



## Scale Pursuit Models E-Newsletter

Volume 2

### **Hello Again Scale enthusiasts,**

In this second issue of our E-Newsletter we will be share with you some of our lessons learned and development work that has contributed towards our production T-34C kit. Few, if any, manufacturers provide a glimpse into their research and development process but we want to do this so you can better understand our thought process and priorities while learning what we learned along the path towards product development. Creating a new modeling concept brought many discoveries – so let's roll.

### **T-34...Simple as Alpha, Bravo or Charlie**

One of our earliest discoveries was that the T-34 is a popular model, very popular – maybe too popular with TopFlight's and Hanger Nine's decision to offer Mentor products. Who could blame them – this cute little military trainer transitions well into RC scale. Early in our development we were preparing to offer the A/B version of the Mentor but during this time other T-34 A/B models came into the marketplace. Rats...they beat us to it! Still wanting to pursue this subject, the "Charlie" version (T-34C) became the solution for us and a better one at that. The Turbo Mentor has one major design advantage over the A/B's at that is its longer nose section. The Charlie's nose is almost 5" longer (at 1:4.5 scale) than the A/B and that equates to an easier to balance model. Another difference the Charlie brings is interesting features like the strakes forward of the horizontal stabilizers, big ventral fins and some mean looking exhaust stacks. We hope you will agree that the T-34C promises to stand apart from other Mentors in the pits and in the air. We think of the Charlie as the A/B's younger brother with an attitude.



### **Where Is That CG?**

Another discovery for us was the prototype's CG location. Anticipating the usual tail heavy situation, we planned for the radio gear to be as far forward as possible. This worked out well as the big clam shell cowl provides easy access to the Rx, batteries, retract valve, fuel fill, air fill, etc. As it turned out, most of this gear had to be moved elsewhere as the model was nose heavy – we underestimated benefit of that longer nose. A few modifications later, the CG found its proper place with no additional weight being necessary. The Rx found a new home in the wing saddle and the air fill valve and pressure gauge found residency behind the baggage door next to the air tanks. Obviously, engine selection will play a large part in this balancing “act.” To help this process, we've now incorporated three locations in the fuse that can accommodate your on-board battery(ies); the wing saddle, nose wheel cavity or behind the fire wall.



### **To Rivet or Not To Rivet....**

This next insight will give you a look into our vacuum forming process. We knew early on that the Turbo Mentor's corrugated surface details needed to be molded into the polycarbonate skin AND they had to look scale. Most of our skins are

formed over female molds so that we can get the crispest detail possible. This works great for panel line and rivet detail but, as we learned, it does not produce the best corrugations. This is because, on a female mold, the corrugations would be a raised ridge which requires that during the forming process, the plastic first drape over the ridge top and then be pushed into the corners to form the corrugation's edge. We were not getting good edge definition so our corrugations just did not look right. The solution was to use a male mold. In this case, the mold's corrugations are troughs that allow the plastic to first contact the edge and then pushed into the depression. Finally, crisp edges! But there was a price to pay for this. A male mold does not give convincing rivet detail and for that reason we elected to not mold rivets on surfaces that have corrugations. We think the corrugations are more important to replicate accurately than rivets. Besides, the physical process of adding rivet detail to a model is easy and fun and is practically the rite of passage of the new scale modeler. Our instruction manual will cover the glue drop technique of adding rivets. Here is a chance for the guy that has never done rivets before to do them to only a limited number of areas on a model (we did the rest of the model for ya!).



### **Too Much Of a Good Thing?**

One last epiphany to leave you with. You may not know that we initially planned to make the T-34C cowl out of polycarbonate. Our prototype has an all polycarbonate cowl. Molded out of .040" thick sheet, it is certainly tough enough

for the job. However, polycarbonate's attribute for flexibility (without cracking) works against the cowl's requirement for stiffness in key areas. We found the assembly of the three separately molded, lower cowl pieces (two sides and the front intakes) was cumbersome and difficult to get properly aligned (again, because the pieces would flex too much). If we had difficulty getting it to work, then we knew others would too – so we scraped the idea and our molds in favor of a one piece fiberglass cowl. Even though it is much more time consuming to produce (and therefore more expensive), the fiberglass allows for a much easier installation. We thought that would be appreciated. Still, a see through, polycarbonate cowl would have been too cool.



**Coming in the next E-Newsletter:**

Look for a flight report (more in-flight pictures and video too) and detail on the Revolution 50 engine's performance!