

# Radio Controlled Soaring Digest

October 2005 — Vol. 22, No. 10





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This *Condor IV* is the only two place gull wing sailplane currently flying in the United States. It was photographed at the Wabash Valley Soaring Association's 2005 Classic/Vintage Sailplane Regatta held at Lawrenceville, Illinois, the week of June 11 through 19th, 2005. **By Mark Nankivil**

**Front Cover** — One of the most realistic photographs to appear in *RC Soaring Digest*, this image is of Mark Foster's Schweizer 1-26. Except for the aileron pushrods, this could be a full size 1-26, but believe it or not, this model is not a huge giant scale 'craft, it's 1/4-scale. Mark flies it at Torrey Pines in Southern California, and Ren DiLeo captured it "on film" while Mark was flying it there.

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**Back cover:** "Slettefjell" in Valdres, Norway. The elevation is 1300m (4300ft) and there is 800m (2600ft) down in the bottom of the valley. This means very nice lift and a lot of thermal activity. Model is a *Shongololo*, a Race Machine copy from South Africa. The leg is the photographer's; photo taken by timer. **Photo by Jo Grini**

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## In the Air!

It's officially Fall, and the flying season here in the Pacific Northwest is coming to an end. We still have four weeks of Daylight Saving time left, and that means continued Wednesday Fun-Flys at 60 Acres. Activities at these Fun-Flys have been a bit different this year for two reasons.

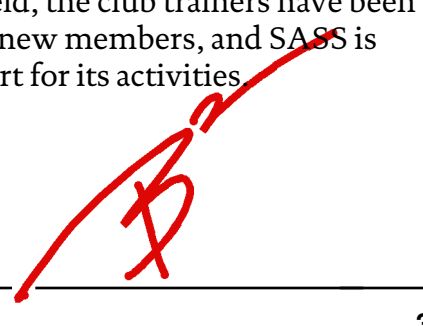
First, Seattle Area Soaring Society President Loren Steel promoted on-the-field cookouts. Loren's incredible enthusiasm for SASS activities in general and cookout socialization have had the effect of increasing Wednesday evening participation to record levels. Additionally, King County is rebuilding the bridge at the north end of the field and adding some parking spaces. Bummer, right? Well, the river walk now detours along the field border for several hundred feet before turning back to the river, and the field is no longer hidden behind a bank of tall trees. All of our activities are now much more open to public view.

As a result, people are no longer bypassing the field. Rather, they stop walking, jogging, riding their bike, or roller blading, to watch the club winch throw the moldies straight up nearly over their heads, or stare in disbelief as flaps come down and the nose of a sailplane hits the spot. Many leave the trail to come talk with club members, a number of these observers have expressed an interest in getting involved in RC soaring, and SASS has new members.

So, more SASS members on the field, the club trainers have been out every week, the club is adding new members, and SASS is gaining some needed public support for its activities.

Good going, guys!

Time to fly!





# Soaring Spotlight

by Gregory Vasgerdsian  
Photos by Ren DiLeo

Mark Foster's 1/4-scale Schweizer 1-26





Mark Foster's 1/4-scale Schweizer 1-26 cruises over the Pacific Ocean at Torrey Pines, California. A standout paint scheme, some basic scale detailing and a correctly positioned pilot in the cockpit go a long way to making a realistic looking scale soarer.

Sometimes a model really stands out in the crowd — is it because it is unique, is extremely well built or simply a great paint job?

I'm not sure, but I think you'll agree that this beautiful 1/4-scale Schweizer 1-26 owned by Mark Foster of California certainly is a stand out model.

Ren DiLeo took these stunning shots while Mark flew the model from the cliffs at Torrey Pines. A classic, "Made in the USA" design, the 1-26 and many of the other Schweizer sailplanes make excellent designs to be modeled in scale.

The 1-26 is not an extreme high-aspect ratio ship, but what is lost in glide ratio is more than made up for because you end up with a scale model

with a good amount of wing area, a light wing loading and a ship that won't bite you with a nasty tip stall if you slow it down too much. In short, a scale ship with very pleasant and forgiving handling characteristics.

In addition you have an easy to setup model that uses rudder, elevator, ailerons and spoilers — that's it!

Mark's 1-26 flies on an RG-15 and here are his own comments on the model.

"The flying characteristics are very nice. The ship has a more natural slope feel, yet will aerotow quite well.

"I've just used Hitec servos, nothing very special. I don't recommend minis or micros.

"The flying weight is around 11 pounds and, the yellow and





Left: No caption required for the photo on the left — the picture itself does all the talking.

Right: Between flights, Mark Foster kicks up his heels on another relaxed outing with his 1-26.

red color scheme works real well at Torrey since there is air traffic flying in close proximity.

“Overall the model is very impressive for a quarter size ship.

“Responds well and looks extremely realistic in flight. I'm very happy to have it in my fleet.”

I'll be honest, Ren took some really great photos, but I think you'll agree that the photos look like a full-size 1-26. What really blew me away is that the model is just 1/4-scale! This model looks so real in flight that I assumed it was probably one of those 1/3-scale monsters.

And, for those of you that have a scale ship with no pilot in the flying seat, take note of how realistic this model is in flight because of the pilot sitting in it. And the pilot is sitting in a realistic position at that! Well done.

As it turns out this model is supplied to builders as a

fiberglass fuselage/foam core (SD3021 airfoil) partial kit from Ren himself. You can inquire about the partial kit by contacting Ren at: [rendileo@worldnet.att.net](mailto:rendileo@worldnet.att.net)

Thanks for sharing, Mark, and thanks for the great photos, Ren!

HAVE SAILPLANE - WILL TRAVEL

# THE PRIDE OF FRANKEN-PLANES

BY TOM NAGEL, TOMNAGEL@IWAYNET.NET

I was at the slope over in Newark a few weeks ago, trying once more to get my *Stealth Sloper* to behave in a manner somewhat resembling a controlled flight. One of the guys from the power

club was slumming at the slope. "What is that thing?" he asked, "Another one of your Franken-Planes?"

Apparently I have acquired some sort of reputation for flying "weirdness." The comment gave me pause, and I have since undertaken a careful inventory of my fleet.

1. My first ever RC plane, the *Crunchbird*, was a two meter Goldberg *Sophisticated Lady*. It actually survived my learning curve and still looks pretty good. After I met Chuck Anderson at the NATS, I added winglets. The winglets actually helped the flight characteristics, and certainly made it easier to pick out in a crowded thermal. Recently I have started using the *Crunchbird* two meter wing on the electric *Miss 2.1* fuselage, and despite the fact that the *Miss 2.1* fuselage has the aerodynamics of a shoe box, it thermals very well. It is not exactly a Franken-Plane. Kit bashing or radio-controlled miscegenation perhaps, but not a Franken-Plane.





