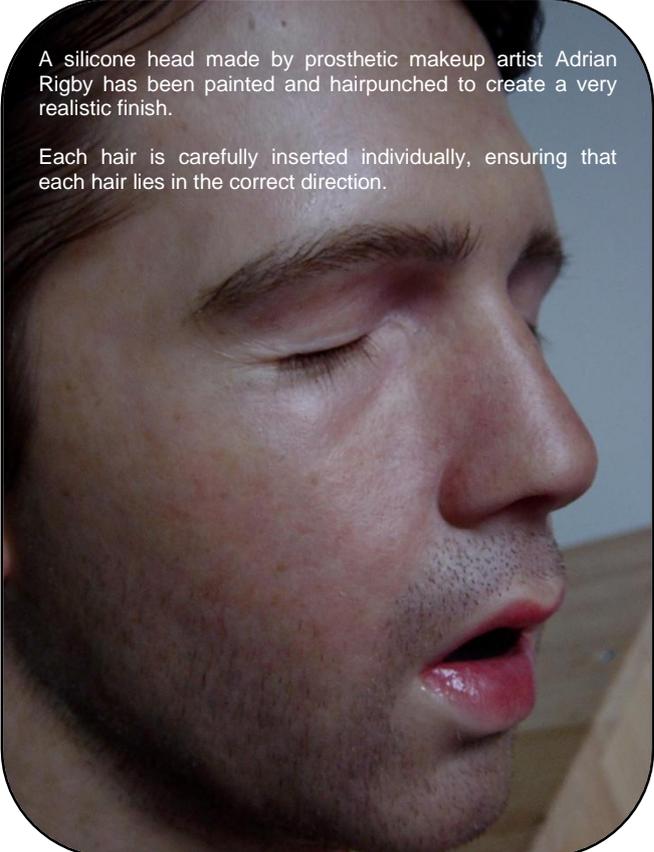
Fresh from the mould and you can clearly see the seams and excess silicone, known as flashing. This needs to be carefully cut away, and any visible seams filled and made to match the surrounding texture and colour.



Painting & finishing

Once the cast is perfect, it may need painting and finishing. If the object in question is a full size body, for example, there is a lot to do. The body will need to be painted to match real skin, using washes and layers of colour to gradually build up a realistic finish. Once the painting is done, there may be hair to add. In the case of heads, a wig may be used-easy enough you may think. What about the arms, legs, armpits, beard stubble and eyebrows?

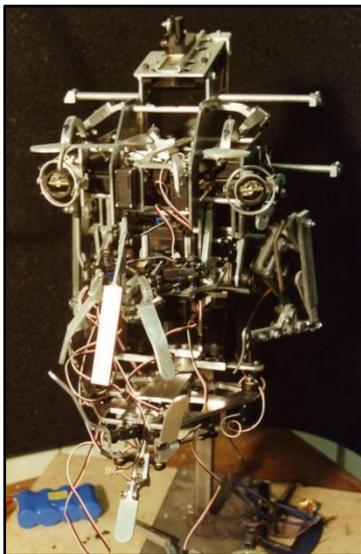
In this instance, a process known as hair punching is used. A small needle is used to insert hair into the surface of the material, one by one! It takes a long time to do, and even longer to get good at it. Human hair lies in different directions, and often hair has to be mixed, precurled and cut correctly in order to sit right on the body. Look carefully at your own eyebrows, and see how many subtle changes there are in direction, length and colour. It is an incredible skilled area, and not for the faint-hearted.



A silicone head made by prosthetic makeup artist Adrian Rigby has been painted and hairpunched to create a very realistic finish.

Each hair is carefully inserted individually, ensuring that each hair lies in the correct direction.

Animatronics



This animatronic head mechanism of the Vogon character 'Jeltz' was made by animatronic designers Gustav Hoegen and Richard Darwin for the movie *'The Hitchhiker's Guide to the Galaxy'* (2005). For Jim Henson's Creature Shop

Animatronics can cover a simple push-pull rod mechanism to a complete radio controlled creature with computer operated lip-sync to match pre recorded dialogue. Essentially, the job involves designing and making one off custom mechanisms. Animatronic engineers (or 'mechs' as they are known) need to be skilled in using tools such as lathes and milling machines, and be able to weld, solder and use radio controls. All of these skills will need to be used to create specific movements which will look realistic, so add puppeteering to the skills needed to be a good mech.

Over their mechanism will usually be a finished 'skin' which hides all their hard work, until the finished creation comes to life blinking, smiling and frowning on cue. Sometimes they may be required to create stand-alone mechanisms such as a prop or puppet. However, sometimes it will need to be something which attaches safely to a performer as part of a makeup. Imagine Quasimodo with a blinking eye, a demon with wings that need to open and close or an oversized alien head on a human actor with six moving eyes. The physical size of the mechanisms can be brought down almost to the level of watch making or big enough to make a full size dinosaur walk.

Once they have finished in the workshop, they will often be required to go on-set and control the mechanism during filming. After all, who better to puppeteer and repair it than the engineer who built the mechanism in the first place?



Other areas include teeth and eyes for creatures, corpses and realistic heads. There are taxidermists and similar industries which also make teeth and eyes which may be used. Very often, these will need to be custom made to match a performers features. For fake heads which will be seen in more detail, it may be necessary to fabricate an entire mouth interior including the roof of the mouth and tongue.



This mouth interior was used for a head in the movie *'Mindhunters'* (2004) and was made from dental acrylic resins.

Once constructed, it was painted and stained to match the actor, and given a glossy finish to appear wet.

The mouth interior is shown at the pre-painted stage where it has been fitted to the articulated fibreglass skull which fits inside the final silicone head.

Made by Stuart Bray for Altered Staes FX.

Dentures to be worn in the mouth such as fangs need to be custom made by specially trained dental technicians. The casting of teeth is considered an internal process and potentially risky for the unqualified and uninsured. Imagine a movie star is released for an afternoon for his teeth to be cast so a set of dentures can be made. What happens if you remove the cast and accidentally pull a ceramic crown out of his teeth at the same time? If they have to cancel two days filming while it get replaced, imagine the delays and cost to production (and ultimately, to you) while they reschedule.

Another aspect is contact lenses, which need to be made and fitted by qualified technicians. These lenses can be simple soft lenses, similar to those which many people wear to correct vision or larger 'scleral' lenses which can cover the entire visible area of the eyeball to create a more dramatic effect. Lenses should be inserted and removed by an on set 'lens tech' whenever they are needed, as they eye is obviously a sensitive area which should only be handled by qualified personnel.

So there you have it- a quick dash through the makeup effects department. Watch you don't slip on the fake blood on your way out, and be sure to hand your pass back to security when you leave! As ever, if you have any other questions about anything, be sure to drop me a line!

Happy sticking!
Stuart

Questions or comments about this article?
Get in touch at www.learnprostheticmakeup.com



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