

Documenting Your Model for a Scale Contest

By: Bob Ripley

You have put hundreds of hours into your latest scale model and boy does it look good. You say to yourself, "Self, I am going to compete at the NATS, or Mint Julep, or Top Gun (insert whatever contest you like) with this airplane". Great! The folks in the scale contest community are ready to welcome you with open arms. However, you need to prepare, and depending on which contest you will be attending and what category, you may or may not need to have a documentation package in hand for the judges to evaluate your model for the static portion of the event.

Where do I start?

Get a copy of the rules. Sounds simple enough but it may surprise you how many first time contestants show up at a scale contest with no idea of what they are supposed to do, let alone what is expected of them. I have personally seen this happen so many times over the years that I have lost count. All of the scale contests that I know of follow the same basic format, static judging first followed by the flight judging. Yes, Fun Scale (AMA class 520) doesn't really have a static portion in that event, but you do have to show a picture of the full scale version of the model that you will be flying to get those extra 5 points. It doesn't have to be the same color scheme or even have the same markings but if you are flying a P-51 Mustang you need to have a three view, or picture, or photo on hand of a P-51 Mustang to show the judges.

This discussion is based on AMA Classes 511 (**RC Sportsman Scale**), 512 (**RC Expert Sport Scale**), 513 (**RC Sportsman/Expert Combined**), 515 (**RC Designer Scale**), 522 (**RC Team Scale**), and 523 (**RC Open Scale**) where the contest is broken down into two parts, static and flight judging. I am only going to address the static portion in this paper. Other higher level contests such as Scale Masters and Top Gun have rules that vary from the AMAs, usually from the judging and flight portion of the contest. I suggest that you download the rules from their website to study before you compete.

Documents to Prove the Accuracy of your Model

Ideally you want to gather every bit of information about your subject that you can BEFORE you cut the first piece of balsa wood. This is what separates the modeler that builds to maximize their point potential at a contest from an individual that built a nice scale model and wants to enter it in a contest. When I first started out I did the later, but when I built my T-34B I purposely chose this aircraft because I wanted to build a plane that had the attributes to garner the most points in competition up to and including the Scale Masters level of competition.

Research the full scale version of your aircraft and gather as much information about it as possible. Find as many different 3-views, photos, drawings, color chips and written

descriptions of your plane as you can. Several folks, including yours truly will buy a plastic model kit to aid in the quest for subject matter documentation. You are not going to use all of it, remember you only have eight pages to document your aircraft; instead you are going to pick and choose out of all of your materials what will be used in your documentation package.

Organize your Documentation

You are going to have three to four judges plus maybe a chief judge sitting across from or walking around your pride and joy. Here are two of Ripley's rules to remember.

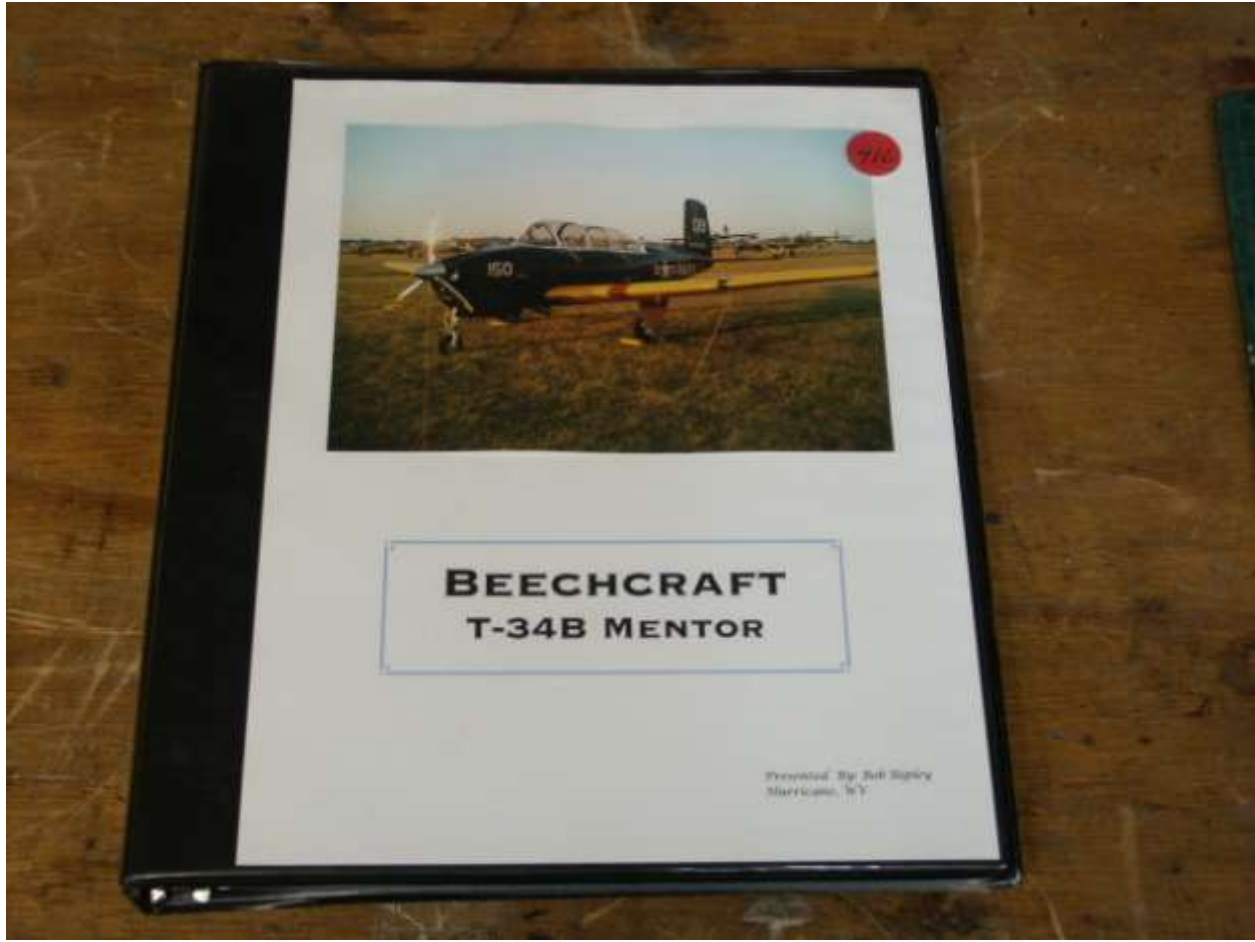
- Don't confuse the judges
- Don't let a judge use his or her imagination unguided.