2. The *Infamous Flamingoid* — a two meter *Gnome* with a yard flamingo prosthesis. I built it on a dare from my son, and it still flies thermal and slope pretty well. Its best thermal flight is just over 30 minutes. I just finished re-building the flamingo head prosthesis in order to lighten it up a bit. Because of the skeg, which keeps the neck from breaking off, the Flamingoid does not qualify under the rules of either Scale, RES, or Audubon. OK, maybe it is a Franken-Plane.

3. The *Chrysal-Stick* — a DJ Aerotech hand launch with Pico Stick landing gear and GWS A-Drive motor. This was built for two reasons: First, I am lousy at hand launch. Secondly, I wanted to see how much airplane you could fly on a GWS A-Drive. The *Chrysal-Stick* has taught me that most electrics are way overpowered, and that ugly is as ugly does. The *Chrysal-Stick* may look ugly, but it flies very sweetly. It is the largest indoor electric at most of Terry Nitsch's golf dome fun flys.

4. The *Stealth Sloper* is a converted Dubro Products kid's toy. It is fun to look at, cheap, and a lousy slope plane. Frankenstein's Monster, on the other hand, was ugly but pretty good at what it did. The *Stealth Sloper's* on-board gear is soon to be recycled into something else.

5. The two meter *Klingberg Wing* (RIP) — This thing was a true Franken-Plane even though it was built dead stock. I had to add floppy winglets just to get it to fly at all. I'm glad I built it. I'm glad I don't have it anymore.

6. GWS *Tiger Moth* — I built this to convince my son to learn to fly RC, and it did the job. There is not much odd about this plane, except maybe the real tiger stripes, from a picture we downloaded on the internet, and the pilot, Radio Troll.

7. The *Thermongo* — this one is a *Mongo Jr.* with a carbon tube spar, for winch launching, and Harley Michaelis RDS couplers for the elevons. I had gotten tired of waiting for someone to market a decent sized thermal flying wing, so I modified the Swingle Bird. It



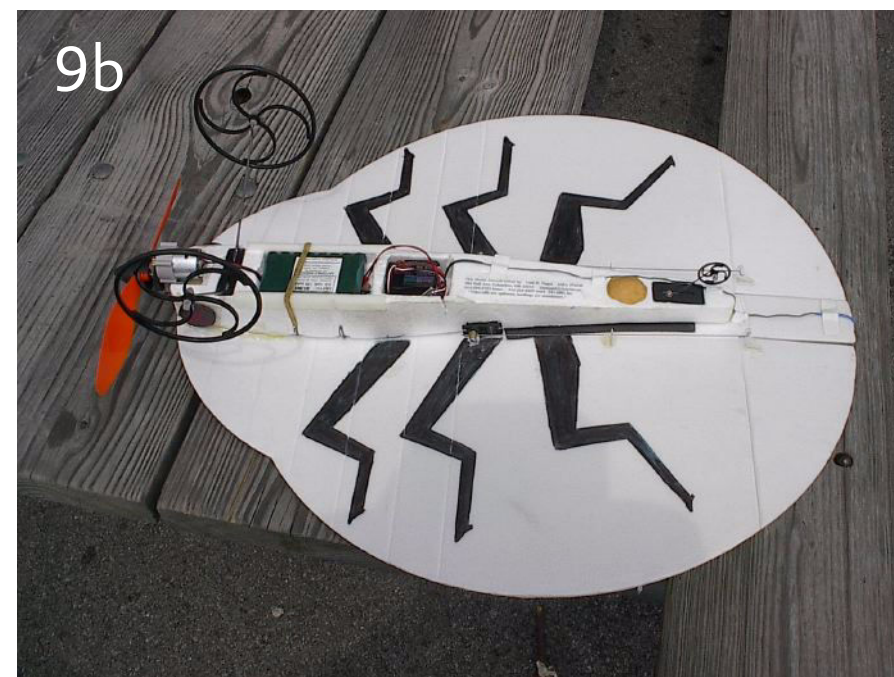


thermals pretty well in good lift, and doesn't look at all Franken-Plane-ish.

8. *Fred the \$4 Sloper* — This one is a Franken-Plane only in the sense that it is a resurrected Kraft Air *Freedom*, rebuilt after Paul Weise was done messing with it. Paul added a rudder and a lot of carbon strapping. I re-built it where it was broken and added \$4 worth of very used ancient swap shop servos. Fred is heavy but smooth, and a great aileron

trainer; if some new pilot totals it, we are only out \$4.

9. The GWS *Lady Bug*. This is the little disc shaped electric thing with spindly 4" wheels and wings marked to look like a Lady Bug. I added bug eyes, a set of deely-bopper antennae, and six legs stenciled onto the underside of the wing with a permanent marker. This is the most fun you can have with a \$25 airframe, fast, maneuverable and goofy. But it is not a Franken-Plane! It is scale, I tell you, SCALE!







10. The *St. Valentine's Sloper*. This was a top secret research project from Dr. Nagel's Franken-Lab, and was unveiled in time for the February 2005 issue of *RCSD*. Let's just say that you can do all sorts of interesting things with a discarded Hallmark sign board.

11. Lastly, from the May 2005 issue of *RCSD*, a three liter pop bottle served as the foundation for this sorta-scale rendition of *SpaceShipOne*. As an

assemblage of miscellaneous parts, this is a true Franken-Plane. And yes, it does fly!

So, what is the common theme among all these Franken-Planes?

First, of all, I fly for fun and I don't care much for competition. Therefore, it doesn't matter to me whether or not my planes conform to contest rules. I just like them to look interesting and fly well. The *Stealth Sloper* doesn't

meet that second qualification and it will be recycled. (Resistance is futile. You will be recycled.)

Secondly, I don't have much technical background, so I just fiddle with things to see what works. Sometimes it looks pretty strange, even if I don't mean it to. (But hey, look at the *Mantis*. And that guy knew what he was doing!)

Thirdly, I am a cheap SOB, so my engineering solutions are low tech and often sort of funky.

Fourth, I like a good laugh.

OK, so it turns out I have a bunch of Franken-Planes, a whole gaggle, a whole flock. That's it! That's where the title comes from! I have a *Pride of Franken-Planes*!

(The reader should be advised that I actually have two or three sailplanes that have not been bugged up.)

If you have a Franken-Plane or two or ten, send me some pictures for *RC Soaring Digest*. I can't be the only one out here flying Franken-Planes.



