

## Project 41 — Bantam Fuel Altered Model/Tim Hoagland

Tim Hoagland sent us a detailed description and photos of his latest model project—the Bantam Fuel Altered (see Figure 1). Following is his write-up, along with the photos, of his most recent build.

“After more than 40 years, I returned to model building when I was 55 years old. I built a lot of models as a kid including, ships, tanks, planes and my favorite, cars. Especially drag cars & hot rods. For some reason I’ve gravitated towards building in 1/25th scale wherein 1mm=1 scale inch. I took that into consideration when ordering my Sherline mill and lathe. I purchased a 5410 mill with DRO about 5 years ago and then bought my lathe (a 4110 w/DRO) a couple years later. Both machines were setup as metric. I would advise anyone that is looking to buy their first machine to take a moment and purchase the Sherline book, *Tabletop Machining* (P/N 5301). It helped me when considering which machine and accessories I wanted to buy. I picked the mill first because my thought process was simply that it was more versatile and also a bit more involved to learn on. If I could master the mill, a lathe would be that much simpler to use. I still reference the book for its useful tips even today.

When I returned to the hobby, I was amazed at how much it had changed. When I was a kid I always thought about how cool it would be to make a certain part or how to modify a kit. I did my best with what was at hand and my budget. As a teenager I won several awards at a few model shows but then I gradually stopped building and life took a different path. Today, there are so many tools and information available that it now seems that anything is truly possible now.

After a few years making a couple cars (I’m slow btw, a typical build for me is about 2 years) I joined a model forum. I saw fantastic cars and some truly great machinists displaying their work. I reached out to one fantastic modeler, Dave Sherman, who was scratch-building everything on his cars. He’s an experienced machinist and I reached out to him to see if he would be willing to mentor me. I was thrilled when he said yes and discovered he only lives 2 hours from my home. He spent several days over a couple months sharing the basics on setup etc. and his experiences on how to make a particular part

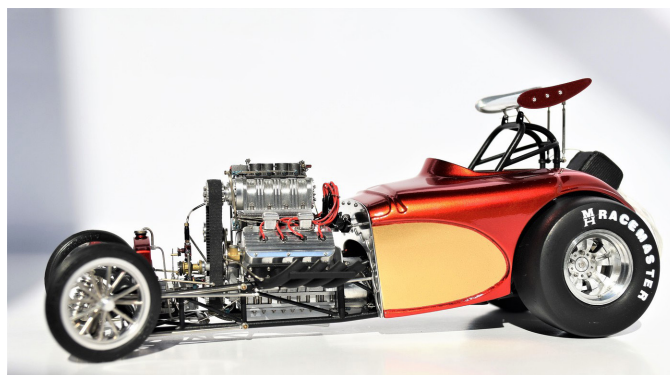


FIGURE 1—The completed Bantam Fuel altered model.

and so forth. I not only learned a lot but made a great friend to this day. This is my 2nd suggestion to any prospective machinist.....seek out an experienced machinist that is willing to mentor you as well. For me, 8 to 12 hours of insights were enough to get me up and running with some confidence. I’ve had my machines for about 5 years now and I have come to the place where my attitude is that “if I can draw it, I can make it”. My drawings are terrible in that they’re “messy” but the important info is there. I draw everything in a 10 to 1 scale. My Sherline equipment has proven to be quite up to the task in making the things I want to do (see Figure 2). I’m always amazed at how small and accurate I can truly make a part at tolerances measured in hundredths of a millimeter.

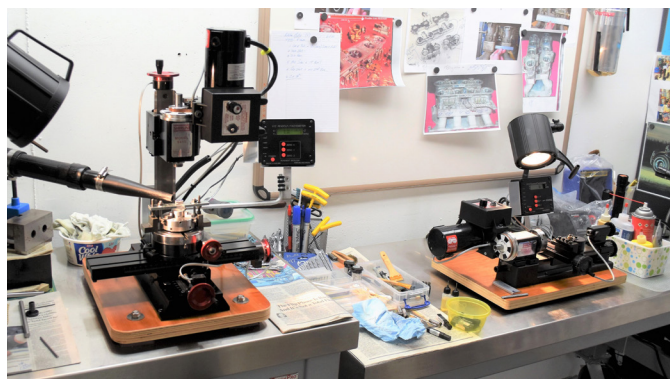
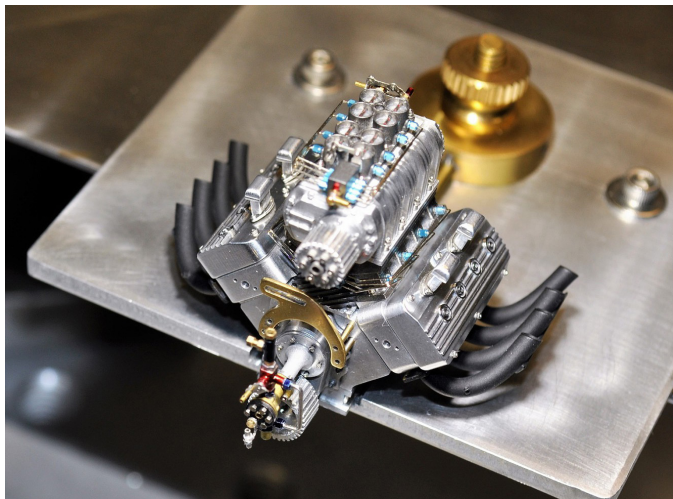


