Sport-scale Pilot's Harness

When I was finishing my one-sixth scale model of the de Havilland DH82a *Tiger Moth* last year, its open cockpit cried out for a good pilot figure to round the job off nicely. A quick 'phone call to AH Designs soon had a nicely finished figure dropping through my letter box - and at a very reasonable price.

The AH Designs figures are very light, being hollow-moulded from flesh-coloured latex, and are amongst the most realistic-looking available. They are supplied with 'real' clothing including flying helmet and goggles, fur-collared 'leather' flying jacket, white 'silk' scarf, and gloves.

The head-and-trunk figure was duly trimmed for height and a balsa base added to simplify gluing in place. It was then trial fitted in the cockpit whilst I stood back to judge the effect.

The figure looked just right for the model, and yet.... something was wrong. I couldn't place it immediately, but there was definitely something missing.

Then the penny dropped. What was supposed to be holding him in the cockpit?

In practice, of course, he'd be held there by a generous gobbet of epoxy applied to his ar.... ahem..... nether regions - but that's not how they hold full size pilots in place is it? ("Five minutes to startup, Captain. Shall I mix the Z-Poxy now, or will you just Zap into place at the last moment?")

No, full size pilots insist on something a little less permanent - an adjustable harness - and that's what my *Tiggie* driver needed to complete the effect.

I didn't want to do a 'botched' job and spoil the effect of the pilot figure. On the other hand, it is only a 'sport scale' model so I didn't want to go overboard on the realism either.

After some thought I came up with a reasonably realistic-looking set of harness that can be simply constructed from some tinned copper wire, thin aluminium sheet (lithoplate would be fine) and a bootlace. The following describes how the harness was constructed.

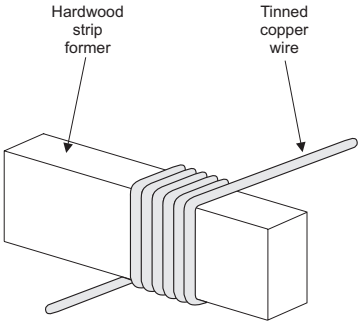
The bootlace will need to be the flat variety, and, of course, you can choose the colour to suit the type of model. I used dark grey, but khaki or black would also look OK.

My pilot figure only extended down to waist level, so that simplified the harness required to just the two shoulder straps. The first job is to cut the lace roughly to length (cut it over-length at this stage, and adjust the final length when fitting to the figure).

For each strap, cut one piece long enough to extend from the bottom of the pilot's back, up over the shoulder and half way down the chest. Then cut a second piece approximately twice as long as needed to extend from the bottom of his front to half way up the chest.

Tip: Before cutting the lace, pull it straight and flat over a piece of polythene and wick in a small amount of thin cyano. This will 'harden' the ends of the lace and prevent it fraying. The ends will not be visible on the completed harness.

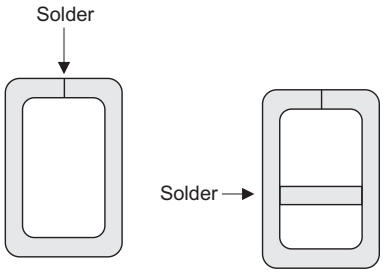
The next step is to construct the harness adjustment fitting. Take a piece of tinned copper wire of approximately 18swg and wind it firmly round a hardwood bearer as shown below:



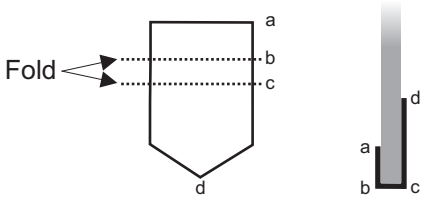
The bearer should be the same width as the bootlace, and slightly more than that in height. If you don't have any tinned copper wire, ordinary copper wire works just as well, but will need to be 'silvered' with paint or solder later on.

Slide the coiled wire off the former, and snip through the middle of one of the shorter faces to separate it into a series of 'square loops', each with a split at the top. Carefully flatten one of the loops and true up its sides, then join up the open ends with a very small amount of solder.

Next cut a straight length of wire just long enough to fit within the loop across its short axis (if you cut slightly over-length and then file it down to size you will get a better fit by removing the 'wedge-shaped' ends produced by cutting snips). Solder the ends of this to the sides of the loop about two-thirds of the way down the loop away from the soldered end, as shown below:



Then cut a piece of thin aluminium sheet to the following shape to form the harness end reinforcement:

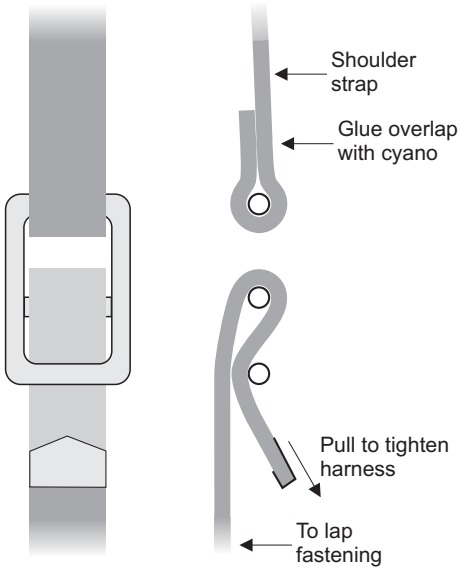


The width of the shape should be the same as the width of the bootlace. Fold the aluminium along the marked lines; this is most neatly done by folding it around a piece of metal of appropriate thickness, e.g. a steel rule.

As shown in the above diagram, wrap the reinforcement around one end of the 'strap' that is destined to be at the front of the

pilot. Crimp it gently in place, and secure with a very small amount of cyano.

You are now ready to assemble the harness as shown in the following diagram:



First thread one end of the shoulder strap through the larger opening in the wire loop, fold it back on itself round the soldered end of the loop and secure it with a very small amount of ***thick*** cyano (use thick cyano here so that it doesn't wick through to the front face of the lace).

Then thread the other strap through the lower part of the loop (the end with the aluminium reinforcement probably won't fit very well, so it's best to thread the other end through the loop). From the back of the loop, feed the strap forwards through the lower opening, then back down through the upper one. When the harness is in place, the friction of this loop-through will permit length adjustment easily to be made without slippage afterwards.

All that remains then is to fabricate a second, identical harness and then fit the two to the pilot figure, securing at the base of the figure with a small amount of thick cyano on the back of the lace. Trim any overlap to length, fit the pilot figure in the model.... then aviate!

Not true scale maybe - but it looks the part, it's quick to make... and it's cheap!

Andy Tabor