# A Peek Into the Workshop of Dale King

by Mark Nankivil, <nankivil@covad.net>

This past April I had a business related trip scheduled for Dallas, Texas. With a number of friends in the area plus many aviation related attractions to check out, I added a few days to the trip to make the long drive and full week away from home worthwhile.

One of the stops was to visit and spend time with my good friends Dale and Marge King in Wylie, Texas.

I had the great pleasure of meeting the Kings during a visit with Jerry and Judy Slates a few years back who at the time lived not far from the King's.

Dale is a prolific builder and all around craftsman when it comes to models and

sailplanes in particular. Dale enjoys developing and scratch building his own designs and many of them benefit from an evolutionary development that spans over a number of models.

What Dale is presently working on and flying strikes me as worthy of sharing with the rest of you.

Dale's efforts show that there is more out there than the latest molded sailplane to look at.

I hope you enjoy the visit as much as I did and may it inspire you to give it a go yourselves!

Mark

Dale King and his *Buteo* appeared on the front cover of the December 2000 issue of *RC Soaring Digest*. The *Buteo* had a 112" span, an obechi over foam quad-tapered wing, and V-tail. Total weight was 64 oz.

Dale recently flew his *Steel Akeela* in a local contest and came in 5th place, so it's meeting his expectation of competing with the molded ships. In that same contest, a young man flying one of the original *Buteos* came into 3rd place. That made Dale feel pretty good about his design.





Above: Dale's *KingFisher RES* has a span of 118" and uses the SD7080. Flying weight is 61 oz. Dale says this aircraft can be launched hard, and that it penetrates wind very well, flies like an aileron ship.

Right: Dale with his *Steel/Akeela RES*. The wing has the MH32 at the root and a transition into the SD7084 at the tip. The wing span is 127" and the weight is about 72 oz.











Opposite page: *Steel/Akeela*. This is a multi-channel full-house sailplane with a span of 130". The airfoil transitions from the MH-32 at the wing root to the SD 7080 at the tip. The elliptical shaped wing is obechi sheeting over foam and required five panels to build it to that configuration. Estimated weight is 74-76 oz.

This page: Dale's quarter scale PWS-101 under construction. The PWS-101 is a vintage sailplane (1937). Even at quarter scale, the span is 196". The wing uses the GO-549 airfoil. This beauty is being scratch built from Martin Simons' plans. That's 1/64th" ply skin over the fuselage. Dale says there's lots of work still to be done.



# Dittmar Condor IV

by Mark Nankivil, <nankivil@covad.net>

The Dittmar *Condor IV* detailed in these photographs was seen while visiting the Wabash Valley Soaring Association's 2005 Classic/Vintage Sailplane Regatta held at Lawrenceville, Illinois, the week of June 11 through 19th, 2005.

Owned by Robert Gaines of Jasper, Georgia, this is the second of two *Condor IV*s built by Heini Dittmar in 1951.

Based on Heini's pre-WWII *Condor* designs, the *Condor IV* uses the Gottingen 532 airfoil resulting in a thin 12.5% thick wing, one of the thinnest used on a wood wing sailplane. The beefier spar resulted in each wing panel weighing over 200

pounds, a fact that becomes obvious when assembling the sailplane!

Further *Condor IV*s were built under license in Germany by Schmetz (5 units) and Schleicher (7 units). Schleicher's *Condor IV*s have a redesigned fuselage which reduced the overall weight and enlarged the cockpit area. A small production run of *Condor IV*s was undertaken in Argentina.

Robert's beautiful *Condor IV* is the only flying two place gull wing sailplane in the U.S. though there is an Argentinian license built *Condor IV* awaiting restoration in California.

## Dittmar Condor IV

Span	18 meters
Length	8.3 meters
Wing area	21.3 m <sup>2</sup>
Empty weight	330 kg
Flying weight	510 kg
Best glide	30:1 @80km/hr.
Sink rate	0.71 m/s @ 70km/hr.

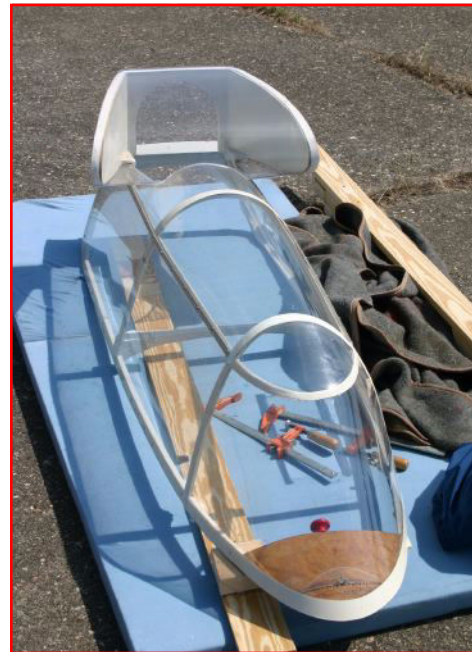


























# SLED DRIVER CHRONICLES...

Jay Decker, <sleddriver@monkeytumble.com>

## WHAT DO I LIKE TO DO?



Ever look at all your modeling crap, excuse me, modeling treasures, and wonder what you're doing? You know, the stuff in your shop we're talking about, those two flyable planes, the dozen broken planes, the scores of kits still in the box, and enough building supplies to start your own, albeit eclectic, hobby shop. Your collection ranges from park fliers to high-end stuff. If you are over forty and have been in aeromodeling a while, you will likely see past genres of aircraft and equipment that were once the hot ticket, but have not been flown for years. If none of this rings a bell for you, turn the page... you are too new to hobby, retired, or one of the few that are fortunate not to have this affliction.

There have been a number of evenings that I've gone into my shop with the intent of building, and ended up looking through

piles of partially built planes, unbuilt kits, plans, wrecked airplanes, and I didn't build on anything. I ended up confused and conflicted about what I should do, largely because I didn't know what I *wanted* to do when confronted by all this stuff. Or felt guilty for having all this stuff that I had never built or that I bought because I got a smokin' good deal on it at the time then never built or used it.

This month I'll demonstrate just what a geek I am by taking you through the process I used to determine what I should spend my time, energy, and money on. This process helped me determine an "enjoyment" rating for the different types of RC soaring. The intent of the rating was not only to rank the types of flying from first to last, but to actually provide a degree of measure, i.e., how *much* more do I enjoy

handlaunch flying over cross country flying. To get that degree of measurement, a numerical rating system was used that measured the relative enjoyment received from each type of flying.

The numerical rating system used is presented in the following sequence of steps and the example data is my own:

**1. Soaring Types:** Start by listing in no specific order what kinds of flying you like to participate in. Example: slope, cross-country (XC), scale, thermal duration (TD), electric, and handlaunch (HLG). You should define the types of soaring/flying in terms that have meaning to you. For example, you might exclusively fly slope, so your list might be F3F racing, 60-inch racing, combat, scale aerobatics, and fun-fly lead sleds.

