

here's a list of what I used in building the BEGIN-AIRE!:

Motor: 6 volt Graupner Speed 400

Batteries: 6-cell & 7-cell SR Max 500 packs

Transmitter: Airtronics Vanguard 4-channel

Receiver: RCD 535 micro 5-ch

Servos: 2 Tower Hobbies TS-31's

Prop: AeroNaut 10 X 7 fiberglass folding

Gearbox: Olympus 2.3:1

Speed Control: Airtronics MA-3 with BEC - I can hear some of you howling about this now. Yes, I plan to install a small on/off controller with brake as soon as

I can find one I like. I had the MA-3 and it works fine so I used it and saved the weight of a receiver battery.

FINAL NOTES

I want to thank Clyde Geist (A.M.P. Graphics) for finishing the trim exactly like the picture on the kit box. It's beautiful! And thanks to Tom Hunt for flying the BEGIN-AIR! superbly on its initial test flights.

The Parable of Beauty

Once upon a time long, long ago in a far away place, there lived a lad who wished to learn how to fly. He had a burning desire to try his wings, but as a youth, he loved beauty. His first model was a scale plane, a thing of beauty with wings that glistened in the sun. Alas, on his first attempt to fly, he crashed. His plane of beauty and graceful lines had become vicious and spiteful in the air.

After the crash, his enthusiasm waned, he vowed never again to try flying. He would become a monk and build plastic display models. He sank lower and lower into despair. As he was about to build his first plastic model, a wise old sage interceded and spoke words of wisdom to the lad.

"My son," spoke the sage, "your obsession with beauty has led you astray. Consider the young woman who is fair of face and body. She, you say is beauty."

"But," continued the sage, "place her on the athletic field and she is as the pig when it is chased by the terrier, slow afoot and ungainly. Now consider the amazon who runs like the wind and glides over the hurdles. Does she not possess beauty and grace?"

"That is true," answered the lad, "but how does this apply to flying?"

The sage then explained his parable to the slow thinking lad. "Your plane with scale detail and wings that glisten in the sun is like the girl that is fair of face and shapely of body. It possesses physical beauty but is slow and ungainly in the air. You must strive for functional beauty, for grace and agility."

"I begin to understand, old one," stated the lad. "I

shall build a plane of great functional beauty."

The youth turned to leave, then reflected on the sage's advice, and turned back to him asking, "Wise one, do you have any other words for me?"

The sage spoke again, "As the maiden of great beauty is soft and fragile, so is the scale plane. The stout and sturdy woman may be considered ugly but she is strong and will serve you well throughout a long life. So, too, is the strong and functional airplane."

The lad looked as if he would speak, but the sage held him to silence with a raise of the hand.

"Finally," continued the wise one, "one does not learn the art of love from the virgin. One learns from a woman of experience. Likewise, one should learn to fly from an experienced flyer."

"I have learned much today," spoke the lad. The wise one smiled, content that he had shared some small measure of his wisdom.

And the youth departed, thinking not of flying, but where he could find a woman of experience.

Author Unknown

Building Light

by Russell Bennett

from the AMA National Newsletter - Aug. '94

There is nothing quite like the feeling of watching the glider that you just tossed into the air get sucked up by a small energetic thermal. This is, for me, one of the real joys of handlaunch glider flying. So, in an effort to have more fun, I try to build planes that thermal easier. Now, when it comes to indicating lift and staying up in light lift, lighter is better. But how do you build a light airplane? Two areas I have often wondered about are wing skinning adhesives and covering materials. In the past I had read things like "Micafilm is the lightest covering" and "diluted yellow glue is lighter than epoxy," but I had never seen any numbers. So I decided to do a little research.

I cut squares of balsa wood and covering materials, each approximately 20 square inches. The dimensions of each piece were measured and the area calculated. Using a balance which has a resolution of 0.0001 g, I started weighing. For the liquids. I would weigh a piece of balsa wood, apply the adhesive or paint, allow it to dry, then weigh the wood again.

