

# Radio Controlled Soaring Digest

September 2005 — Vol. 22, No. 9





**Front Cover** — Mark Nankivil captured Mike Remus' *Bubble Dancer* crossing in front of the moon during the sailplane competition at the 2005 National Model Airplane Championships (NATS), held at the Academy of Model Aeronautics National Flying Site in Muncie Indiana. Coverage of the Soaring NATS, with photos and text by Mark Nankivil, CD Unlimited, begins on page 4.

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The League of Silent Flight is the Special Interest Group (SIG) for Soaring within the Academy of Model Aeronautics. As such, LSF is responsible for running the National Model Airplane Championships Soaring events. This year Soaring took place from 22 through 29 July, a full eight days of competition.

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An international contingent of aerotow enthusiasts converges on the Big Bird field in Monroe Washington to take advantage of a perfect July day.

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Jay makes some predictions about the future of imported molded sailplanes and presents some arguments for molding your own airframe. **By Jay Decker**

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This annual event is held at a first class soaring site and draws participants from a number of states. Well run and well attended, the Spring Fling is always an attraction.

**By Gregory Vasgerdsian, with photos by Ed Lockhart**

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Designed by the Schweizer Aircraft Company specifically for the U.S. Air Force Academy, the TG-7A motorglider was used in the Academy's "Soar-For-All" program. **By Mark Nankivil**

**Back cover:** — Ole Kanestrom <kanestrombows.com> flies his *Alula* at Mt. Townsend, just outside of Quilcene Washington on the Olympic Peninsula. Ole says he always takes his *Alula* or *Moth* when hiking in the area. Spectacular scenery and fantastic flying — what could be more enjoyable?

**Photo by Phil Pilgrim.**

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## In the Air!

*R/CSO* has been receiving increased notice over the last few issues because of its photography. The move to full color PDF has certainly been a positive influence on our ability to reproduce images which are truly works of art. Our remarkable team of photographers continues to submit far more material than can be published and fully deserves all of the accolades for the visual extravaganza readers see in each issue.

In his “Sled Driver Chronicles” column, Jay Decker explores the notion modelers should begin to design and build their own moldies. Almost as if it was planned, Mike Lachowski did just that, entered Unlimited at the NATS, and came in tenth. See Mark Nankivil’s NATS coverage for more information Mike’s “20K.”

As previously promised, this issue includes a walk-around of the relatively rare Schweizer TG-7A motorglider. As a modeling venture, the TG-7A offers some interesting challenges, just what a number of scale enthusiasts relish. If any *R/CSO* reader tackles the TG-7A as an RC project, we’d certainly be interested in following your progress.

*R/CSO* will be at the 32nd Annual Fall Soaring Festival put on by Central Valley RC during the first weekend in October. Yup, we’re off to Visalia again this year! And we hope to meet up with as many *R/CSO* readers as possible, starting on Thursday, the 29th of September, and continuing through Sunday, the 2nd of October.

Thanks again to all of you who have contributed to the *R/CSO* web presence. Your donations are sincerely appreciated.

Time to fly!





# NATS

Academy of Model Aeronautics & League of  
2005 National Aeromo





# *Soaring*

## Silent Flight deling Championships

I spent most of the late '80s and throughout the '90s going to the Soaring NATS when we flew in such places as Lincoln Nebraska, Vincennes Indiana and Lawrenceville Illinois. In the mid-90s, we made the transition to the League of Silent Flight (LSF) as the Special Interest Group (SIG) for Soaring with the Academy of Model Aeronautics (AMA). About the same time, the NATS moved to its present yearly location at the AMA National Flying Site on the outskirts of Muncie Indiana. With a large portion of the site dedicated to Soaring events, each year since has seen improvements in both the accommodations on site and in equipment to be used for running the Soaring Events.