**2. Enjoyment Criteria:** Again in no specific order, list the criteria that matter to your enjoyment of RC flying in general, i.e., regardless of the type of soaring. Example: fun/satisfaction, frequency, building, and social. As an illustrative example, I really take satisfaction from a successful XC flight, but I don't get to fly XC often, maybe once a year, and just kinda enjoy building XC's, but I really like the social aspects of XC contests and team work.

### 3. Enjoyment Criteria Weighting

**Factors:** Assign weighting factors to each of your enjoyment criteria. Weighting factors are numbers between 0 and 1 that you assign to each criterion based on how important that criterion is to you relative to the other criteria. All the weighting factors should add up to 1. If the values do not add up to 1, adjust your weight factors to get the total to add up to 1. Example:

<u>Criteria</u>	<u>Weighting Factor</u>
Fun/Satisfaction	0.33
Frequency	0.33
Building	0.17
Social	0.17
Total	1.00

What do these weighting factors really *mean*? These weighting factors were intended to express that how much enjoyment I get out of flying depends primarily on how much fun/satisfaction I get out of the type flying and how frequently I get to do it, hence the *higher* factors assigned to Fun/Satisfaction and

Frequency. But, I also receive enjoyment from building and social aspects of flying; however, they are less important than how fun and how frequently I get to do that kind of flying. So, I assigned *lower* factors to Building and Social. Again, these are my factors; you should assign these factors according to what you feel is most important.

**4. Rank By Criteria:** Rank each flying type listed from favorite to least favorite by criteria. Use a rank of '1' for your favorite, '2' for your second favorite, etc. Example:

Type	Fun/Satisfaction	Frequency	Building	Social
Slope	2	1	2	4
HLG	1	2	1	6
TD	4	4	6	1
XC	3	6	4	2
Scale	5	5	3	3
Electric	6	3	5	5

What do these do all these rankings *mean*? When looking down each column of rankings, you can see how much enjoyment I get out of each type of flying relative to the other types of flying.

When looking across each row of rankings, you can see the relative

enjoyment derived each criterion for each type of soaring. To me this is the most interesting view of the raw data, as I feel that it illustrates the relative strengths and weaknesses of each type of flying to me.

**5. Compute Weighted Averages:** For each RC soaring type, multiply the rank for each criterion by the corresponding Weighting Factor for that criterion and then add the results.

Example for the slope soaring:

$$\text{Slope Weighted Average} = 2 \times 0.33 + 1 \times 0.33 + 2 \times 0.17 + 4 \times 0.17 = 2.0$$

The *lower* the weighted average, the *more* enjoyment I get from the type of flying.

Notice the relatively large difference in the weighted averages between HLG and TD? The natural break tells me that I receive much more enjoyment from Slope and HLG than everything else.





John Dvorak's eclectic collection of slope, thermal duration, and scale models. Clockwise from upper left: CO8 from a 1998 RCSD article, a *Klingberg Wing* with flaps and adjustable CG, a scratch built slope racer, an RnR *Nova*, Mark Triebes two meter twist wing for slope and thermal, the *High Aspect 3M* ARF, and a CO8 with a different color scheme. Center: John's scratch built Schweizer TG-2A.

Overall Ranking	Type	Fun/Satisfaction		Frequency		Building		Social		Weighted Average
1	Slope	2 x 0.33	+	1 x 0.33	+	2 x 0.17	+	4 x 0.17	=	2.0
2	HLG	1 x 0.33	+	2 x 0.33	+	1 x 0.17	+	6 x 0.17	=	2.2
3	TD	4 x 0.33	+	4 x 0.33	+	6 x 0.17	+	1 x 0.17	=	3.8
4	XC	3 x 0.33	+	6 x 0.33	+	4 x 0.17	+	2 x 0.17	=	4.0
5	Scale	5 x 0.33	+	5 x 0.33	+	3 x 0.17	+	3 x 0.17	=	4.3
6	Electric	6 x 0.33	+	3 x 0.33	+	5 x 0.17	+	5 x 0.17	=	4.7

Here's what I learned from, and how I've responded to, the information derived from this exercise:

**1. The amounts of enjoyment I derive from different types of RC Soaring have changed with time and changes in location.**

Now that I have moved close to great slope soaring sites, slope soaring is now the type of soaring that I derive the most enjoyment from. Before I moved, I did not derive nearly as much enjoyment from slope soaring because I did not do it often as I do now.

**2. I don't currently have a HLG plane... I need to build one.**

After I get one together, I will probably invest more effort to attend HLG than TD contests.

**3. Since getting into HLG, particularly discus launch HLG's, I'd rather fly HLG than TD.**

I don't think that I had realized how low my motivation for TD has become.

**4. While I once derived a lot enjoyment from flying electric airplanes, electrics are not important to me since moving close to the slope.**

In my case, I get the same thrill on the slope that I used to get from F5B electrics without the motors and batteries.

**5. While I really enjoy flying XC, I do it so infrequently that it just doesn't rate very highly.**

**6. I have sold and given away a lot of electric, TD, scale, and XC equipment that I had accumulated, and I'll probably get rid of more.**

Now that I realize that those aspects are not as important to me as they once were, I feel "free" to get rid of the stuff... and, the guilt associated with not using or building those toys.

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You're probably thinking, "What a maroon! That guy doesn't know his butt from a hole in the ground!" Well, you sir are fortunate to know yourself and what you like to do so well.

Whether this was interesting to you or was a waste of *RC Soaring Digest* space... let me know at <sleddriver@monkeytumble.com>.





Bruce Johnson's aircraft stable, photographed at QuAppelle Valley, Saskatchewan. Left to right, front to back... *Zagi*, *Moebius*, *Queenbee 2S*, 1/4 scale *Ventus 2CZ*, 1/10 *Salto*, *Kirby Kite*, *F-15 Tomcat*, and a *Starling*. Does everything fit back into the car? Bruce says yes, along with a couple of tool boxes and overnight bags.



A white and yellow c-Hawk glider is shown from a high angle, resting on a green lawn. The glider has a long, slender fuselage with "c-HAWK" written in red on the side. The wings are long and thin, with yellow tips. The tail is also white with yellow tips. The background is a dense green lawn.

# Soaring High

by Gregory Vasgerdsian  
<gvasgerdsian@sbcglobal.net>

Hobby Club c-Hawk



*Graceful in looks from tip to toe and wing-tip to wing-tip, Hobby Club has been selling the all-molded c-Hawk (composite Hawk) for quite some time.*

Over the years I've eyed this model whenever Alberto of Hobby Club would show up with a load of cool sailplane stuff at various soaring events — earlier this year it was time to snag one for myself.

