

EDITORIAL

By Kurt Bengtson

I have read recently from several sources that the young today are not going in for our hobby. Model kits are not even sold at air museums because they don't sell. Kids are not interested partly due to the fact that today everything is on a fast cycle. Long-term project like building a kit don't hold the interest as much as a video game or fast paced movie. The fact is that life is a long-term project and long-term projects need to be available. Does a painter have to finish his masterpiece in one day for it to be satisfying? Is painting a dying art form? I have heard from several people that they are looking for something to do in their spare time that gets their minds off the fast stressful world we live in at work. They also tell me that their modeling is something that they can share with their kids. Modeling is well suited for these needs.

I returned to modeling after deciding that my life had too many negative factors. I wanted to see something tangible develop instead of falling asleep in front of the TV. Modeling became an activity that I looked forward to during those stressful days. So in my view, the need is there and the opportunity is to provide the model kits that get people excited. I want to explore new and faster ways of designing/building so kids can see progress at a pace intermediate from the ARF and the old scratch build. Designs and building techniques that result in successful flying models are top priorities for me. WWI models have a particularly important role here. They fly slowly, making the local school football field and parks suitable flying sites. They are always attention grabbers, since they are so beautiful. They represent a currently overlooked era of world history. If this interest can be harnessed to get more folks modeling then perhaps we can keep our hobby strong for years to come.

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scale". Most of our offerings are in this category. A good example of the type is our 36" Fokker DVII.

Most sport scale model representations of the Fokker miss several important features that detract from the scale accuracy of the model. The nose, for example, is rounded at the bottom whereas most models have a flat-bottomed section. It is easier to leave the nose flat but by substituting a section of soft balsa, our model can be sanded to the proper shape.

Another area is the wing. The top wing on the aircraft is level. Again modelers, usually add dihedral for rudder only controls. Our model uses functional ailerons but also includes a modest dihedral for rudder only controls. There difference is that the wing shape is tapered so that the wing bottom

represents a dihedral and this can be exploited so as to not add much top wing tip dihedral.

Other changes for scale commonly found are that the fuselage is lengthened to make the rudder and elevator more responsive. These surfaces are also enlarged for the same reason. My belief is that the early models for free flight rubber power required this change for better non-



PHOTO AND MODEL BY BERT AYRES

THOUGHTS ON FOKKER DVII MODEL

By Kurt Bengtson

AerodromeRC strives to supply designs that are as close as possible to scale authenticity without sacrificing ease of building and flight performance. There is a spectrum of scale modeling and museum scale is at the one end and sport scale at the other. R/C flyers do not have many choices in between. This middle ground is often called "stand off

controlled flight. These ideas were then carried over into R/C designs. Most R/C pilots can handle the controls necessary with little difficulty. Modern computer radios have exponential response for servo control, making little reason for this modification. Our model has original flight surfaces and original fuselage length.

Another feature of our model is the cabane strut-mounting scheme. The fuselage side panels have laser cut holes that precisely locate the wooden cabane struts. They are backed by 1/32" plywood and sealed with epoxy. This mechanism allows wooden struts sanded to proper shape to be used. The triangular nature of the Fokker DVII cabane system makes the wooden structure very strong. Mode other



PHOTO AND MODEL BY BERT AYRES

models require the modeler to fabricate a complex music wire system which is frustrating and error prone. The error most commonly encountered is improper wing incidence or worse a lopsided model. Making the wooden struts in pairs and using the outer IP struts to hold the top wing in place means that the cabane struts can be made to fit perfectly.

The under wing between the wheels is often over looked in Fokker DVII kits The airfoil there is significant and does

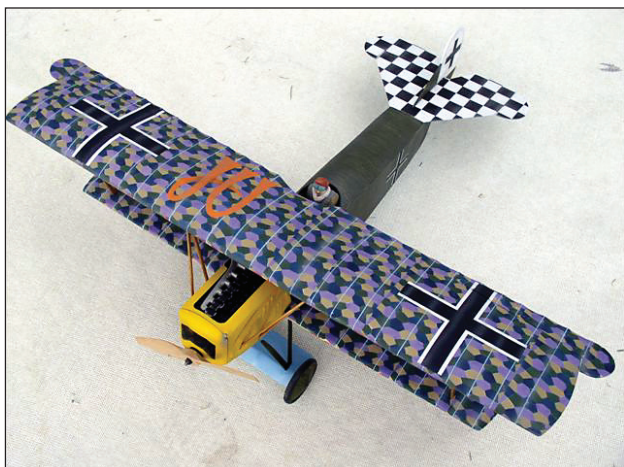


PHOTO AND MODEL BY BERT AYRES



PHOTO AND MODEL BY RODD PERIN

provide some lift. Our model has a fully represented under wing structure.