I had not made it to the NATS since the '98 flying season and when the Event Director and good friend Marc Gellart asked me to be Contest Director for the Unlimited class event, I saw this as a chance to renew old friendships and catch up on what's being flown nowadays on a national level. The Soaring NATS this year stretched from July 22nd through the 29th and involved the following classes:

Hand Launch Glider  
F3J  
Two Meter  
Unlimited  
RES  
Nostalgia

These classes represent a broad cross section of the types and classes of models being flown nationwide and allows anyone who attends the NATS to partake of it all or just the portions they wish to focus on. It seems every year that the post NATS analysis on the various discussion groups, club newsletters and the like ask the question as to whether this is a "National Championship" and whether someone

### **NATS Soaring coverage by Mark Nankivil, CD Unlimited, <nankivil@covad.net>**

who is not a gung ho contestant should bother going to such events. As always, it is totally dependent on what the individual goes looking for at any event.

There is the camaraderie that comes with putting that many people with the same interests on the same flying field. There's also the competition that exposes many of the entrants to a level of flying that only goes to improve their own flying abilities. And for those who are driven to compete at a higher level, there is the chance to fly against such noteworthy entrants as Daryl Perkins, Thomas Keisling, Larry Jolly and other past NATS winners, just to name a few.

As with any great event, it is the flying along with the other aspects of the event that will draw glider guiders from across the country there to fly.

The photos in this article represent just a single day from this year's NATS, Day 2 of Unlimited. They do though give a flavor of what it is like to attend such a contest and what one can expect if they choose to attend. With 104 entries flying in this year's Unlimited Class, there were plenty of models to see both on the ground and in the air, as well as in the other classes throughout the rest of the week, which

gave many of us an opportunity to see new designs and as well as some of the classics. As with any good event, it is the people behind the scenes making it happen that deserve the credit. The League of Silent Flight has for year after year run a smooth flowing week of flying. A lot of effort goes into making this all happen and those who take their time and effort to run such events deserve the thanks of everyone who comes to fly.

Enjoy the photos from this year's NATS and think about making the trek to Central Indiana next year to enjoy a week of flying and fun.

For more information on this year's contest results, visit the League of Silent Flight website at:  
<<http://www.silentflight.org>>  
Good Health and Good Lift!





Above: Mike Remus flew this bright green *Bubble Dancer* in Unlimited. All photos by Mark Nankivil unless otherwise noted.

Right: MVSA member Glauco Lago, St. Louis Missouri, launching his borrowed (from Robert Samuels) *Organic 2M* in the last flight group of Unlimited. He crashed his *Zenith* in the previous round and went to the *Organic* as a back up.









Opposite page, top: An *Ava* coasts overhead.

Bottom: Another *Ava* making the final turn towards the landing tapes.

Right: The distinctive shape of a *Mantis* floats overhead.

This page, left: Daryl Perkins had some tough going early in the week, losing his *Sharon 3.7* in F3J, then his *Laser* in Two Meter, but came in second in Unlimited flying his *Insanity 3.7*.

Right: RCSD's own Gordy "Gordy's Travels" Stahl with timer Karl Miller. Photo by Bob Burnson. (Wonder what Gordy was flying and what brand servos he used?)







Opposite page: A *Mantis*, owner unknown, headed for the landing tape.

This page, clockwise from above: Robert Samuels of St. Louis Missouri flew this *Graphite 2* in Unlimited. Here it is making a dive for the landing tape in the 7th round. A *Classik F3J* flown by Denny Zech of the Ft. Wayne Indiana LOFT club heading for the tape. Tom Scully from Cadiz, KY flew this nice looking *Fusion* to 5th Place in Unlimited









Opposite page, clockwise from upper left: Larry Jeffrey carrying back an Emerald to the pits. Ron Kukral of the Chicago SOAR group walking back to the pits with his *Icon*. NATS Champ in Unlimited, F3J and 2 Meter was Thomas Kiesling, here walking with his rendition of the Mark Drela designed *Supra* which he used for both F3J and Unlimited. Mike Lachowski with his O/D molded sailplane nicknamed “20K.” Mike made all of the molds for this model — impressive work and finish quality on the sailplane. Mike took 10th in Unlimited with this model.

