ISSUE 29

APOGEE

PEAK OF FLIGHT

NEWSLETTER

Useful Rocket Tools

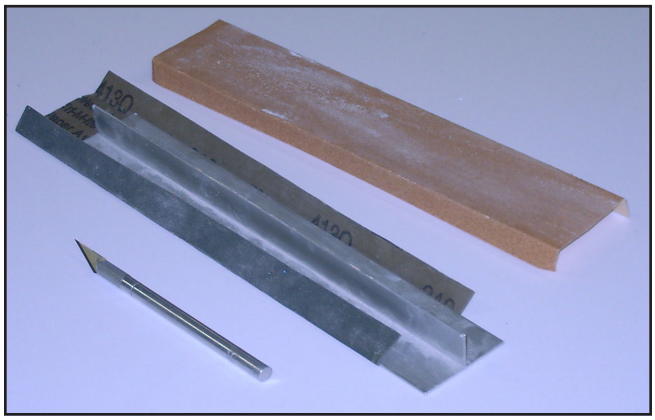
By Tim Van Milligan

There are many lists of range box supplies. So, I thought I'd write about some of the useful tools I have in my inventory for "building" model rockets.

Many novice modelers think that you have to have lots of different power tools to build cool looking rockets. But that is not the case. I have access to lots of power tools, but I rarely use them. For most kit building, I do most of the stuff by hand.

The most important tool is a hobby knife. I have about six of them. They are everywhere in my work area. I have so many because I kinda rotate them based on how old the blade is, and what I'm cutting. Dull blades are great for scoring light-weight paper that needs a sharp fold (like on a Nike sytle fin). For general purpose cutting or scraping, an old blade will be sufficient. For ultra-precise cutting, I want the freshest - sharpest - blade available. I also keep single-edge razor blades in abundance too. I use them mostly for a scraping action.

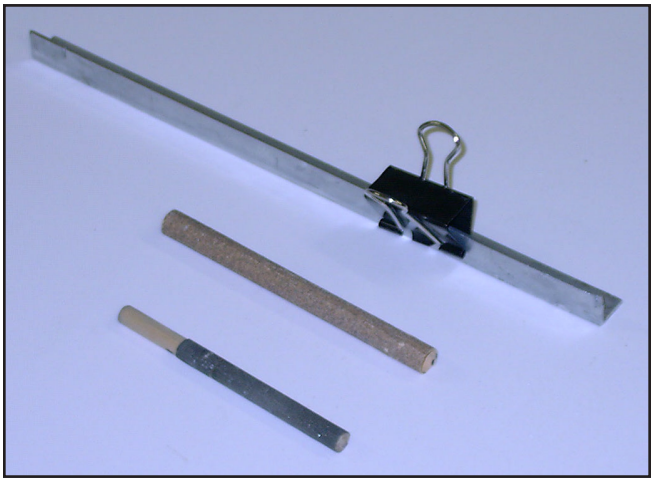
My second favorite tool is a sanding tee. I use an alumium "T" extrusion, but an ordinary block of wood to wrap the paper around would works just fine.



A sanding tee is one of my favorite building tools. A knife is indispensible too.

I've done a few building workshops for some clubs, and I've seen that most people don't have a sanding block. They typically just use a piece of sandpaper layed flat on a table. I've found the sanding block indispencable. I personally don't tape the sandpaper to the block. I just fold it over the sides and grip it tight so that it doesn't slide. Because of this, I can have several grades of sandpaper around at once, and each grit is ready to quickly spring into action when I need it.

One tool that I made myself is by gluing sandpaper around a wood dowel. This tool allows me to sand on the inside of body tubes and centering rings. I try to have several dowels around with different grits of paper on them.



Wood dowels wrapped with sand paper are used to sand the insides of tubes. The aluminum angle is used to draw lines down the sides of tubes, or around the perimeter (the clip is a cheap stop to make sure perimeter lines are straight).

Speaking of the wood dowel, they come in handy for all sorts of applications; smearing glue inside of body tubes, pushing rings into tubes, and even smoothing out fillets. I have

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several sizes of wood dowels, and some smaller pieces of music wire that act as micro dowels. I also use the music wire to unclog the tips of CyA bottles.