Each judge has a job. There is the "Accuracy of Outline" judge, a "Color and Markings" judge (sometimes they have one judge for each) and thirdly, a "Craftsmanship" judge. Organize your documentation package so each judge can find what he or she needs to evaluate your model easily. I arrange my documentation binder by sections. The 3-view is one section, "Accuracy of Outline" photos in the second, and "Color and Markings" photos in the third. Also, if a picture or photo does not pertain exactly to the model that the judges see before them, do not put it in your documentation package. You are putting yourself at risk for confusing the judges. By nature, if the judge gets confused or has a question in his mind they downgrade. I have seen contestants walk up to the judges after they have placed their model on the judging table, spend 10 minutes pointing out what pictures to use in their documentation package to evaluate this or that, pages flipping everywhere and when the contestant walks back to his model the judges can't remember anything except the last 30 seconds of this individual's dissertation. With the look of bewilderment on their faces the judges try to figure out what is before them in relation to the model across from them. That contestant may have put himself at risk for receiving a lower static score than if he had organized his documentation binder so that each judge knows where to go to find the information that he or she needs to evaluate the model 15' across from them.

Dissections of my Presentation Binder

At the 2014 Scale Masters my T-34B took the award for best documentation. To say the least I was surprised and honored. Before I get into a page by page description of what I did and why I did it, I cannot take total credit for my thought process. It is not something that came to me in a dream one night. Instead the way that I document a model developed over twenty plus years and is based on what worked or didn't work before. More importantly, my way of preparing a documentation package came from best practices that I adopted from others. Also, it didn't hurt that I have been a static and flight judge for some time so I have seen all sorts of documentation packages.