Dummy engines and machine guns are usually ignored in kits. We provide a series of laser cut parts to allow a reasonable representation to be fabricated without going to the labor of machining plastic parts. From the air of reasonable viewing distance, these assemblies add a significant detail with minimum effort.

As an additional feature, we provide materials for scale size wheels using balsa and plywood construction. Neoprene foam tires are also supplied. A paper pattern is available (along with decal outlines and lozenge patterns) on line for making card stock wheel covers with spoke impressions.

DID YOU KNOW?

The Fokker triplane's service life was cut short by water soluble glue used in the construction of the wings. They were supposed to be waterproofed by lacquering the joints. This procedure was not done and after sitting out in the rain, the wings often failed, unfortunately in flight. Fokker was required to retrofit all aircraft and by the time the work was finished, some months later, the aircraft was obsolete.

**BUILDING TIP:
SOLDERING SUBSTITUTION**

By Kurt Bengtson

This month's building tip is replacing solder with epoxy for the attachment of ring terminals to cabane struts. In my experience, this is one area where hidden flaws in complete soldering can make a model fail. This can happen in spite of the appearance of a good solder joint. Solder, contrary to popular belief, is not very strong and it can crack and it does corrode. Further, the difficulty in getting a good solder joint sometimes deters beginning modelers from tackling a project with the feature. I took a 6" piece of 1/16" music wire, a ring terminal and 5 minute epoxy. The fit was snug and the epoxy was mixed well. I roughened the music wire with sandpaper. There was 0.15" of music wire in the terminal sleeve. After 5 hours at 75 degrees temperature, I fashioned a hook on the other end of the music wire and attached a 5-gallon bucket. I then added water to the bucket in 5-pound intervals and lifted the bucket with the eyelet. I filled the bucket entirely with no signs whatsoever that the epoxy was failing. The end of the test was 35 pounds. That is 560 ounces of weight. The actual failing weight was not reached. Considering that this load carrying capability is only for one joint, consider that for four cabane joints the total weight could be 2240 oz. or 140 pounds. That is a factor of 100 times the weight of the average model using 1/16" music wire.

It is important to use fresh epoxy and mix well. Uneven mixing of the two parts of epoxy is the most common mistake. Spend a minute vigorously mixing the stuff. Also, old epoxy loses its strength so don't worry about making up too much. If very small amounts are used, it is very easy to get the proportions wrong.

I use a piece of packing tape adhered to the table for mixing

my epoxy. After it sets, I peel off the tape and throw it all away making cleanup a breeze. And remember, epoxy sets by a chemical reaction, which means that it is temperature sensitive. Don't do your work in a cold room and expect your epoxy to set per instructions. That goes for hot areas too. Nothing is more frustrating than to have the epoxy set prematurely and before you have the wings in proper alignment. Another area to be mindful of is that epoxy does not have much strength on it's own. The strength comes from a thin film securely binding the parts together. So if the fit is loose before applying the epoxy, take steps to tighten it up. Use short lengths of brass tubing to increase the diameter of loose fitting wire in ring terminals.

Finally, roughen up the surfaces to be bonded with sandpaper or a file and pre clean with some sort of solvent or alcohol to remove oils and metal filings. This insures that the epoxy permeates the mating surfaces.

For those not wanting to spend time learning how to insure a perfect soldering job, substituting epoxy is a viable alternative. I remember the times, I got ham handed and managed to burn myself or worse, burn a hole in my wing covering. Ring eyelet terminals are a neat way to make removable wings and I hesitated to use them in my designs due to the difficulty in soldering for many folks. With the advent of the latest generation of epoxies, I am confident that we can use epoxy without concern.



DID YOU KNOW?