This page, clockwise from above: Karl Miller of SOAR with his cross-tail *Zenith*. Jo Grini came all the way from Norway to attend the LSF/AMA Soaring NATS this year. Jo's ship of choice was a *Pike Brio* and he finished in 7th place in Unlimited, 6th in F3J and 2nd in 2 Meter. Mark Miller of Isthmus Models holding one of the sailplanes he imports, the *Soprano RES*. An article on this very nice model is forthcoming.





Don Bailey

# Aerotowing!





# Monroe Washington Aerotow

## July 23-24, 2005

I like to wake up in front of my computer on Saturday mornings, nursing a cup of coffee and reading my emails. My eyes popped right open when I spotted an email from Steve Dentz and Bob Marchi, announcing an aerotow event out at the Big Birds flying field in Monroe.

I've flown out at Big Birds field before, and I knew from experience that there is no finer venue for towing large scale gliders. Imagine a beautifully mown grass runway almost six-hundred feet long, with open fields to the north that generate thermals all day long, plus shaded set-up tables, lots of nice grass for putting model sailplanes together, and a pastoral setting in the peaceful Monroe valley in western Washington.

I got word that many of our aerotow buddies from eastern Washington were planning on attending, as well as the usual contingent of guys from the west side of the Cascade mountains, plus a few coming in from Canada and California, too. And that it was scheduled for the second half of July, when the summer weather in the Puget Sound region is traditionally at its



A half dozen sailplanes wait their turn in the queue. With three tugs running, the wait was never very long.



very best, could only mean we were in for a great day of flying.

Saturday, July 23<sup>rd</sup>, dawned warm and sunny. I showed up just in time for the pilot's meeting at 9AM. Bob Marchi ran through the few rules and alerts for the day, and we all took turns announcing our frequencies and flying machines. There were only a few frequency conflicts among the thirty or so pilots in attendance.

As soon as we were done, the tugs started up, and broke the morning quiet with the sound of throaty big engine noises. I hurriedly jammed through the task of setting up my sailplanes — my new 3.4m S2G *Minimoa*, and my trusty fifth-scale Schweizer TG-2 — and rushed to get in line for a tow.

The lift was good all day long. Most of my flights were well over a half hour in duration,

and I noticed no one was struggling to stay aloft. For awhile there, just before noon, it was “pick a spot and circle,” as the lift seemed to be good just about everywhere. Time to pull out the lawn chair and get comfortable.

On days like this it's hard to spend a lot of time wandering around and talking to the other guys and looking at their planes. I managed to take a few photos, and to meet up with all my old aerotowing buddies from years past.

There was Fred China, down from British Columbia for the occasion, with his beautiful vintage sailplanes. He had his Avia 41P and his Slingsby T-35 *Austral* with him for this event. I particularly like the Slingsby, as it has open cockpits and struts, and looks almost frail with all that open structure under the clear-doped fabric.

This page, upper: The bright pink *Cmelak* tug (foreground). Steve Dentz' towplane is a regular workhorse at the aerotow events all around the western US. Lower: Fred China's Avia 41P reposes in front of his equally nice Slingsby T-35 *Austral*.

Opposite: Ted Hendrickson's Flair Ka8b floats along overhead, looking just like the full-scale version.







Frank Smith showed up from Spokane with his new quarter-scale Schweizer TG-2, done up in the same primary trainer colors as mine. He got in a nice, long flight on it, which was a good thing, because later that day he had a mishap, owing to a frequency pin misunderstanding, and did some significant damage to the airframe. With any luck it will be flying again soon, and none the worse for the wear.