The Cover

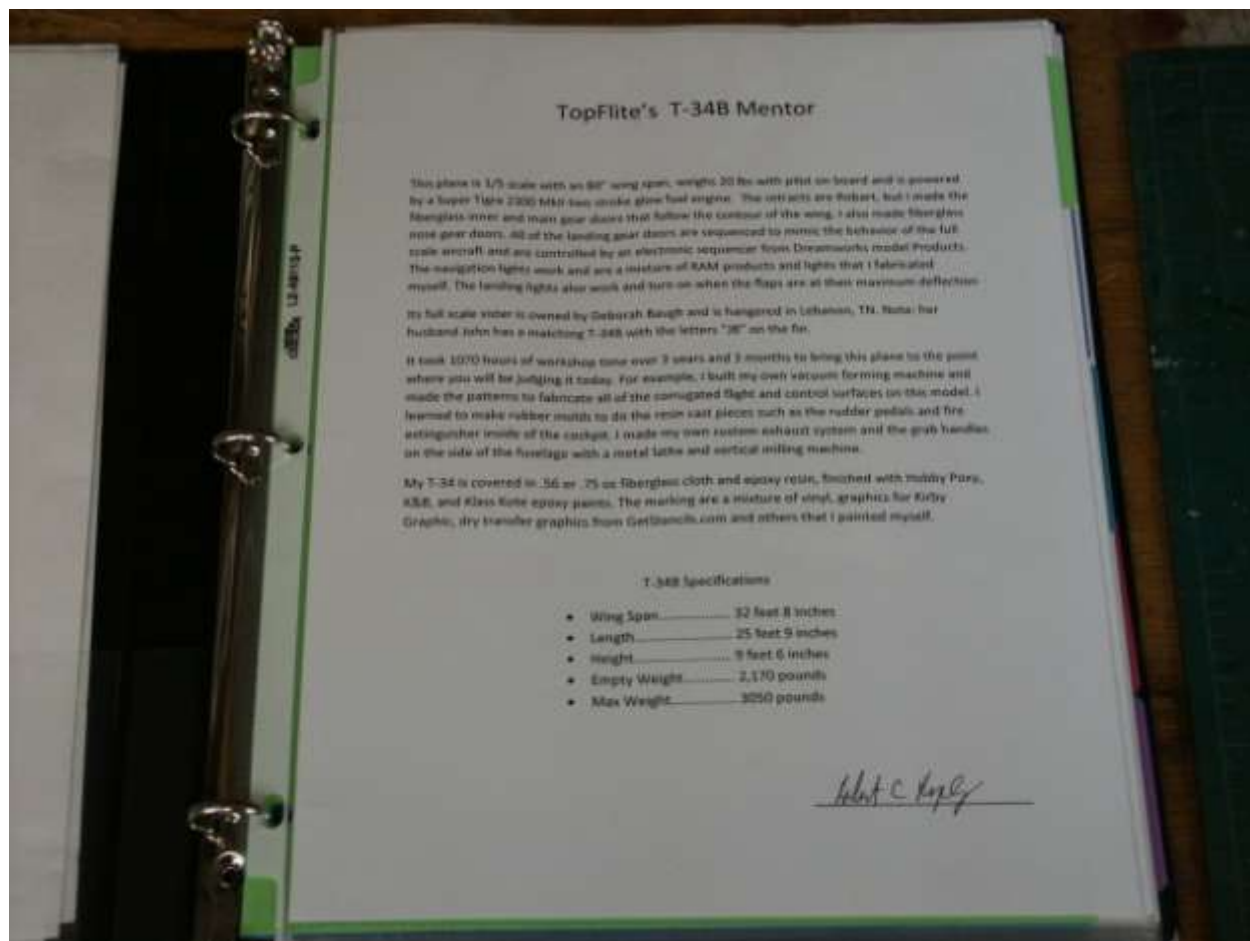


As you can see I use a three ring binder to hold and organize my documentation package. What I want you to notice is the T-34B on the cover is a picture of the full scale aircraft that I modeled. My point is this; use a drawing or photo of the exact airplane that you modeled. If you are documenting a P-47D do not put a generic picture of a P-47 on the cover of your documentation package. There is a good chance that you will confuse at least one of the judges if you do. If you don't have a suitable cover picture or photo use a national insignia (if it is a warbird) with the title **Republic P-47D** underneath. No confusion there. It tells the judges that this documentation package is for a P-47D and in front of them they are looking at a P-47D.

As I mentioned earlier I purposely chose to do a T-34B for contest work for several reasons and one big one was that there was a pretty good chance that I could find a flying T-34B hangered close to me, which I did. I called the owner and drove to Tennessee where I met with her and took about 200 pictures of her airplane. My documentation for color and markings was now completely covered.

Page One

One of your eight pages in your documentation package has to be used to declare that you are the builder of the model, except for AMA Class 523 (RC Open Scale). Scale Masters and Top Gun have similar categories where there is no *"builder of the model"* rule. Here you can tell the judges a little bit about your model but what the judges are interested in, is what you made yourself verses what you bought. You may also find that at some contests you have to sign a *"Builder of the Model Declaration"* form. If you made your own retractable landing gear from scratch or hand stitched each wing rib on your Fokker DR.I, this is where you want to highlight that for the judges. It will help you with your craftsmanship points. Here is the first page of my documentation package. You probably can't read it from the picture so the text from that page follows.



TopFlite's T-34B Mentor

This plane is bit bigger than 1/5 scale with an 80" wing span, weighs 20 lbs with pilot on board and is powered by a Super Tigre 2300 MkII two stroke glow fuel engine. The retracts are Robart, but I made the fiberglass inner and main gear doors that follow the contour of the wing. I also made fiberglass nose gear doors. All of the landing gear doors are sequenced to mimic the behavior of the full scale aircraft and are controlled by an electronic sequencer from Dreamworks model Products. The navigation lights work and are a mixture of RAM products and lights that I fabricated myself. The landing lights also work and turn on when the flaps are at their maximum deflection

Its full scale sister is owned by Deborah Baugh and is hangered in Lebanon, TN. Note: her husband John has a matching T-34B with the letters "JB" on the fin.

