



THE FIGURE-MAKING PROCESS AT THE MADAME TUSSAUDS STUDIOS

Each year Madame Tussauds' Studios make approximately 40 to 50 figures. When large projects are in progress, this can be raised to over 100 figures and all the departments have to be enlarged accordingly. The Studios supply figures to all Madame Tussauds around the world, with London launching approximately 10-12 each year.

Although each process has had its variations, figure making at Merlin Studios has not changed fundamentally, apart from its use of materials as well as quantity and quality of reference from sittings, since Madame Tussauds was founded over 200 years ago in Marylebone, London.

Before making a figure it must be decided in which part of the attraction it is to be placed, what its pose should be, and possibly how it should relate to other figures. If the person chosen to be portrayed is available, he or she will attend a 'sitting' in purpose-built rooms at Merlin Studios, Acton, West London. If not, Tussauds sculptors travel all over the world to come to the stars! Bahamas, New York, LA, Mumbai, even The Ivy Restaurant – these are some of the locations!

We discuss pose, expression and the image of the figure with the sitter and take detailed measurements and photographs in, ideally, a 4-hour, but sometimes just 15-minute sitting. Sittings are hard work – even four-hours isn't much time to gain all the information needed to create a figure which could take up to six months to make. The sculptor usually has an assistant and our in-house photographer at 'external' sittings sessions, but when they take place at Studios the sculptor can also expect assistance from additional Merlin Studio's artists - experts in assessing hair, eyes and skin colouring and discussing wardrobe requirements. Members of the Merlin Studio's mould team are also available to take hand casts and teeth casts, if necessary.

The sitting offers the sculptor the opportunity to get to know his/her subject a little, gaining an insight into the 'real person' behind the media image – Madame Tussauds endeavours to reflect this in the final figure.

SCULPTING

Ideally, our sculptors model in clay to achieve a lively portrait, using as their reference the photographs and measurements taken at the sitting. This reference is supplemented with press pictures and videos so that the sculptor can keep in mind the public image of the person. If the portrait is of an historic subject then they use paintings, sculptures, life or death masks, and contemporary descriptions of the person, as well as descriptions of how people in general looked at that time, as their reference - all of which is obtained by our Research Department.

The sculptor builds an armature – essentially a skeleton - out of steel and aluminium rods, which are bulked out with newspaper padding and held in with chicken wire. Aluminium is used for the arms because it is strong and can be moved aside while the body is worked on. The armature establishes the exact stance of the portrait. Any props, particularly the shoes, have to be available as they are essential to the pose. For example, the posture of a woman wearing high heels and a tight skirt will be quite different from that of a woman wearing casual shoes and trousers.

The body is built up around the armature in clay. When the 'relationship' of the neck and head has been established, the head is removed and worked up on a separate purpose-built stand. This stand allows the sculptor to adjust the head to any angle, to match that of the photographs. The sculptors have to increase each measurement of the head taken at the sitting to compensate for the wax shrinkage (see below.) When the head is almost complete, it is worked back onto the body for final adjustments. Allowance has to be made in the clay body for the way the clothes will sit on the hard fibreglass body surface (see below.) For example, men wearing trousers with a belted waistband will have a slight indentation around their waist where it gently pushes into the flesh.

Hair is sculpted in clay to help obtain the likeness and maintain the right proportions, but this is removed before the head is moulded, so that a correct skull shape can be achieved. The sculpting process takes about ten to twelve weeks - six to eight weeks for the head and four for the body (a partial body portrait can take longer.)

MOULDING

The moulders cut the clay head away from the clay body at an appropriate point around the neck/shoulder area, depending on how much of the neck and torso is to be visible. Once moulded, the original clay can be recycled.

A 'piece mould' of the head is made using fine quality plaster to reproduce the surface of the clay, which is then cast into a beeswax and Japan wax mix. Because they are made up of many separate pieces, the head moulds will last a long time. We have plaster piece moulds which are 200 years old, and fresh wax casts can be taken from these originals many times.

The main body, which will ultimately be clothed, is moulded in plaster with Hessian-backing and steel reinforced rods, then cast into resin and fibreglass - chosen for its qualities of strength and lightness. The two-piece plaster body moulds, known as 'waste' moulds, are usually destroyed in the casting process.

The casting of the 'negative' head moulds into the final 'positive' wax heads is a highly-skilled process. The plaster 'piece mould' is saturated in hot water, rendering it completely airtight so that no air bubbles appear in the wax cast. The mould is then removed from the water, dried, and molten wax, coloured with a dye and heated to a temperature of 165° F. is poured into it. The wax is then left to cool for the time it takes for the wax to harden to a 5/8-inch thickness. The surplus liquid wax is then poured away, leaving the hollow wax cast. After further cooling for 1½ hours the pieces of the mould are carefully pulled away to reveal the wax head.