Also from eastern Washington, among others, were Art Boysen, flying a lovely *Ventus*, Helmut Kihszl with his scratch-built Lo100, Bob Craig with his ever-faithful ASK21, Paul Dufek, flying a neat little *Discus 2*, and Gene Cope, who brought his *Mule* tug, and his Ka8b with a video camera taped to the wing.

A number of our local pilots were there, including Lynn King, with a still-perfect 30% DG1000, Ted Hendrickson with his plans-built Hall *Cherokee II*, and Tor Burkhart with his newly-acquired EMS *Duo Discus*. Tor gave me a chance to fly this lovely 5.3-meter sailplane, and it is

truly a graceful and majestic machine.

The long distance award went handily to Dennis Brandt of southern California, who took advantage of some frequent flyer miles to join up with us and fly his 6-meter *Nimbus II*.

Later in the day, I pulled out my *Telemaster 40*, with a Magnum XLS91A engine, and towed up Bob Neitzke's 2-meter Gerasis *Fox* sailplane. Everyone had a good laugh over that one, the diminutive little *Fox* dutifully following behind the tug in fine fashion. It was a good match-up for my small tug, but after that I towed a quarter-scale Schweizer 1-26b, with little effort. From this experiment, we were able to conclude that a good, strong .91 engine can haul up just about any sailplane weighing up to ten pounds.

On the opposite end of the spectrum was Steve Dentz' brutish Airworld *Cmelak*, with an RCS 215cc radial engine, which was capable of hauling even the very largest gliders with no strain. This tug is going on its fourth season now, and is always a crowd-pleaser,



Fred China and Steve Dentz prepare to tow Fred's Avia 41P.

for its large size, scale looks, and the awe-inspiring noise of the five-cylinder radial engine.

We all had a great time, flying and chatting and enjoying the wonderful location, and we ended the day with a barbecue on Saturday night at Bob Marchi's house. I wasn't able to attend on Sunday, but I understand it was another fabulous day for lift. Erik Eiche showed up with his enormous vintage OBS sailplane, and had a video camera on board. His son, Michael, is making an independent movie short on

aerotowing, and from what I've heard, it will be a high quality effort. We are all hoping that the Monroe Aerotow will be firmly established as an annual event, and that next year will be even bigger and better.

What better way to enjoy the dog days of summer in western Washington, than to sit in cool shade with great friends, and work strong lift high overhead, in a perfect sky on a perfect day in July!



# SLED DRIVER CHRONICLES...

Jay Decker, <sleddriver@monkeytumble.com>

## *The end of cheap moldies*



Those of us who lust for molded airplanes, aka “moldies,” have noticed the cost of them has increased the past couple years.

For the foreseeable future, I think we will continue to see relatively high moldie prices as Eastern Europe reintegrates, the standard of living there increases, and the Euro to US Dollar exchange remains high. We have seen some moldies come out of China, we will see more, and we will continue to see the quality improve, though it will take some time to approach the quality of the European products. This month’s bombast is “What does the end of cheap moldies mean?” In a nutshell, I suspect what we will see here in the US is more planes built by US manufacturers and guys building their own planes in their shops, garages, or caves.

One question that many of us who have purchased moldies in the past have probably pondered lately is “Is a plane that used to cost \$900, worth \$1,400 today?” Part of me says, yes, there is no doubt that it is worth \$1,400 for an exquisitely crafted flying machine. But, the practical answer is that “it depends.” In my case, it depends primarily on the balance of how much money is in our accounts and the purveyor of pleasure and pain’s *perception* of how much I’ve been spending on toy airplanes lately. Today, the balance has more difficulty tipping toward “buy” when it comes to moldies. The net result for me is that where I might have bought a moldie for a new TD plane a couple years ago, today I’d purchase a US made bagged TD plane and only pop for a new moldie when I convince myself that I “need” an