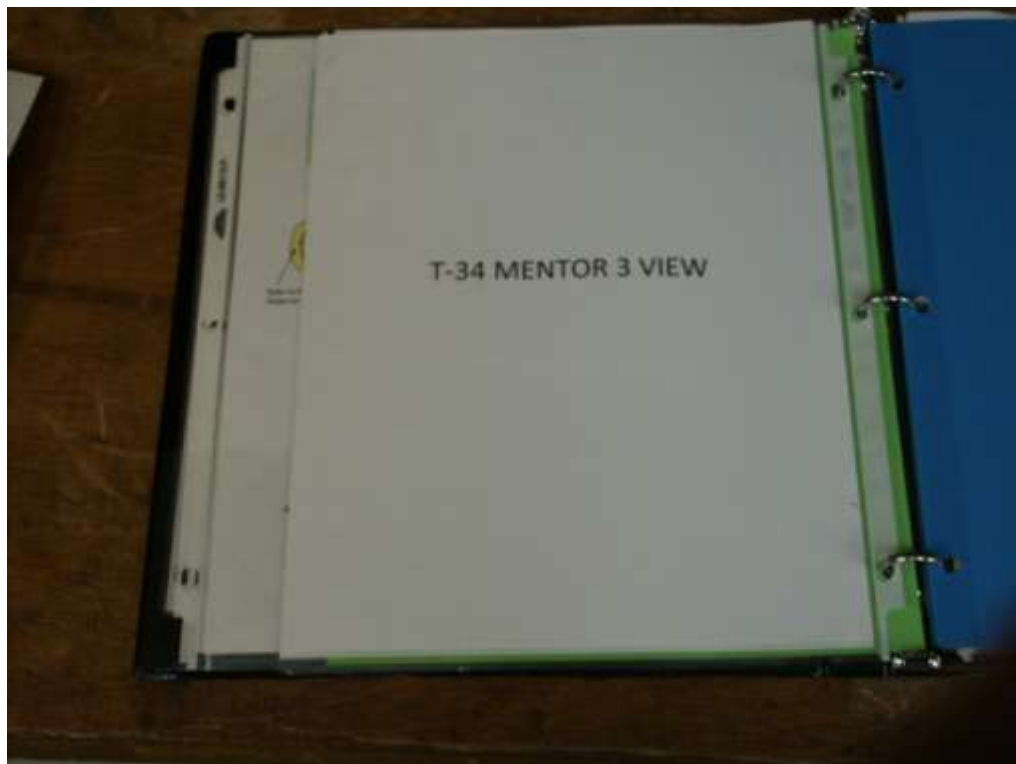
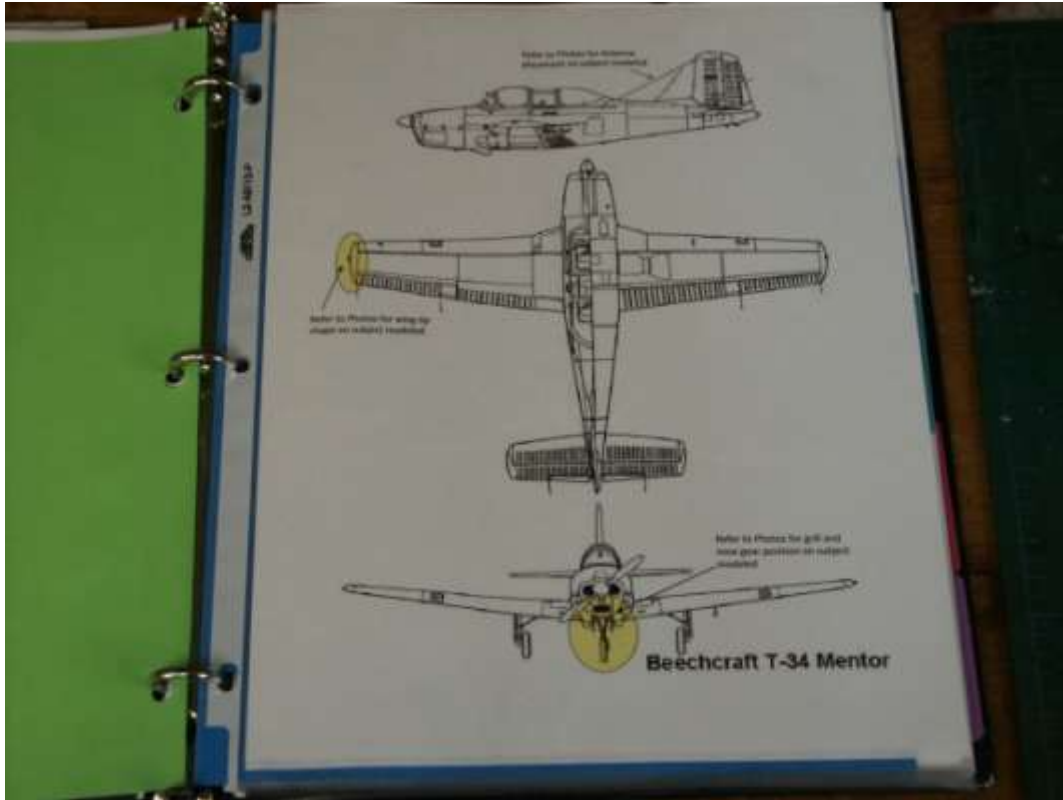
It took 1070 hours of workshop time over 3 years and 3 months to bring this plane to the point where you will be judging it today. For example, I built my own vacuum forming machine and made the patterns to fabricate all of the corrugated flight and control surfaces on this model. I learned to make rubber molds to do the resin cast pieces such as the rudder pedals and fire extinguisher inside of the cockpit. I made my own custom exhaust system and the grab handles on the side of the fuselage with a metal lathe and vertical milling machine.