Albatros D series fighter aircraft, although tremendously successful early in their service life, suffered from a poor climb rate due to their excessively thin wing airfoil. Fokker's airfoils were much thicker and his aircraft had superior performance. Poor climb rate was one of the reasons Von Richtofen hated his Albatros and preferred Fokker's triplane design. Imagine what might have happened if Albatros had used a better airfoil....

**FEATURED KIT:
HALBERSTADT DIII**

Glenn Horowitz built our Halberstadt DIII and used Doculam to cover.

Doculam is a clear, Mylar based, self-adhesive document laminating film, requiring painting. It is half the weight of conventional iron on coverings. Glenn proved that it is possible to make a stunning WWI model with this material. Excellent work Glenn!



PHOTO AND MODEL BY GLENN HOROWITZ



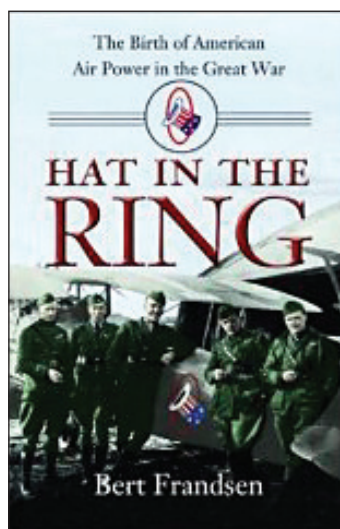
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PHOTO AND MODEL BY GLENN HOROWITZ

**BOOK REVIEW:
HAT IN THE RING**

By Bert Ayres



"On 16 January 1918, a small convoy departed Paris and headed toward the front. Maj. Bert M. Atkinson, of the U.S. Army, rode in the first vehicle, a seven-passenger Hudson touring car. Three Fiat trucks loaded with supplies followed. His outfit included two officers, six sergeants, and an interpreter. Atkinson's orders directed him to proceed to the French aerodrome at Villeneuve-les-Vertus, in the heart of the Champagne region of France, and to establish the 1st Pursuit Organization

and Training Center. His mission: to organize and train America's first pursuit squadrons."

What you have just read is the first paragraph of the first page of this fascinating book about the birth of the American air service. Sure, America had an air service before 1918. Mostly composed of training and reconnaissance aircraft and a cadre of 56 pilots. There was no formal organization or tactics going into World War I.

This book tells the story of how the men, the aircraft and the fighting tactics evolved. It does this by using diaries, letters home and daily flying reports in the men's own words. In 11 Chapters, 274 pages we learn about how it was at that period. Many photos of the pilots, diagrams of the flying tactics, maps of the fighting areas and drawings of aircraft structures are included.

I really enjoyed reading this book. It is a very easy book to read. The kind that you don't want to put down when your wife calls you to take out the garbage. The book reveals many insightful incidents that really emphasize how primitive the aircraft were.

One interesting episode happened in the early phase of dog fighting. The Nieuport 28's wing would break. Here is what Lt. Jimmy Meissner reports:

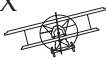
"Diving with full motor in the excitement of the moment, I got so close that a lurch of the blazing enemy made me plunge almost vertically to avoid a crash. The strain was too great, with a crack my top wing seemed to break loose and whip back overhead at the instant I shot under the Boche, so near that I thought we had met."

Luckily he was able to get back to his field. A change in flying tactics and wing construction solved this problem.

If you are interested in America's participation the Great War, you will surely enjoy this book.

REFERENCE

Frandsen, Bert. Hat in the Ring. Washington DC: Smithsonian Books, 2003. 320. ISBN: 158834150X



DID YOU KNOW?

One of the reasons we have relatively little information on French WWI aircraft construction compared to the British is that the French destroyed their archives prior to the German invasion of Paris in WWII. Some documents were thrown into the Sienne so as not to fall into enemy hands.

SCRATCH BUILT SE5A

By Chris Searle

I have been accused of being a slow builder and when I realized that this project has spanned over 30 years I just had to agree. Although not the same aircraft certain parts have been carried forward from the 1970's prototype to the current project.

The original 27inch span SE5a was built as free flight model in 1972. The plans were the work of the late Doug McHard and I think were originally published in 1957 with a price of 3s and 6d (only older members will understand this strange price tag). It was a very comprehensive and quite complicated plan with a series of photographs printed



PHOTO AND MODEL BY GLENN HOROWITZ

along the top showing various stages of construction. In addition an extra plan sheet was included which showed Radio installation, which was designed around a rubber driven escapement.