Upfront what attracted me to the *c-Hawk* was the nice elliptical dihedral wings and cool looking fuselage, you definitely won't lose this model in a gaggle of current designs.

Although it is very reminiscent of the *Hobie Hawk* it is very much a different model from its proportions to the way it is constructed. So besides appearance the other facet that really attracted me was that this model is built.

It is a sailplane you could get your gear in, balance and go fly in just a few hours from getting the box in the mail. In addition the model features a removable

nose-cone allowing you to easily bolt in a nice electric set-up.

The *c-Hawk* retails for \$399.95 but check <[www.hobbyclub.com](http://www.hobbyclub.com)> for current price as they do run specials from time-to-time.

### Parts and Pieces

I really planned to slope soar the *c-Hawk*, feeling it would be a great model to relax with on in-land slopes and along the coast.

Just looking at its photo on the Hobby Club website had me envisioning the model soaring high over the hills, but I decided to first try it out with a nice brushless setup. For power I went with Puma Lipo 11.1v-1350mAh (3sp) pack, Typhoon-Micro 15/13 brushless motor, and Align brushless motor programmable speed control all turning a Graupner 11-6 CAM folding prop with an aluminum spinner.

For charging the LiPo battery I used an AstroFlight Lithium 109 charger. All the electric

gear was purchased from Hobby Club for a number of reasons. I left it to Alberto at Hobby Club to supply me with a power package that was right for the model — I've always found that those selling the models know what will work with them — and this takes any guess work out of the picture at my end. The other reason I purchased the setup from Hobby Club was that

airfoil and the quality of the molded parts is just outstanding.

You can get the *c-Hawk* finished in red, green or yellow. I went with a yellow one, which features solid yellow on the bottom of the wings and stabs, with the tops predominantly white but with shading on the tips. The fuselage is white with a color canopy and a black nose-cone.

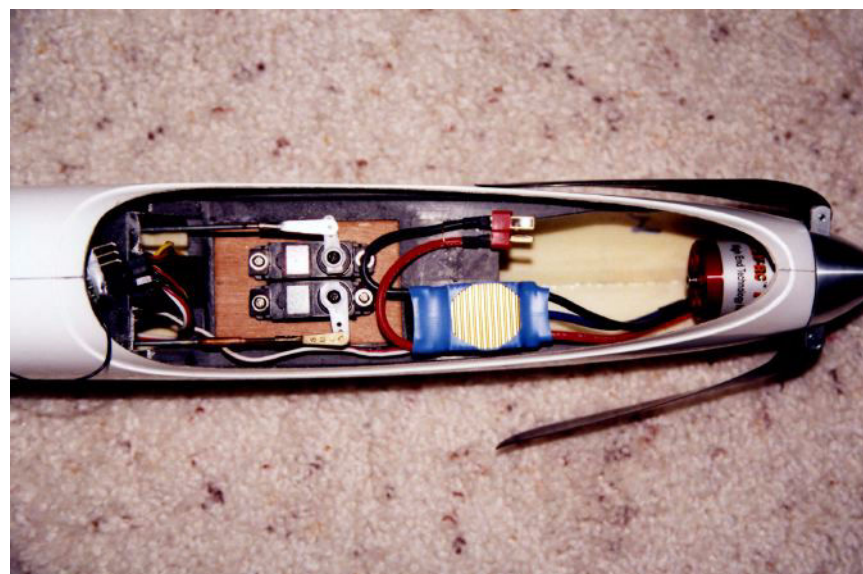
...the quality of the molded parts is just outstanding.

they are reputable dealer, friendly, and their prices are very good!

So, with all this in hand I could have easily been flying the *c-Hawk* by the next weekend, but in reality it took me more than a few months to get to doing it.

The model spans 98.4 inches, and flies using an EH82/EH84

The first thing at hand was installing the motor setup. Easily done after marking and drilling three holes in the firewall to mount the motor. I then soldered up the controller to the motor wires and also soldered on Deans micro connectors for plugging the battery in.



The *Composite Hawk* is a standard class soarer with plenty of grace and beauty. At almost 99-inch span it is large enough for good thermal performance and can easily be switched from electric power to pure sailplane.

Upper left: Here is the *c-Hawk* just out of the box. From parts fit to finish the quality is outstanding. The *c-Hawk* has a molded rudder, full-flying elevator and beefy carbon-fiber wingrod.

Upper right: Under the hood with the electric gear installed. There is ample room behind the motor for the battery pack.

Left: At the tail end of the *c-Hawk* the elevator bellcrank and all pushrods come already installed — just plug the stabs and rudder on.



My next step was to install the servos, which were two HS-85s. This was done by making a 1/8-inch plywood mounting plate that was cut to fit into the servo tray already inside the *c-Hawk* fuselage. I found that I needed to cut part of the radio tray where the pushrods enter the radio area, and I needed to bend the

the 2.5-inch mark on the wing, and said, "Hey, let's go fly this thing!"

### Flying Around

The speed controller is a BEC-type and on initial power up it produces a number of tones which require you to then move your throttle stick and thus program it for a hard

...this really is a model that  
can be easily switched  
from electric version to  
pure sailplane.

pushrods slightly to get everything to line up nicely.

The receiver was mounted with Velcro® up behind the servos and the speed control was mounted with Velcro® just in front of the servos. This left a nice big area to mount the battery pack behind the motor.

So, all assembled I found the *c-Hawk* to balance out at about

brake, soft brake, more power, less power, etc.

At first I found it slightly confusing but after a few minutes I had it figured out.

Under power the brushless motor just spools right up, really smooth and plenty of air is pulled through the prop.

The model control throws were set for full rudder and full elevator.

On launch the *c-Hawk* pulled away and just went, the brushless setup pulling it with no problem to a high altitude — I shut it down and did some soaring.

In glide the *c-Hawk* responded nicely to controls and the CG seemed about right. This is one beautiful machine when viewed soaring in the air! The elevator is sensitive enough and full-throw is not needed for anything except an emergency and the rudder works well enough. With the help of some lift this first flight was an easy 30 minutes.

On landing I set the *c-Hawk* up for a nice smooth approach and left lots of leeway. It is not a heavy model so it doesn't carry a lot of energy and speed when coming in, but it is an efficient soarer with a very good glide ratio so it does cover ground.

There are no flaps or spoilers so just plan ahead for your landing. If slowed to the point of stalling the *c-Hawk* will

drop a tip, but recovery is easy and as is with any model, keep your airspeed up.