My T-34 is covered in .56 or .75 oz fiberglass cloth and epoxy resin, finished with Hobby Pox, K&B, and Klass Kote epoxy paints. The marking are a mixture of vinyl, graphics for Kirby Graphic, dry transfer graphics from GetStencils.com and others that I painted myself.

T-34B Specifications

- Wing Span..... 32 feet 8 inches
 - Length..... 25 feet 9 inches
 - Height..... 9 feet 6 inches
 - Empty Weight..... 2,170 pounds
 - Max Weight..... 3050 pounds
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Page Two -The 3 View

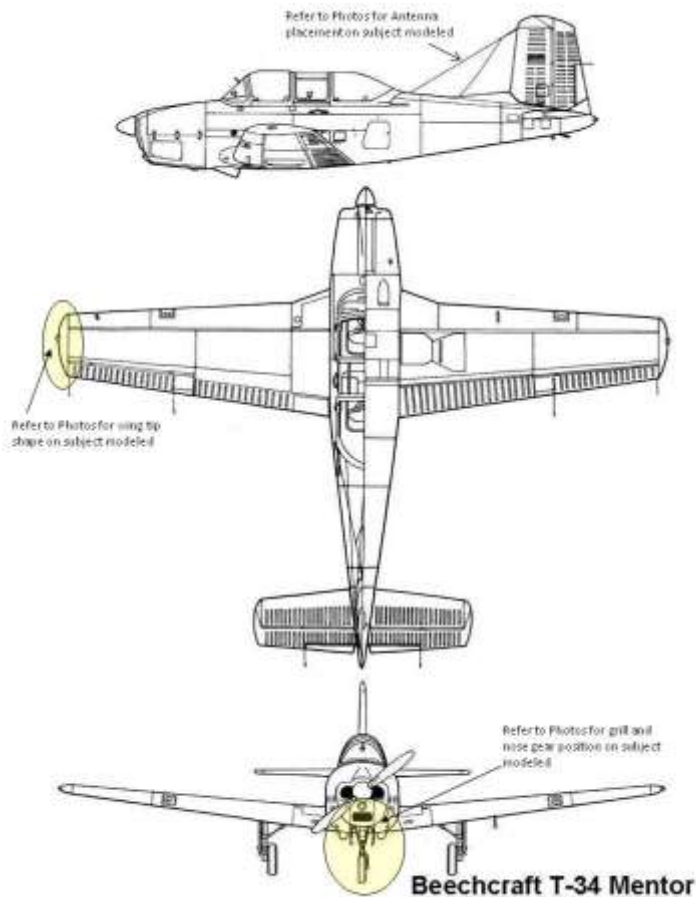


Three views can be notoriously inaccurate and the published 3-views for the T-34B is probably one of the worst. Everyone that I have seen shows the nose wheel and strut in line with the spinner but, in fact the nose gear is off set to the left of the spinner. Another

discrepancy between the 3-view and my aircraft is the owner of the T-34 Mentor that I modeled replaced the wing tips on her plane with wing tips from a Beechcraft Bonanza. She said that it made the T-34 more stable in roll during long cross country flights. Makes sense seeing that the T-34 was designed as a primary trainer with aerobatic capabilities. They wanted it to be easy to fly but not too easy.

To bring those differences to the judge's attention, notice that I circled those areas in yellow and told the judge where to look to see the true comparison for "Accuracy of Outline" between the full scale and my model. Remember Ripley's rule number two: Don't let your judge use his imagination unguided. I had about six different 3-views to pick from, one of which I selected to include in my documentation binder. I chose the one that showed enough detail to give the judges what they needed to determine "Accuracy of Outline" between my model, the 3-view, and the photos without giving them too much detail which could clutter up the drawing. Note: I use the back of the 3-view page to mark that section. Similarly, I do that with the other sections.