I built the model, powered by a PAW .80 Diesel, and went to Epsom Downs for the first free flight, which ended in disaster. The model was launched and climbed steeply then dived and zoomed into another climb until eventually it dived into the ground. However the damage was restricted to a snapped fuselage just behind the cockpit but wings and tail were ok. This has taught me a lesson that I have never forgotten – get the Centre of Gravity in the correct place!! The model was soon repaired and the position of the CG corrected to match the plan and another free flight session was attempted. The next flight was a success with the model turning left fairly tightly under power but climbing and then when the engine stopped, gliding down in a big right hand turn. The passage of time prevents me from remembering the number of flights, not many, but still a successful flyer.

During the 1990's the fuselage was found in corner of the garage, the wings being lost over a couple of house moves, and I decided to build another model based on the "new micro radio gear" available. The model was built but not covered and I realized that the "micro gear" was not all that



PHOTO AND MODEL BY GLENN HOROWITZ

micro and the part finished model was put on the shelf next to the remains of it's predecessor.

My recent involvement with electric flight and the introduction of brushless motors lithium batteries and true micro radio led me to restart the project a couple of months ago and get on and cover and paint the model. The power will now be a Micro Typhoon 6, 7x5 APCe prop, a 2s1P Lithium battery, schulze 435 rx and 2 Hitec H55 micro servos. Parts of the original model have been used – the centre section, wheels, spreader bar, gun sight and pilot.

The model is now just about ready for a test flight – I must make sure the CG is right!

Addendum - The model was flown on 27th December a clear but very cold day. The model was balanced as per the plan although it was level and not nose down and I wanted to try this to avoid adding any more weight. However the first flight was very exciting with the slightest stick movement giving large changes of attitude – yes it was just like 1972 the C.G. was not right! At least with RC I could throttle back and manage to get down into some long grass with no damage. I went home feeling a bit down and wondering if I should concentrate on my larger IC powered models.



PHOTO AND MODEL BY GLENN HOROWITZ

As there was no wind I decided to make another attempt and added 36 grams of lead into the nose and returned to the field where the temperature had at least risen to freezing point.

The next flight was a dream – it just flew straight out of my hand, rock steady, and was now responding well to my control inputs. It needed full down trim and needs less movement on the rudder but the difference is amazing, I wonder if the wing section which is thin and under cambered makes the CG position very critical?. The model flew for 6 minutes with the LiPo pack as bought from the shop and has plenty of power.

I am now looking forward to some nice flights on warm calm summer evenings.... only another 5 months to wait!

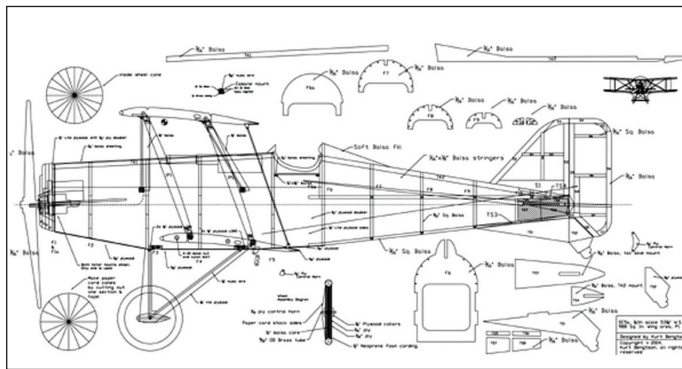


DID YOU KNOW?

Contrary to popular belief, canvas was not used as a covering material on WWI aircraft. Fine linen was used on both sides of the conflict.

**SE5A 531/8" PROTOTYPE
VERSION NOW AVAILABLE**

Our 1/6th scale representation of the SE5a features scale under cambered air foils, four ailerons driven by lower wing mounted servos, pull-pull rudder and elevator linkage with scale control horn positions. AXI 2826 brushless direct drive power. Olympus geared Endoplasma power optional.



Price: \$145 plus shipping. Ordering information available at www.aerodromerc.com or call 831-263-1871

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- your model
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