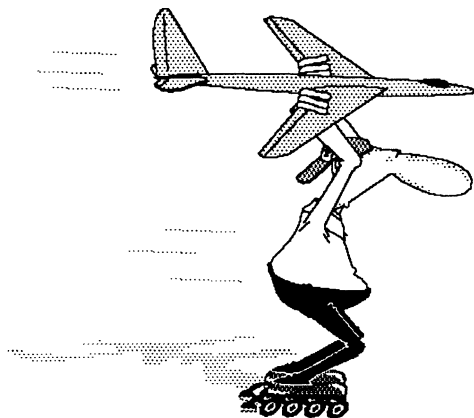
### Wrap Up

With the day done and a few more flights on the electrified *c-Hawk*, I can't say there is much of anything to complain about, keep it moving and it flies very smooth.

I do wish the nose cone was white and not black, as I believe it would make the *c-Hawk* look that much better when flown as a pure sailplane (maybe I'll paint mine white).

One big gold star is given to the *c-Hawk* because this really is a model that can be easily switched from electric version to pure sailplane. As a pure sailplane the model is a delight from the slope.

At this time I have not winched the *c-Hawk*. Alberto of Hobby Club recommends that if this is to be done, extra area should be added to the rudder with an acetate extension piece to give the model additional stability on launch.



# Gordy's Travels

Gordy Stahl, <gordysoar@aol.com>

*Exercise Time!*

*Improve Your Dead Air Soaring Skills!*

At a recent contest I missed first place on Saturday by eight points.

This not only cost me good wood, but since our OVSS Soaring Series is sponsored by Horizon/JR, the High Point Champs for the weekend (Expert and Sportsman) win a set of digital servos, about \$160 in prizes!

Now I missed by blowing a complete landing (brain fart) for a loss averaged at 98 points... but I didn't need 90 of those points, just eight... and nine seconds more flight time on one short flight would have clinched it.

That kind of put things in perspective for me, and today I remembered a soaring

exercise I used a few years back when I decided I wanted to move up the contest score board.

Simple idea really, go out in the evening with your ship of choice, preferably the sailplane you will be using for contests. Use a short bungee to get you up about 100', and then fly three flights with a count up clock running.

It's important to try, really try to get the longest flight, each of those three flights... on the clock.

That tells you what the time "potential" is of that air you are flying in and gives you your goal, or task.







If you don't own a Talking Timer  
<<http://www.talkingtimer.com>> (about \$15), then you need to get one!

It is an invaluable tool for getting your landing time down to within just a few seconds, every time. Looking at the directions which accompany the Talking Timer, you'll find that you can program in any amount of time that you like, press a button and it will count down, literally

"speaking" each minute, the 30 second mark and the last 10 seconds.

I have mine modified with a 2" piece of clear vinyl tubing CA'd to the back of the timer, so that I can slide it down on my TX antenna. That allows me to glance at the display, or reach the buttons without looking away from my sailplane.

Set your timer to count down a full minute **more** than the average of those three

flights. The idea to get you to push yourself, to fly as smooth as possible, in order to take advantage of the little energy available... to tune your thumbs and eyes to be able to eek out those extra eight or nine seconds of flight time.

Give it a try! Remember, our doctors are always telling us that we need more "exercise"!

Enjoy! I did tonight. ☺

# On the 'Wing...

Bill & Bunny Kuhlman, <bsquared@themacisp.net>

## Redwing, Part 3

The weather here in the Northwest has been truly wonderful all Summer long. Warm days with no rain, clouds with flat bottoms (if there are any clouds at all), light winds from the north... And all of this has meant we've been doing a lot of flying and not much building. Still, some progress has been made on the two meter *Redwing*, and this month's column will keep *RCSD* readers up to date.

As this column is being written, the wings are complete with the exception of the 1/16" balsa sheeting. The servos are installed and the circuit board control horns have been fabricated and glued in place in the elevators and ailerons. We've included photos of the servo installations as well as a picture of a typical control horn with ball link.

Most of our construction time and effort have been devoted to building the fuselage and the fin and rudder complex.

The fuselage is being constructed in the same general manner as our *Blackbird XC*, with a central plywood keel and balsa

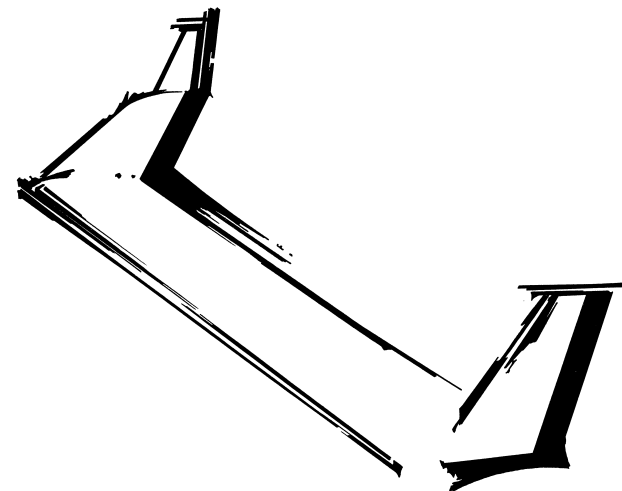
block sides which are contoured to a round aerodynamic ally clean shape. As discussed in a previous column, carving large balsa blocks to match preestablished cross-sections is not difficult is not at all as time consuming as many people imagine.

The central keel is constructed to match the vertical contour of the nose back to the high point of the airfoil at the root.

Hardwood dowels are strategically placed along the thickened perimeter of the keel, and matching holes are drilled in the balsa blocks. The balsa side blocks make the keel extremely rigid, and are easily removed for access to radio gear. Tape is used to hold the blocks against the keel during flight. This system has proven itself to be both strong and reliable.

This central keel ends aft of the main spar, and is held in place with a relatively large diameter dowel. See the included photo for details.