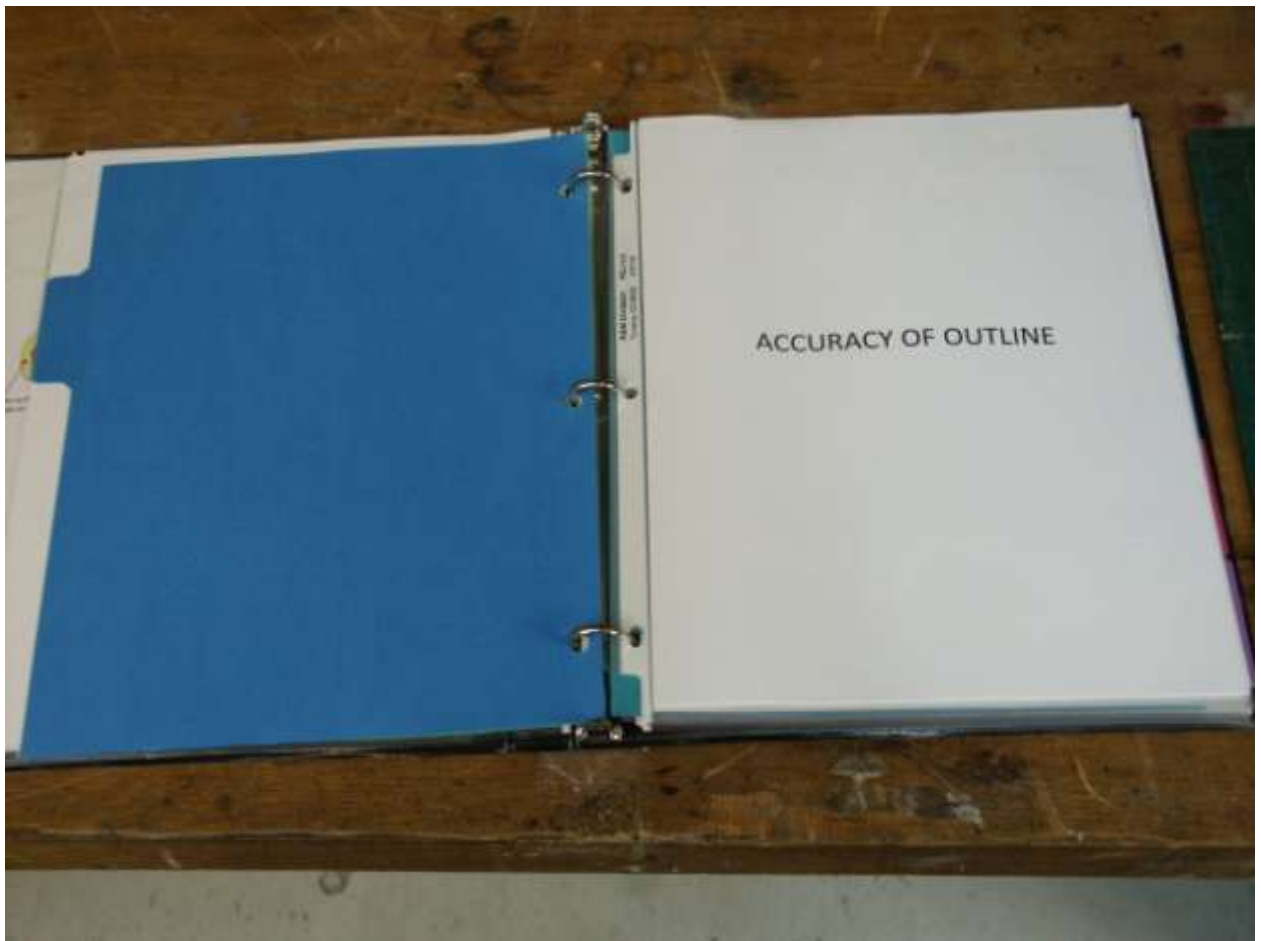
Back to my point about getting your documentation first before you build. You may have built a beautiful and well-crafted Corsair but if doesn't match your 3-view, downgrades are coming your way.



Pages 3-5; Accuracy of Outline photos

This is where you get to play "hide and seek" with the judges. You want to emphasize the aspects of your model that match the full scale exactly and deemphasize the areas that are a problem area on your aircraft. For example, note that that I have no cross braces on the main gear of my T-34 while if you look on the 3-view and hard enough at the photos you can see that they are there. The TopFlite T-34 is too small to duplicate that detail and have reliable working retractable landing gear so I did not try to make them. I'm not hiding anything in my documentation. I'm just not making that discrepancy blatantly obvious.

On the other hand notice that I clearly show pictures of the offset nose gear and the squared off wing tips from the Beech Bonanza. Here is one more subtle thing that I do when I set up my model for static judging. See in the picture that the front and rear canopy sections are shown in the open position? Guess how I display my T-34? Both sections are shown in the open position during static scoring. Does it help? I think that it does because it shows the craftsmanship judge that I made the extra effort to make both canopy sections functional.