F3X or F5X plane, which benefits *performance-wise* from molded technology due to the speeds at which they fly. Moldies will continue to be made and purchased because of this performance advantage, but where *efficiency at speed* is not a requirement, which encompasses almost everything else, European moldies sales have and will continue to slump here in the US. For those who are thinking “man I want a plane that goes fast on the slope, so I *need* a moldie,” well, maybe you do and maybe you don’t. If you are an F3F slope racer, molded technology probably makes sense for you, since you want a minimum loss of energy at a high flying speed. If you are flying lead sleds at high speeds in monstrous lift, you don’t need the efficiency afforded by molded technology



Dieter Mahlein's *Sharon* over Chandler Butte at the 2005 Tri-Slopes Six-Pack. Photo courtesy of Mike Poser.

since you have lift (energy) to urinate away, which is the fun of flying a lead sled.

Unless you don't have a computer with an internet connection, don't read the modeling rags, and don't socialize with other modelers, then you've no doubt heard about the video of Phil Barnes' vacuum bagging techniques. I won't laud the video any further than to say I know "a number" of guys who started using the materials and vacuum bagging techniques in the video and produced better parts on their first attempt than I did after a couple years experience.

I've also noticed what seems to be a proliferation of composite construction information the past couple years on the internet available through usergroup threads, personal websites, blogs and email lists.

Between all the internet traffic and the popularity of Phil's video, it seems that there are more guys interested in building their own airplanes. However, I admit this might just be wishful thinking on my part, since I would like for there to be a larger community of home composite builders in the US to share information with.

Let's assume that there are more composite builders in the US. Why should they build their own planes and what planes should they be build? Cost is *not* a good reason. You can buy a number of good airplanes and get in a lot of flying for the cost and time it takes to gather all the



stuff to make a composite airplane and build the first flyable plane.

Composite building for enjoyment is a good reason. As Americans loose relative affluence, we will probably work more of and work longer in our lives. We will also have to make *more* choices about what we do based on what it costs to do those things.

For example, future economics and population resource pressures will limit our ability to choose to fly toy airplanes *and* play golf. A lot of us might loose some of those “ands” like playing golf, and be left with “ands” like watch TV, play video games, and surf the internet aimlessly – *maybe you could find out how many nude college cheerleaders are on the net...* Or, maybe you could build your own toy airplanes.

Nah, I’m betting that a lot people will choose video games and cheerleaders. . .

The best reason to build is tied to the question of what planes should be built. Guys should build what they cannot buy. And, the ability to build what you can not buy is also the best reason to build. Why buy a lathe, learn how to use it, and then turn screws you can purchase at the hardware store?

May be you think I have a screw loose... let me know at  
<[sleddriver@monkeytumble.com](mailto:sleddriver@monkeytumble.com)>.



Dieter Mahlein's *Tempest* over Chandler Butte at the 2005 Tri-Slopes Six-Pack. Photo courtesy of Frank Slaughter.



Sacramento Valley Soaring Society

# *Spring Fling 2005*

by Gregory Vasgerdsian  
Photography by Ed Lockhart





This past June 25 and 26 the Sacramento Valley Soaring Society hosted the most pleasurable Spring Fling on record. Temperatures were moderate, the turn out was strong and the flying site... was first class.

This is a club that has been working hard to upgrade, maintain and keep their flying site, and the upgrades are noticeable with a large shade structure and plenty of grass in all directions.

On top of that the winches are now setup so that if the wind suddenly shifts 180-degrees, the lines need only be rethread through the turn-arounds at the opposite end of the field!

Title page: A busy place, with sailplanes heading up, sailplanes heading down.

Right: This IS a thermal!





Clockwise from upper left: Lookin' good... and SCORES!

Daryl Perkins' *Insanity 3.7* drops in for the points.

A.J. McGowan brings his ship into the points while his dad Bob times.



As in past Spring Fling events the wind did come up during the event, but only on Saturday.