We've made a bit of a change to fin and rudder on this model in that we're using a



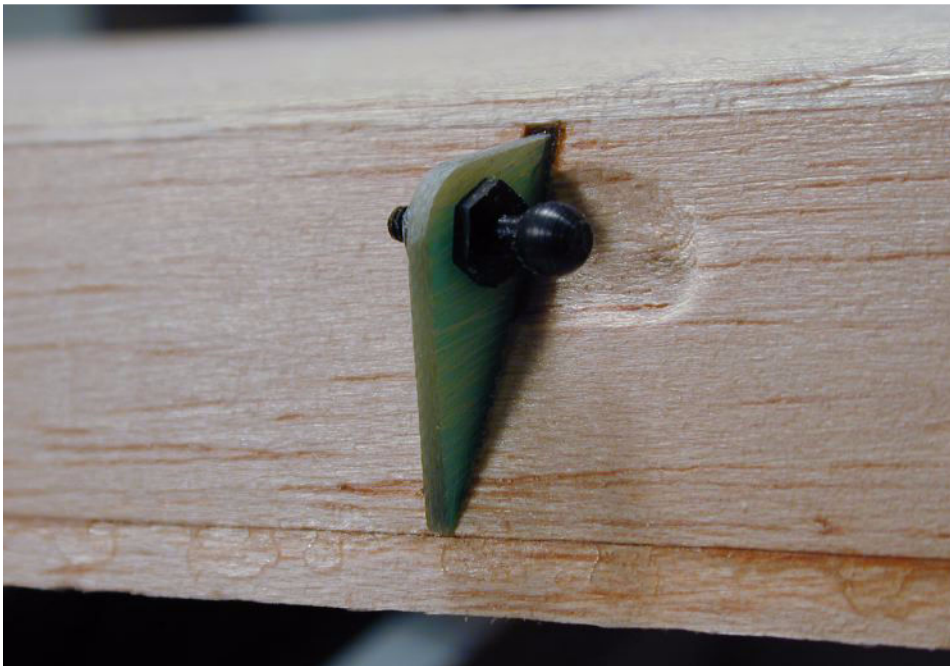
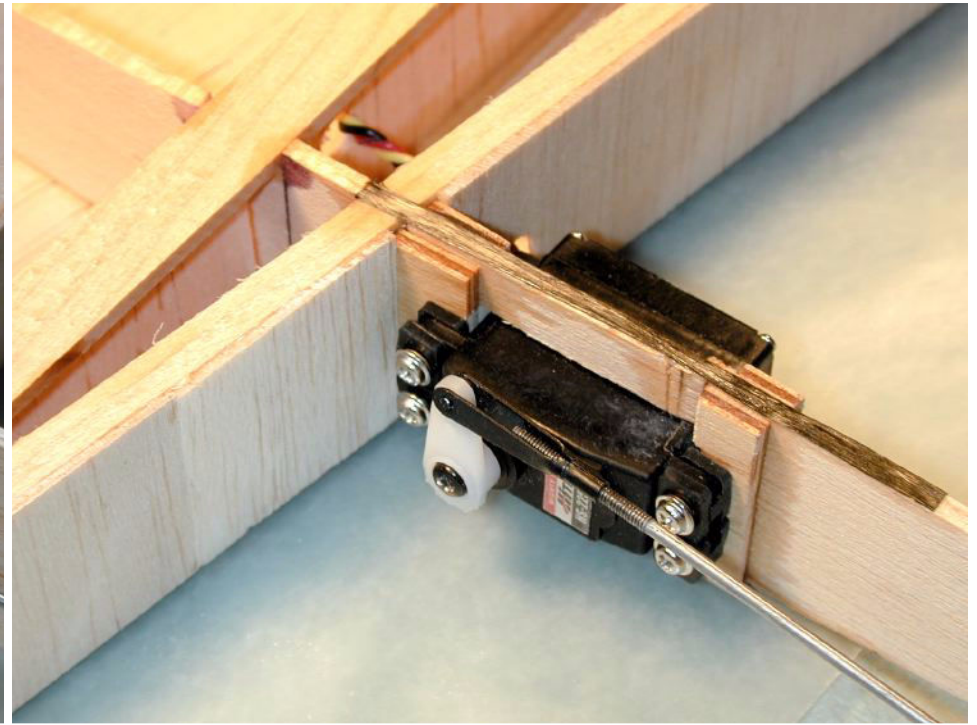
rather unique airfoil, the BTP8. This section has a conical leading edge which continues back past the high point where the surface is a straight line back to the trailing edge.

As on the *Blackbird XC*, the fin is fully sheeted with 1/16" balsa, and the rudder is an open bay structure using diagonal ribs and cap stripping. Hinging utilizes the lightweight Goldberg nylon hinges with removable pins. The fin is a fully enclosed D-tube, the rudder has a triangle stock leading edge and the trailing edge has a length of 1/64" plywood to make it a bit more robust.

We're hoping to finish construction by next issue and include beautiful full color photos of an imaginative color scheme.

The pressure's on!



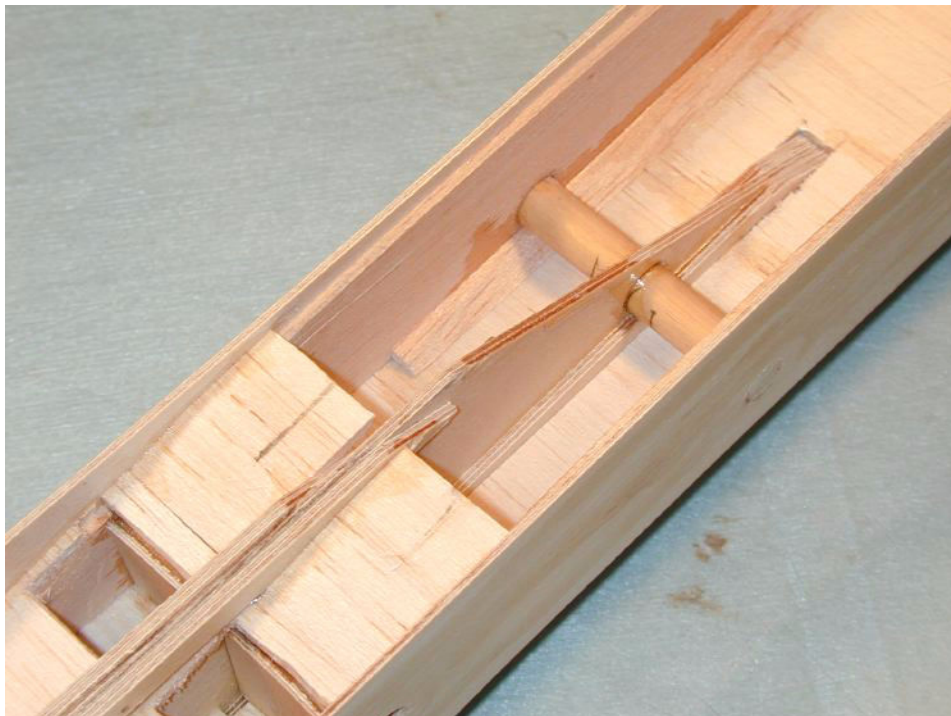


Upper left: The elevator servo (Hitec HS-425BB) is installed between the two spars. The pushrod slot is cut into the webbing of the lighter rear spar, so the reduction in overall spar system strength is relatively small. The leading edge sheeting will completely enclose this servo, so we're heavily relying on Hitec reliability. We can always remove the sheeting if the servo fails.

