

Modelling a Smoke/Exhaust Effect

By monkeyblood@outlook.com (21/9/2013)

Ok, I've played at this for a while, and scanned the internet looking for ways that modellers create smoke/jet effects, with limited degrees of success. Some notable creations exist, but the methods of creation seem to be shrouded in voodoo.

I've tried the cotton wool effect, experimenting with expanding foam, intumescent material, and a whole host other weird materials, but none of it looked realistic enough, so I set out on my mission to come up with a solution for mounting a Warhammer 40k Stormtalon, and tell the world how I did it.

Phase 1 - Stormtalon

Using a mixture of a wire-frame 'form', tissue paper sheets, PVA glue, water and black acrylic paint, I was off. This was the first attempt, but the process needed refinement, as I still wasn't 100% happy with it, although it was certainly a good start.



The main problem was that at the level of detail the model is normally viewed at, the construction method was more obvious...



...and therein lies the key to modelling at small scale (making the viewer not realise how it was achieved and creating an illusion).

Phase 2 - Stormraven

So that festered for a good 6/8 months, and I had a Warhammer 40k Stormraven sitting in the box waiting for some enthusiasm.

While building the model, I had thought about the mounting, and wanted to continue the 'jet thrust theme' I had started by doing the Stormtalon. The standard mounting base supplied with the model is, to be fair, crap (see below).



So, I decided that the new method needed to use something other than PVA glue and water, so that when it dried out it was harder and the gaps between the tissue folds and creases were less obvious... I know, I thought... Filler!

So, here's what I did;

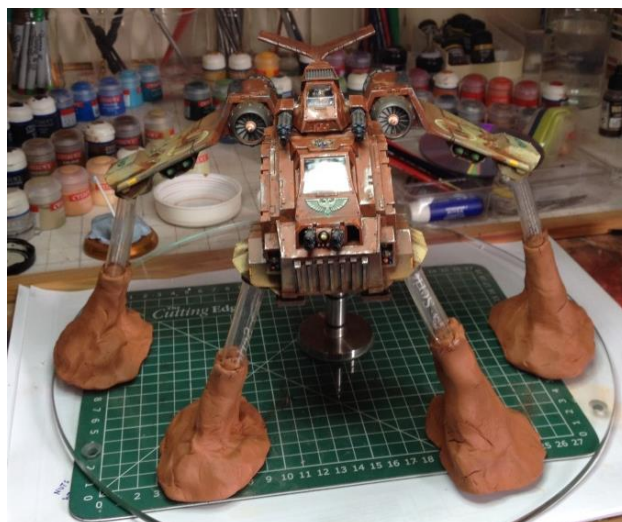
The Form

Firstly, create a 'form' to act as something to create the base shape of the structure. In the build example below, this was a cut and shaped piece of expanded polyurethane foam, which was created by squirting it out of the tin – nothing more elaborate really.



Once I had this, I inserted a piece of plastic tubing I had lying about (an old paint brush packaging tube), which would allow the 'jet/nozzle end' of the structure to be inserted into the jet part of the model.

Equally as good is air-drying modelling clay, which is what I finally decided to use for the Stormraven exhaust jets.



Materials

What we need are the following;

- Roll of tissue paper (2 ply, bum-wipe type)
- Tub of 'Ready to use' filler
- Jug of water
- Table spoon
- Empty mixing tub
- A sheet of acetate
- Your pre-made 'form'



Tissue Sheets

Separate the tissue paper into individual sheets (still 2-ply is fine).



Now, as I am writing this, the thought occurred to me that you 'could' use cotton wool instead of tissue.

Mixing Recipe

Now, you need to create the mixture.

- Tip 150ml of water into the mixing tub.
- Add in 4no. heaped tablespoons of 'ready to use' filler.



- Mix well until most of the filler is runny, and the mixture is similar to the consistency of pancake/batter mix, or slightly thicker than milk.