Saturday came on with wind in the 15 to 20 m.p.h. range and lift that was moving fast. This gave way to quite a few pilots making the walk of shame as you might say. However, SVSS member, Frank Schlosser, was out with his Jeep retrieve vehicle — a useful vehicle when you land a 1/4-mile out! These conditions made it tough on the pilots to find the fast moving lift and in most cases ballast was required.

Contest Director Jim Thomas kept the event moving with the help of co-CD Scott Meader and many of the SVSS membership. The transmitter impound was handled professionally and scoring came off without a hitch. At the raffle table were quite a few assorted goodies including an ACME Models *Tempest*, not to mention a number of ARF gliders and electrics. At the food end, there were hotdogs and hamburgers available all



Craig Allen flew this gorgeous model.

day throughout the weekend, and Saturday evening SVSS hosted a BBQ dinner.

Sunday, the weather conditions were very kind with little wind and plenty of thermals. Landings were in or out of a 5' diameter circle, and a landing contest is just what it was with the lift booming.

The 2005 event came off with great attendance, great flying and fun. An important side note is that the SVSS depends on Spring Fling to help the club keep it's leased flying site.

In the end Bob McGowan dazzled the crowd by not only winning the 2-meter class but by taking the overall high score! Although he has done this before at Visalia, it just goes to show what a great pilot can do with a great model (an Image).

Elsewhere, there was some real position jockeying in the standings before the event was over.

Although the windy conditions challenged everyone, it was those that



could stay high in the standings on Saturday and then nail their time and landing with Sunday's smooth conditions.

So, if your idea of fun is hooking thermals while rockin' to music and mixing with a great group of pilots

then plan on attending Spring Fling 2006.

The 2006 Spring Fling will be rolled back on the calendar so

that it really is in Spring, and be prepared for built-in BBQ pits more picnic tables and some great air!



Scott Meader flew his back-up ship, an RnR *SBXC*, in the contest after problems with his number one — he even nailed a few landings!





Above: A coveted bird — the Western States TRIAD Trophy. The SVSS Spring Fling is the second event of the TRIAD after Arizona.

Right: The recently finished SVSS shade structure housed scoring, transmitter impound, raffle and lunch tables. Note the stereo speaker stacks at each end.

## SVSS Spring Fling Overall Winners

### Unlimited

Daryl Perkins	8926
Dudley Dufort	8750
Tom Watson	8739
Mark Browning	8715
Michael Smith	8603
Justin Ammon	8558
Rick Bothell	8511
Rick Shelby	8332
Keith Schwemmer	8258
Mike Reagan	8228
Bob McGowan	8206
Mehrdad Amir	8010
Garth Warner	7915
Jim Sneed	7838

### RES

Mike Reagan	8525
Perry Fruge'	7739
Gene Dias	7463

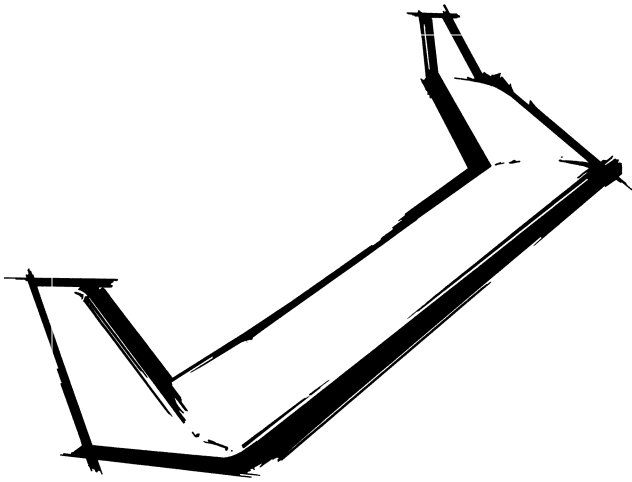
### Grey Cup

Neil Nolte	8865
Stan Scharosch	8581
Joe Newland	8281

### 2-Meter

Bob McGowan	9033
Jim Thomas	7431
Mark Browning	7386





The two meter version of *Redwing* is now on the building board and is about half completed.