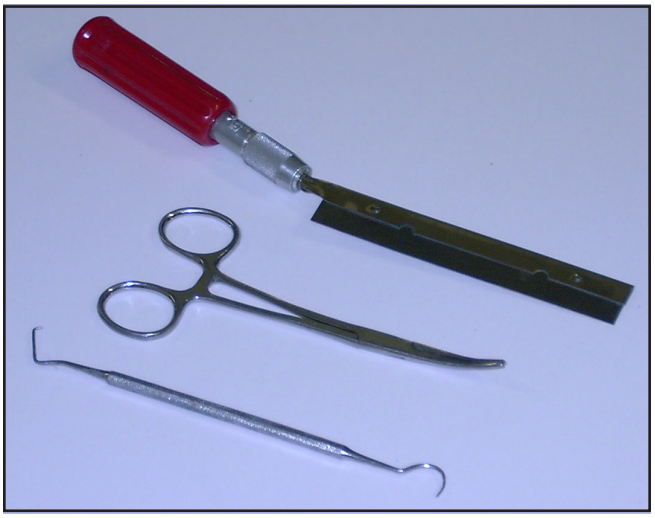
Another indespencible tool of mine isn't in the workshop area. It is my computer and the laser printer. I draw out fin patterns, and then print them out. The come out exactly the size I want them. To use them, I spray the back of the paper with Spray Mount adhesive to stick them onto the balsa wood for cutting out.

A laser printer is a tool that most people forget about. But I use it to create exact fin templates, and patterns for cutting centering rings.

Other tools that I use often:

I found a short piece (12" long) of aluminum channel at a discount store. I use it for drawing lines along body tubes, and for cutting tubes. Besides my sanding Tee, this is probably the second most used tool in my inventory.

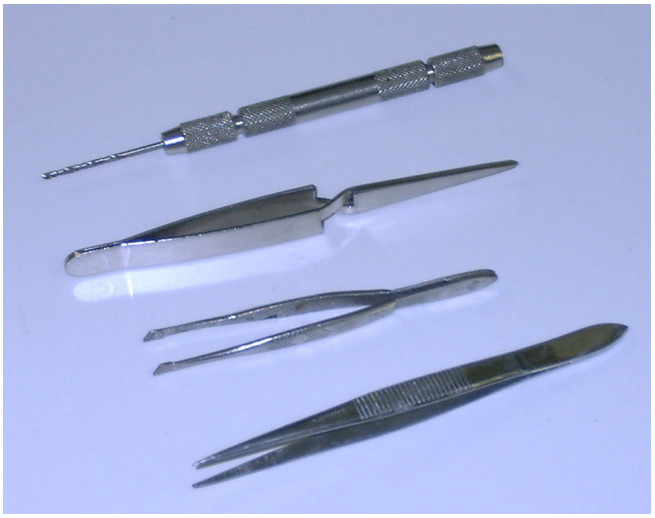
From a flea market, I got some of these old dental tools. My favorite one has a hook at both ends. I use it for scraping, scoring, and spreading out paste and putties. I've also used it to dig things out of the insides of body tubes. It has gotten me out of several jams.



The razor-saw is used to cut thick or dense wood. The clamp is used to dig things out of the inside of tubes. I use the dental pick a lot for holding down edges of small parts when I don't want to glue my fingers to the parts.

For cutting thick wood, a razor saw is the only way to go. I recommend one for you construction bench.

Everyone has tweezers. But I've got several. The two that



My favorite tweezers is the pointy one on the bottom. The small drill comes in handy too.

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get used most often are the sharp pointy ones, and the cross-action variety. The latter gets used as a small clamp. I've stopped many a project in the middle, because I had to hunt down my pointy tweezers. If you have to buy just one, get the pointiest ones you can find.

The only power tool that I use with any regularity is a battery-powered dremel. I like the battery powered variety better than the outlet style because they run at slower speeds. Because of this, I feel I have better control over the cutting, or scraping that I use it for.

A motorized tool comes in handy when you have some serious cutting, sanding, or drilling operations to perform.

To conclude, don't get caught up by thinking you need lots of specialty tools to build model rockets. A few hand-tools can go a long way to making great rockets.

Sometime in the future, I'll have to write about the different types of tapes, glues and solvents that I have in the shop too...

About the Author:

Tim Van Milligan is the owner of Apogee Components (http://www.apogeerockets.com) and the curator of the rocketry education web site: http://www.apogeerockets.com/education. He is also the author of the books: "*Model Rocket Design and Construction*," "*69 Simple Science Fair Projects with Model Rockets: Aeronautics*" and publisher of the FREE e-zine newsletter about model rockets. You can subscribe to the e-zine at the Apogee Components web site, or sending an email to: ezine@apogeerockets.com with "SUBSCRIBE" as the subject line of the message.

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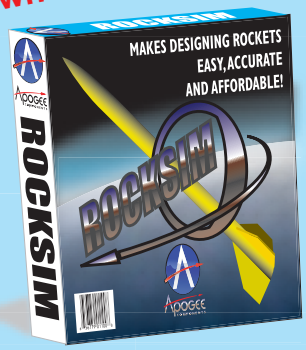

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