The weight of the applied liquids will vary depending on who does the applying, however the relative weights of the different materials should remain the same. The results were interesting. Take Micafilm as an example. When used on an open structure, Micafilm is very light, however, when used on a sheeted surface

where it is necessary to have a continuous coat of Balsarite, it is actually on the heavy side. You would be better off using transparent Monokote. For all of the materials tested, the transparent colors were significantly lighter than the opaque colors. This is due to the transparent colors being tinted with a dye while the opaque colors require a layer of relatively dense pigment sufficiently thick to block most of the light. The 3M 77 spray adhesive is an example of how much the weight of coatings can vary between "just enough to do the job" and "that should never come unglued." The following are the weights I came up with:

Material Weight	(oz/sq.ft)
EZ-LAM epoxy on balsa	0.127
Diluted aliphatic resin glue on balsa (3:1 with water, applied with a sponge roller)	0.086
3M77 spray adhesive (2 surfaces, light coats)	0.037
3M77 spray adhesive (2 surfaces, heavy coats)	0.143
Monokote (opaque: white and orange)	0.250
Monokote (transparent: red and green)	0.185
Oracover (opaque white)	0.267
Supercote (opaque yellow)	0.177
Micafilm (pearly white)	0.136
Micafilm (clear)	0.073
Ultracote (purple)	0.228
Lightspan (blue)	0.086
Clear Mylar w/adhesive (Model Research Laboratories)	0.134
Water based polyurathane (one coat applied with a sponge brush)	0.122
Balsarite (one coat needed for applying Micafilm and Lightspan)	0.094

from Baltimore Area Soaring Society News Baltimore, MD

The Wing's Too Big!

by Carl F. Brandenburg

from the AMA National Newsletter - Aug. '94

Big airplanes are fun! It's just a pain in the south side, hauling them around in your average car. My car can manage a five foot wing of 10 to 12 inch chord, but beyond that, it gets sticky. It hurts to slam the door with your aileron hanging out!

What to do? For a seven to ten foot wing, it is possible to part it in the middle and make two "handleable" wing panels to haul. However, the center of the wing has the greatest bending moment, and it usually contains the aileron and flap/spoiler servos, plus the fittings to attach the wing and fuselage.

On my 2 times size Super Stick and the 83 inch span Kadet Senior that I am presently building, I chose to separate the wing into three sections; a five foot center section plus two shorter outer panels. This allows a solid center section spar and wing structure, a fixed in place aileron structure and a straight forward wing/fuselage mounting system. In each case it is necessary to build a spar slip joint to carry the loads of the outer panel into the center wing section and to split the ailerons just outboard of the aileron drive horn and key or pin these outboard sections to the driven portion of the ailerons on the center wing. Neither of these two tasks is too daunting or excessively heavy. It is somewhat of a design challenge to make the parts fit easily and to be simple and positive to fasten in the field, but these tasks are not difficult. It is essential to insure that outer panel deflections do not cause a separation of aileron drive pins, but this is not difficult. So, if you have a problem getting your big wings into your car, buy a station wagon or try building a three piece wing. I believe that the economics suggest a three piece wing I could be wrong of course!

from Carrier Wave - Phil Moore, Editor - McDonnell Douglas RC Club - St. Peters, MO

ON A BET OR A DARE - An Electric First

Steve Anthony - Feb. '95 *Silents Please*

It was about 4 years back, while out at the Long Island Falcon's flying site, that I got an idea. I was watching "Tony's Towing Service" in action; a big 1/4 scale Curtis Robin hauling off the grass via towline a 130" sailplane. The Robin had a releasable tow point somewhere near the C.G.; and the sailplane was towed from the nose, also with its own release. It was a wonderful show; the Robin, with the hammer down and the tail up, "breaking loose" the huge sailplane, the sailplane rising while the tug gathered speed, and finally, the tug is off, climbing, slowly gaining altitude.... ah, 'twas a wonderful thing to watch. When Tony had a free moment, (a rare thing; that tug was in the air dragging sailplanes almost non-stop!) I wandered on over to pick his brains. I believe his reaction to an "electric tug" was "WHAT?!!... not even on a bet!"; and so another electric challenge was born.

That afternoon, while on the long trek home, I started to give some serious thought to the project; and some of the difficulties seemed to be a lot bigger than initially anticipated. The airframe would need to be of unique design, the weight to power