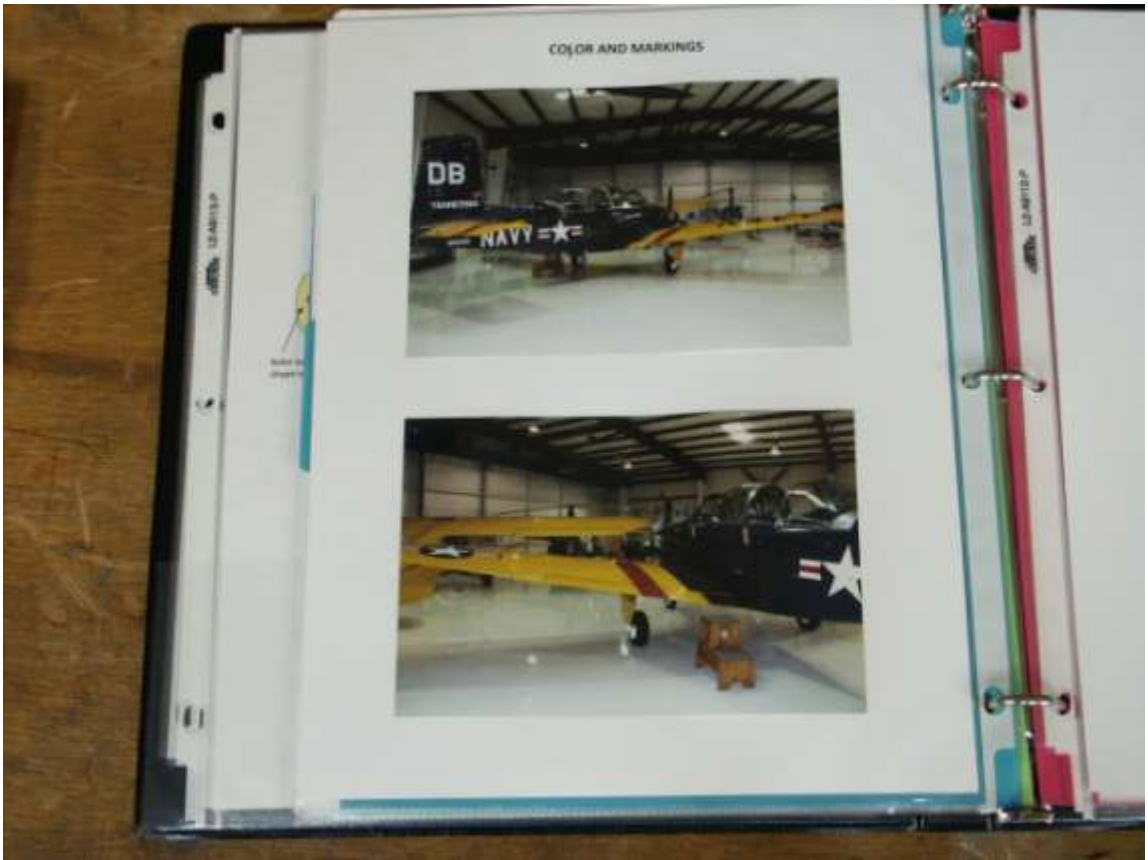




Pages 6-8; Color and Markings Photos



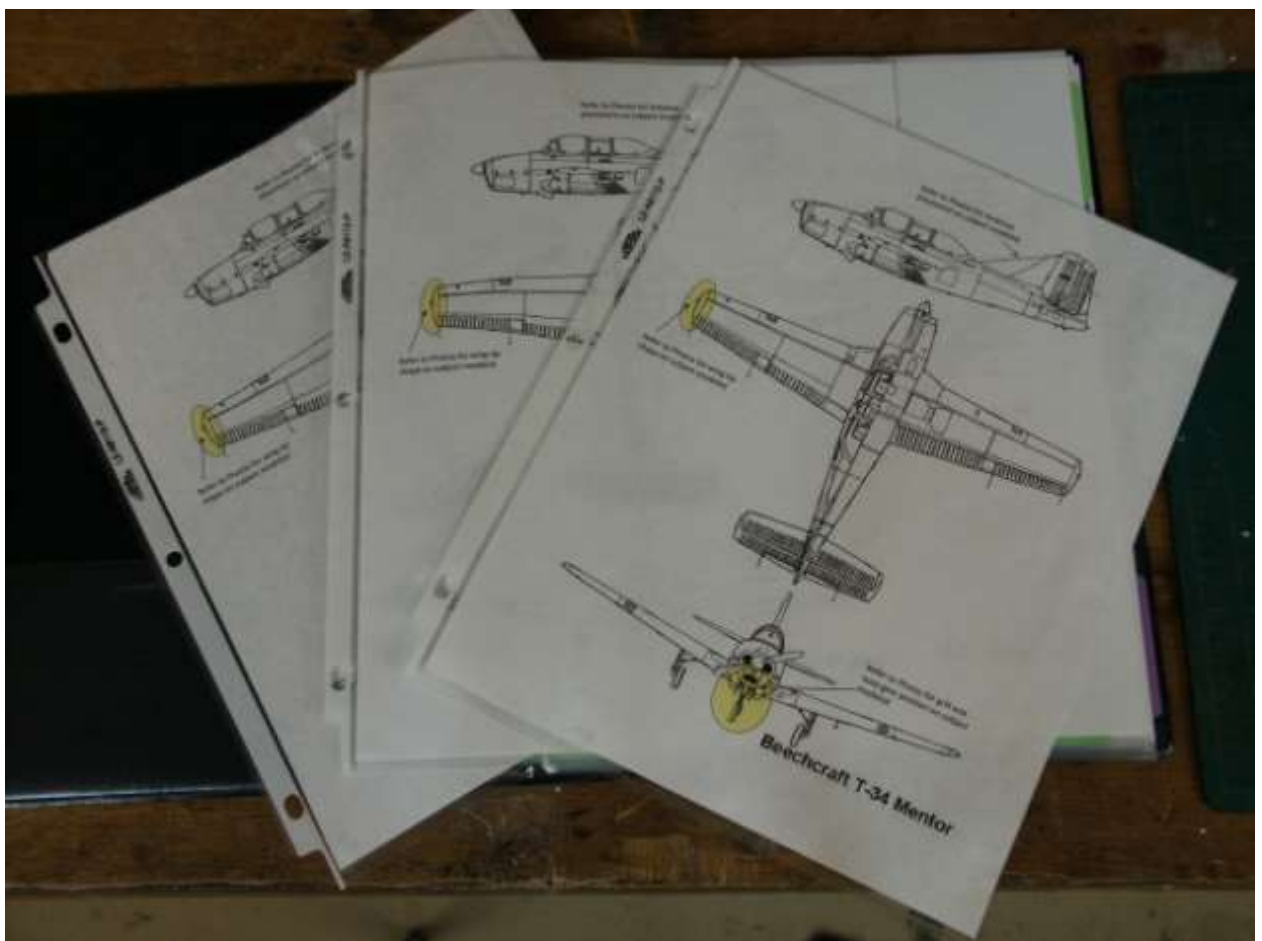
I debated long and hard about going with just color photos or color chips. The owner had some of the color chips that were used to paint her plane but not all of them. She did have the companies' names and addresses from where the paints were obtained. After several unsuccessful attempts to contact these paint manufactures by email and phone I gave up and went with color photos. In a contest that is perfectly fine. One doesn't trump the other but be careful. If you are going with photos make sure that the color in your photographs match the color on your model. The photos of the Navy Blue color on the T-34's fuselage looked different depending if I used a flash or not. Some pictures the blue looked like the color chip that I had. Other pictures, the blue was much lighter in color. I picked a picture that showed the best rendition of the fuselage color then mixed my paint to match. The same was done for the yellow wings, the red strips etc. Then I selected pictures for my "Color and Marking" section to best match the colors on my model.



For those where only black and white photos exist for the subject being modeled your choices are limited to color chips from a reliable source or a detailed written description, also from a reliable source. Generally, WWII aircraft are easier to document than WWI. You might see now how guys that build scale models to win contest are thinking strategically to minimize these pit falls.

Extra 3-views