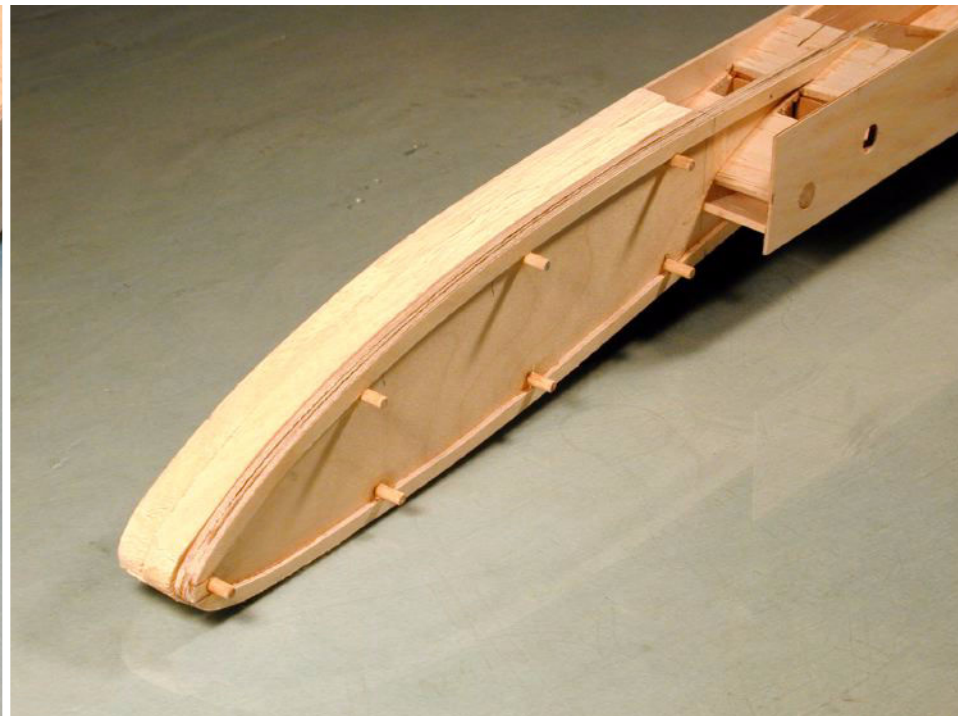
Upper right: The aileron servo (Hitec HS-225MG) is mounted behind the spars in the open bay portion of the wing.

Left: Typical elevator and aileron control horn. Constructed from circuit board, the horns are of the same contour as the adjacent wing rib and go into the control surface two full inches. They're held in place with 1/4" balsa triangle stock on both sides. The triangle stock spreads the loads across a large area of the lower skin.



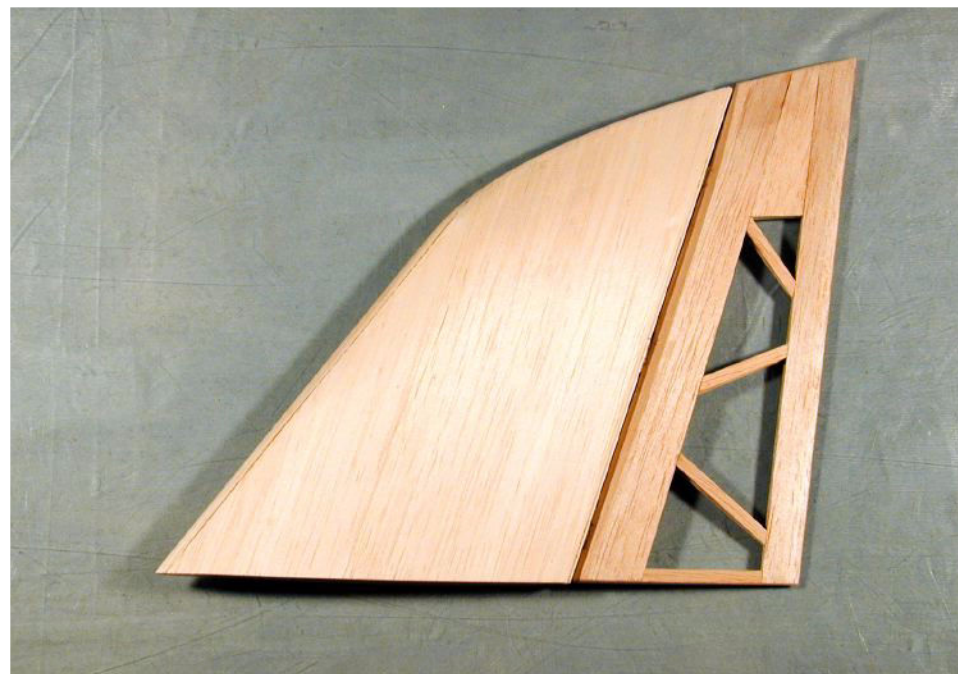


Above: The rear of the keel, showing the dowel which connects the end with the fuselage sides. There's another dowel near the wing leading edge. The main spar carry-through is right behind the openings at the lower left of the photo.



Upper right: The fuselage is taking shape. The plywood keel is in place, and the right hand balsa nose block is tacked on in preparation for shaping. In this photo you can see the second connecting dowel near the wing root leading edge.

Left: Fin and rudder, almost ready for covering. All that's needed now is the rudder control horn and covering.





New Aeromodeling World Record Attempt - 04.08.2005

FAI has received the following  
Class F (Model Aircraft) record claim:

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Claim number: 11811

Sub-class F5-S (Aeroplane, electric motor, rechargeable  
sources of current)

F5: Radio Controlled Flight Category

Type of record: N°174: Distance to goal and return

Course/location: Nehatu - Vahastu and return (Estonia)

Performance: 80.43 km

Pilot: Jüri LAIDNA (Estonia)

Date: 30.07.2005

Current record: 68.9 km (06.11.2004 - Giorgio AZZALIN,  
USA)

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The details shown above are provisional.

When all the evidence required has been received and  
checked, the exact figures will be established and the record  
ratified (if appropriate).



## IN A FUTURE ISSUE

### SZD-24-4A *Foka 4* walkaround and data

The *Foka 4* was developed as a Standard Class sailplane, the final production development of the SZD-24 series manufactured by SZD Bielsko in Poland. The *Foka 4* is of mixed construction, using both fiberglass and wood.

There are several positive aspects to the design which make it an ideal large scale RC model, particularly for aerotowing.

The SZD-24-4A *Foka 4* featured in this walkaround is owned by Gary Busk of the Dallas-Ft. Worth area and is flown from Caddo Mills airport just east of Dallas. It is the only *Foka 4* presently flying in the United States.