One major change has been made since the preliminary planform as published in the February 2005 issue of *RC Soaring Digest*; the stationary portion of the trailing edge between the aileron and elevator has been eliminated. This area was a source of unnecessary complexity and made it harder to retain structural integrity across the span. The included planform sketch shows the modification. The wing trailing edge is now a continuous piece of 3/32" balsa sheet placed vertically between the upper and lower 1/16" balsa sheeting.

The spar system presented the most difficult design problem. As a swept back wing bends, the wing tip takes on some amount of washout (leading edge down). The opposite happens with a wing which

is swept forward. For this reason, we want to make sure the amount of bending is held to an absolute minimum. We created a triangular box spar which will both restrain twisting and dramatically reduce bending.

The *Redwing* spar system consists of full span spruce spar caps which are right at the 30% chord location, plus an additional set of spar caps which are directed perpendicular to the fuselage center line and which meet the other spar around Rib 5. This forward spar is located on the neutral point and includes the wing rod receptacles. Both spar systems utilize internal webbing, and once the leading edge sheeting is installed the two spars form a box which tapers from root to Rib 5.

With a relatively thick section and an oversize wing rod, wing tip deflection under load should be extremely small.

Additionally, there is a short spar connecting Rib 1 (the root rib) with Rib 2 which accepts the equivalent of an incidence rod.

# On the 'Wing...

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

## Redwing, Part 2

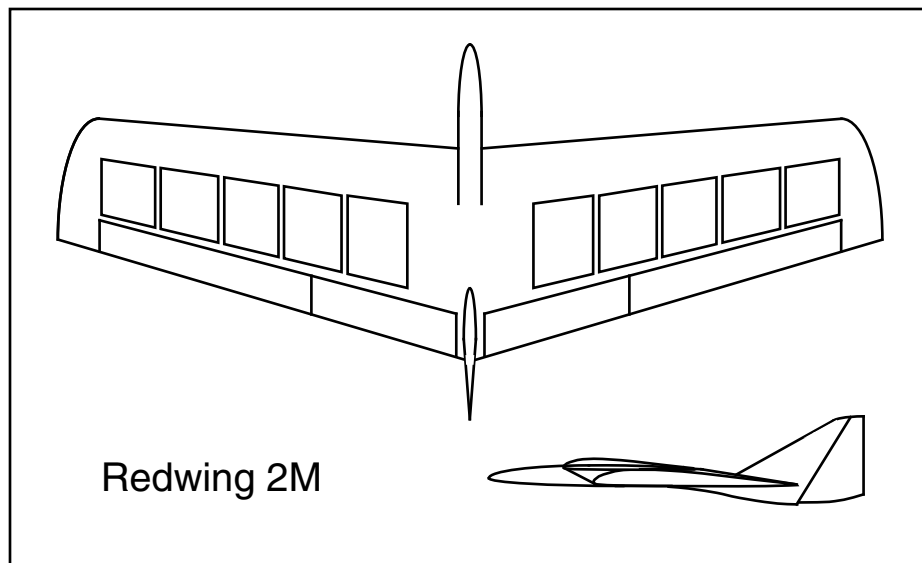
Selecting servos for this two meter version involved a lot of thinking on our part. we wanted to keep servo weight down, particularly outboard, but with such large control surfaces the servos had to be capable of putting out substantial torque.

Sweeping the wings forward has a dramatic effect on the location of the CG, moving it forward about 5.5 inches from its location on the *Blackbird* planform relative to the leading edge at the wing root. Rather than adding lead, we've decided to add a NiCd and use a five cell battery pack, and this voltage increase boosts servo output by about 25%.