FIGURE 2—Tim's home workshop.

My latest finished build is the Bantam Fuel Altered that you see in the pics. I completed it September, 2019. It took me 2000+ hours over 3 years to make it. The overall length is 6 inches. The body, tires, blower manifold and Lenco transmission are the only things I didn’t scratch-build. The entire engine,

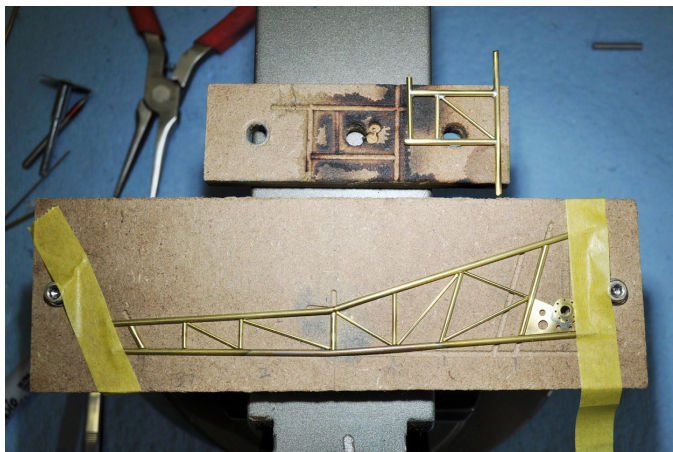


a Donovan 417 (see Figure 3), is machined out of aluminum and brass. When I started the build, I machined an all brass, quick-change rear end that I soldered together and nickel plated. For scale, the engine is only about 1 inch in length.



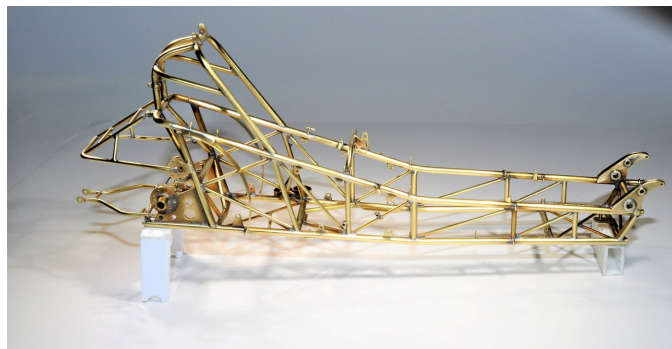
*FIGURE 3—Engine assembly.*

The chassis is all brass and I used my mill to explore different ways of making parts. I love doing that. In one pic you'll notice what looks like a piece of wood but it's actually hard pressed particle board. I drew up a chassis plan and then milled in the various sized grooves to the proper depth with a ball mill.



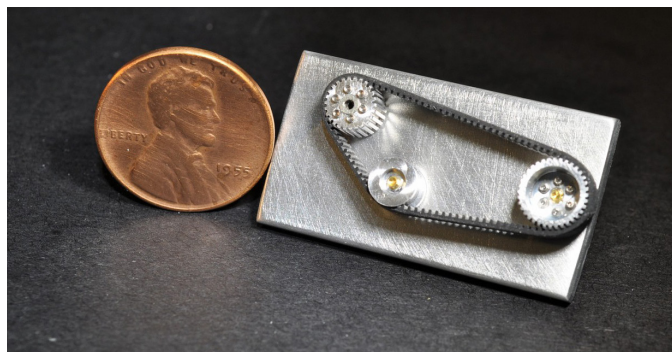
*FIGURE 4—Close-up of Tim's chassis jig.*

Then I cut the correct diameter brass tube & rod and placed them into the milled grooves. After applying flux and solder, I flame soldered the entire chassis in a matter of minutes. I then removed it, put in the other half of the frame into the jig and did the same. In less than half an hour, I had two perfectly matched halves which ensured a dead accurate frame to begin construction. I machined other chassis pieces that I then soldered on to secure the rear end and front axle.