Besides the 3-view in my documentation binder I have three extra copies available so that each judge has one to aid in the assessment of my airplane. These do not count as pages towards your documentation limit of 8 pages and are allowed per AMA, Scale Masters and even Top Gun rules, if I am not mistaken.



Summary

- If at all possible research and document first then build and finish your model to match your documentation.
- Remember Ripley's rules:
 - Don't confuse the judges. If the picture, photo, color chip, or drawing doesn't pertain precisely to the model that they see before them. Don't use it.
 - Don't let a judge use his or her imagination unguided. Take them by the hand (figuratively) and guide them through your documentation.
- Organize your documentation
- Choose your 3-view wisely. Give the judges enough detail to assess your model. They don't need to see each and every rivet on the 3-view (which, by the way, they can't see from 15' away on your model anyway).
- Note any discrepancies between the three view and your model by means of photograph documentation
- Color chips and color photos are like the Queen of Hearts and the Queen of Diamonds. One doesn't trump the other. Choose one or the other and make sure that whichever you go with matches the colors on your aircraft.

Lastly, have fun. RC scale modeling is an aspect of the hobby that is supposed to challenge you in a good way. Personally, I love the research and bringing a scale model to life in my workshop. Taking it to a contest to compete against my peers is icing on the cake.

Links to AMA, Scale Masters, an Top Gun competition rules.

<http://www.modelaircraft.org/files/2015-2016RCScale.pdf>

<http://www.usscalemasters.org/forumsmf2/index.php?action=dldir;sa=details;lid=127>

<http://www.franktiano.com/TopGun/Top%20Gun%20Rulebook%202013.pdf>

Pictures of my TopFlite T-34B

