



Notice something wrong with the photo above? That's right, it has no pilot! It just doesn't look right, does it?

As most scale enthusiasts well know, a pilot in the cockpit is essential to make the model look 'right'. This is where Perfect-Pilots was born – we couldn't find a realistic pilot for our own ¼ scale Tiger Moth project so we made our own then realised that other modellers may be having similar problems.

Getting the pilot to complement the model well, in terms of style, era, scale and detail is not easy and requires research and a 'feel' for the needs of the model maker. Reference photo's are the best source but often these do not show the specific aircraft, pilot or detail required. For example, a black-and-white photo provides little assistance in determining the colour of an item. We will work with the modeller to understand their requirements, then work to achieve the desired look.

So, how are pilots made

Heads, hands and feet - we start by sculpting them in a sculpting clay. To ensure scale accuracy, the dimensions of all the different aspects of the face etc., are measured and re-measured to ensure that the item looks 'right'.

The masters are refined and scale detail such as stitching, wrinkles, creases etc., are added to the basic item. Once the master is complete we create a rubber mould, being careful to place the joins in suitable areas to help make them less visible in the final product. Some moulds have to be made in 3 or even 4 pieces to enable the completed item to be removed.

Each item is individually cast from the moulds. We use a selection of modern lightweight, resilient materials for our pilots, each one chosen for the specific item and use. For example, we use rigid moulding materials for the heads, hands and feet but use an additive to reduce the density to keep overall weight down. The detail that can be reproduced using modern moulding and casting techniques is amazing and the rubber moulds we use can even reproduce unwanted fingerprints on the original item!



A completed master used to make the mould



The finished item, this one WW1 German Pilot.



This simple 2-piece mould is for the clasps of QS style harnesses

The Perfect-Pilot

It's a family affair.

Wendy Norman



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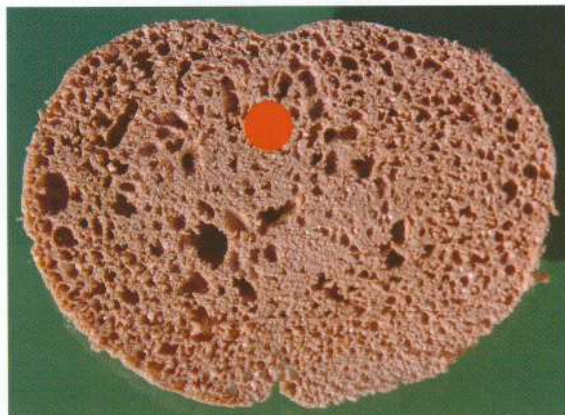
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Small air bubbles trapped against the rubber mould can create voids in the moulded item, removing or destroying surface detail. This is particularly prevalent when attempting to produce the optional very lightweight pilots, so we have developed a range of additives and techniques to reduce these surface bubbles.

The cast reproduction items are then individually hand painted. This is the most time consuming process but also allows scope for achieving the specific look that the modeller wants. Choices like dark hair or blonde, clean shaven or stubble, moustache or not, are all important when trying to recreate a specific aircraft, pilot or era.

Torso and limbs – masters and moulds for these are created in much the same way as for the heads, hands and feet. We use expanding foams for the reproduction items – lightweight rigid foam for the torso and a flexible foam for the limbs. This allows the pilots to fit into almost any cockpit and the limbs to bend in a lifelike way.

Clothing – the assembled, painted pilots are then dressed in hand-made, bespoke clothing to represent the specific aircraft, pilot or era. Leather jackets, fabric trousers, shirts, leather coats etc., are complemented by WW1 leather gaiters, WW1 trench maps and other accessories as required.



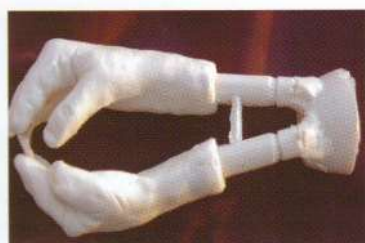
Above:
A cross-section of the expanded material used for hands and feet. For scale, the red dot is 3mm diameter.



Left:
Another master – this one at 1/6 scale.



A set of body parts. Two different foams are used to create this set.



A set of 1/3 scale hands as removed from the mould..



Leather, fabric and lambs wool are some of the raw materials used to dress the pilots.



A 1/3 scale fabric jacket and silk scarf.

Options

Our pilots are quite light anyway but sometimes a particularly lightweight pilot is required and we can usually accommodate this by applying extra care when selecting materials etc.. More unusually, some modellers have asked for heavy pilots (e.g. for use in early gliders where the pilot is just about the only thing in front of the CG) and the pilots can be ballasted, for example, to help. Other options include shorter torsos to meet the requirements of a particular cockpit or canopy, flexible bodies to enable the pilot to recline in the bucket seat of a modern glider and animated pilots with servo-operated heads, arms and legs that move together with the control sticks, rudder pedals etc..

And now for something completely different!

When we started making bespoke pilots we expected to receive some strange requests but we certainly never expected to make a lion cub - but that is exactly what happened when we were asked to make a scale Roscoe Turner. Sponsored by Gilmore Oils, Roscoe had a lion cub named Gilmore as his co-pilot. To comply with early aviation law, Gilmore had his own harness and parachute. A scale Roscoe would have been incomplete without his Gilmore so a scale Gilmore, complete with parachute was required thus making this the most unusual order we have had to date. We wonder what might be required next!



A 1/3 scale Roscoe Turner with Gilmore and his parachute harness.



Scale details include scale WW1 trench maps.



1/3 scale civilian female pilot



1/3 scale WW1 pilot



Scale WW1 German pilot



1/3 scale female pilot – this one made to represent Hanna Reitsch

Perfect-Pilots is a small, family based business supplying bespoke model aircraft pilots. All our pilots and accessories are hand made by Wendy from our base in Kent. Our standard range can be viewed on www.Perfect-Pilots.co.uk and Wendy can be contacted on info@Perfect-Pilots.co.uk for bespoke options and commissions.