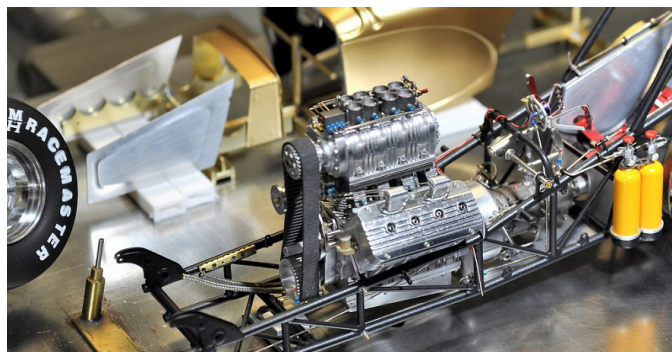


*FIGURE 5—The finished chassis.*

When you look at the blower pulleys, I machined those on my rotary table which I have on the tilt table fixture (see Figure 6). Each groove was cut with a .22mm jeweler's cut-off disc. I admit it was time consuming but honestly, in my scale, I've not seen another machined set that are as accurate. I was very pleased when I put them on the engine and saw the result for the first time. Please be sure to check out the 9 rib supercharger on the car (see Figure 7). This one was a head scratcher at first but after some experimenting I hit upon a way to get the thin ribs and radius that I wanted. The rear bearing case cover was challenging but fun too. As a whole, it was one of the most satisfying parts of the build.



*FIGURE 6—Detail of the blower pulleys.*



*FIGURE 7—Detail of the supercharger.*

The wheels were machined on the mill and lathe (see Figure 8) with some insights from my friend Dave. I



could go on and on but when you look at the car you'll discover many things that were machined. I'd like to share that I've worked with aluminum, brass, steel, Renshape, and even titanium on my mill and lathe.



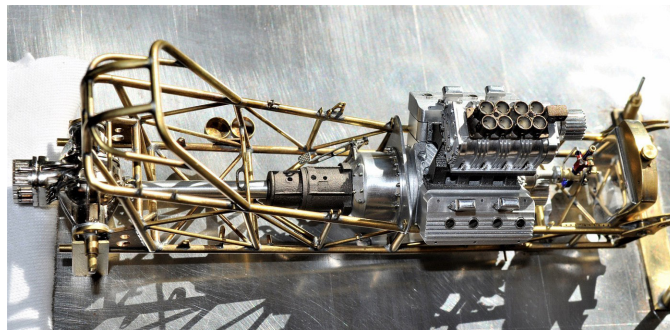
*FIGURE 8—Machined wheel examples.*

I guess the thing that has made me a die-hard customer has been the entire experience. From the information on your website, books and most importantly, the staff at Sherline, I have a resource that is second to none. The interchangeability of the accessories and the sheer breadth of those accessories make it possible for me to make just about anything. If you can imagine it, I'm sure one can figure out how to make it. In closing, I'd share that Made in America matters to me. The quality of your equipment has served me very well. I've said before that Sherline might not be the cheapest, but for VALUE, you can't do better. Your value proposition is simply price and quality but along with that one gets the vast knowledge, experience and product offerings that no one else has."

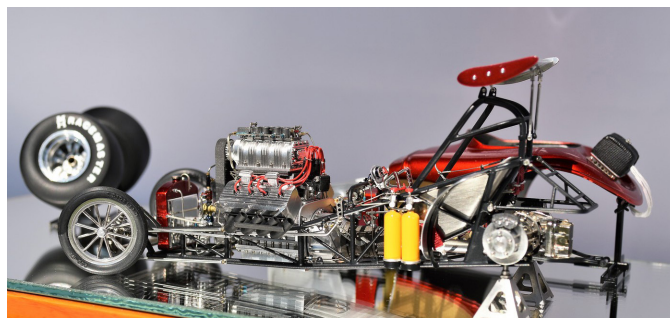
Respectfully,  
Tim Hoagland



*FIGURE 9—Close-up of the brass, quick-change rear end.*



*FIGURE 10—Under construction.*



*FIGURE 11—Assembly stage.*



*FIGURE 12—Completed assembly.*