At this stage the wax surface is interrupted by a number of tiny ridges formed by the joints between each mould section. The head is returned to the sculptor who carefully removes these seams. The head still retains wax eyes and these are melted away to make room for the acrylic eyes. The sculptors use a heated eyeball-shaped brass tool, and the eyes are then fixed in place from inside the head. The teeth, if showing, are treated in a similar way.

Hands are also cast into wax, but elvex is added - a plastic material which serves to strengthen the wax and give it more flexibility to help preserve vulnerable fingers. All Tussauds hands are 'life casts' moulded in dental alginate. Plaster is poured into the alginate 'negative' to make a 'positive', which is then remoulded to create a more permanent, flexible rubber 'negative'. From this, the final wax hand is cast. Alginate is so fine a material that it allows the lines, pores and hair follicles of the skin to be reproduced in minute detail. The wax hand cast is fitted with a square metal section at the wrist, which will eventually locate into the fibreglass arm fitting.

TEETH, EYES AND HAIR

If the portrait is to have an open mouth expression, an impression of the teeth is taken. From a silicon mould, the impression is then cast into dental acrylic. Teeth shades and colour vary from top to bottom and from tooth to tooth, so each tooth is processed and coloured individually - having compared them to a colour match taken at the sitting. The teeth are then polished and set in the pink plate.

When artists are unable to take teeth impressions, they compare the sizes on detailed photographs of the subject, thus obtaining vital information to be able to make the teeth.

The teeth-making process was developed in conjunction with Mount Vernon Hospital, Middlesex, and our supplies come from actual dental suppliers. It takes our technicians an average of four days to make a set of teeth.

Each pair of eyes takes approximately 10 hours to make. At the sitting, stock glass eyes are compared to the sitter's own, and life-size colour transparencies are taken, so that our eye-making experts can reproduce the exact inner, middle and outer iris and sclera colours. Each eye is painted with watercolours with fine red silk thread used to create the veining lines, and the whole is cast into acrylic.

At the sitting a small sample of hair is taken, and this is sent to a hair merchant to be matched exactly for colour, curl and texture. It takes approximately six weeks to insert a full head of hair. Each strand of human

hair is inserted in the direction of hair growth, stand by strand, using a specially developed fine needle which has been cut across the 'eye', forming a fork. Once inserted the hair is secure in the wax and can be cut, styled and washed, again and again. Eyelashes, eyebrows and any body hair needed are also inserted.

If a head of hair is being made which will need a lot of extra maintenance, the hair artists may choose to make two wigs instead of doing one full head insertion. It can take two or three weeks to make one wig. If a portrait is to wear a wig, a front insertion is still carried out, and this is styled into the wig when it is fitted, so that the wig is not noticeable.

COLOURING

Wax shares a quality with human skin - it is translucent, allowing light to pass through it in the same manner that skin does, giving it that 'glowing' quality. Colour is applied to the wax 'skin' using oil paints. The paint is 'stippled' on - built up in layers to create realistic skin colour and texture. Because the paint is oil-based, when the head is being maintained it can be sponged in water without the colour washing out.

At the sitting, colouring artists match skin colour on the face and body, in order to accurately paint the head and hands, and any other exposed areas of the figure. The artists constantly bear in mind the particular light conditions under which the figure will be displayed, and adjust their colouring accordingly. The fibreglass bodies are painted using enamels and acrylics.

It takes approximately five days to colour a head, and two days to colour the hands. Additional time is required if more of the body is showing.

WARDROBE

It is a Tussauds tradition that the sitter donates his/her own clothes, if possible - such articles take on the individuality of the wearer, which adds to the authenticity of the figure. If we are unable to obtain the subject's own clothes, we either go directly to their tailor to have replicas made, or approach the retailer from whom the subject buys clothes. We also copy outfits in-house, using our team of specially trained costumiers. If shoes cannot be donated we buy them from relevant suppliers and if appropriate, wear them in to get an authentic, slightly 'worn look'.

Jewellery is donated, purchased or made for us by the subject's original suppliers. If we cannot arrange for replicas to be bought or made at an original source then we have jewellery copied by a freelance jeweller. Orders & decorations are purchased from official makers.

THE FINAL FIGURE

When ready all the body parts are carefully fitted together and the figure is fully dressed. All the departments work together to ensure that the figure looks as it was intended, and any final adjustments are made. The figure is then photographed so that we always have a record of how it should look, for maintenance purposes.

The opportunity to have the subject of the figure stand beside it is invaluable, as it allows us to see how accurate and true to life the figure is, and further cements Madame Tussauds' excellent relationship with the fine and famous. 'Side by sides' usually take place at big media launch events – Studios representatives often comment that these occasions are both nerve-wracking and incredibly rewarding!

For further information please contact:

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Visit our website: www.madametussauds.com/london