Building the Effect

Now, let's start adding the tissue to the form.

- Place the form on top of an acetate sheet... **this is really important**, as in 36 hours' time when its dry, you will thanks me for not having to get the hammer and chisel out and break your hard work apart.
- Drop a single piece (2 ply) into the mix and leave for 0.5 second (no longer).



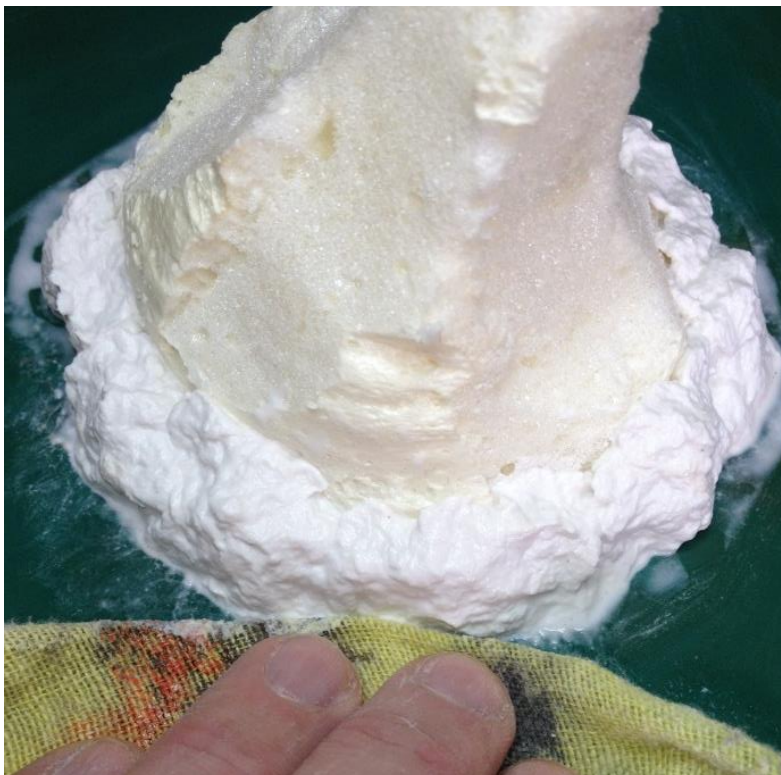
- Pull out, and using the ends of your fingers on both hands, roll round and squeeze the tissue to get most of the mixture out of the tissue, it should be firm, and still wet but not soggy.
- Apply this to the base of the form.



- Continue to do this all around the base of the form for one revolution. If you are as messy as me, mop up the drips as you go.



- As the excess fluid gathers around the bottom of the form, use a cloth or spare tissue to dab off the water.



- Now, the particles in the filler still in the mixing tub will have started to settle in the mixture, so you need to mix it again well before carrying on. This is an important step, as you need as much particle in the tissue as possible so it dries out hard.

- Once done, continue to go round the form again adding tissue sheets.



- Don't forget to stir the mixture to stop it settling (I would suggest every couple of minutes at least).
- As you get closer to the top of the form, you can start using half a sheet at a time or do one sheet and pull it apart before applying to the form.
- You can start making the effect smoother as you get nearer the top to where the nozzle would be.



- Dap off the excess fluid that has gathered around the bottom of the structure.



- Stick somewhere out of the way to allow it to cure for a good 36 hours. As there is a lot of moisture in the process, you might want to stick it above a radiator over this period.
- Once it's hardened, peel the acetate sheet off the bottom... and hey presto!

Here's the same process followed for the Stormraven exhausts using the air-drying modelling clay as the form;



Painting

Now, I don't profess to be a master painter by any stretch, so I'm sure you guys will do this better than me, but I'd recommend studying photos of smoke to see what might be best for you. You could make it look like smoke-billowing flames out of the jet or more realistically like a rocket jet.

Here are some examples to whet your appetite.

Smoke and Flame



Rockets