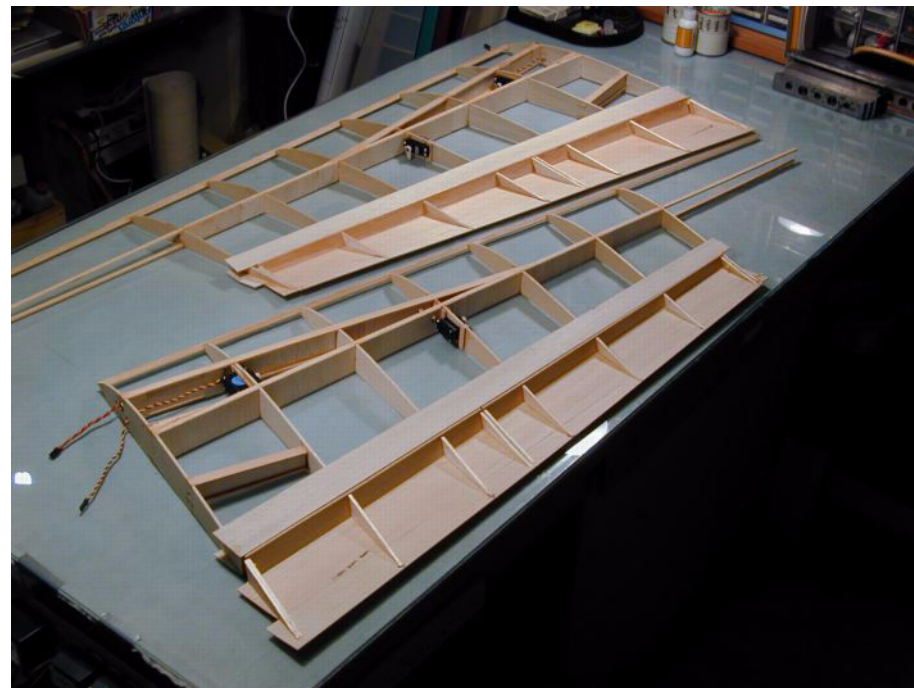
We've installed Hitec HS-425BB servos to drive the elevator halves. These servos put out 57 oz.in. at 6.0 Volts. We reversed the direction of one of these servos by reconfiguring the internal wiring (see "Modifying a Servo for Reversed Operation," *RC Soaring Digest* August 2003), so they are mounted in mirror image fashion. A Hitec HS-225MG (67 oz.in. at 6.0 Volts) controls each aileron.

All of the pushrods are of the heavy duty type and incorporate 4-40 clevises at the





Above: Overview of new Redwing planform showing modifications made to wing control surfaces. The stationary portion of the wing which separated the aileron and elevator has been eliminated.



Right: Wings under construction. Of particular note is the main spar system, composed of two subassemblies, which will be tied together by the upper and lower surface D-tube sheeting. Elevator servos are mounted to Rib 2, aileron servos to Rib 4. Still a lot of 1/16" sheeting to go!

servo arm and ball links at the control surface.

The linkages do not attach at the inner end of the control surface, but rather further out. For the elevators, the control horn is outboard of Rib 2, near the center of the surface; for the ailerons, the control horn is outboard of Rib 4, about one quarter of the surface span. The elevator and aileron control horns themselves will

be inside the control surface and consist of heavy electronic circuit board.

The wing control surfaces are constructed for top surface hinging. This means the servos will be pushing for up, but with the heavy duty hardware and direct linkages to the control surfaces, there is likely little cause for concern.

We've now started planning the internal structure of the

fuselage. The wing servo wiring provides six inch leads at the wing root, so the receiver will most likely be placed within easy reach near the wing leading edge. The rudder servo, with its own separate factory installed lead, will be placed in front of the receiver and connected to the rudder through a standard Gold-N-Rod™ push-pull cable system. The five cell

battery pack will of course be as far forward as practical.

The vertical fin will consist of the usual sheeted rib structure of the original Blackbird, but the rudder will be of open bay construction.

We should have this airplane completed by next issue, and look forward to sharing the remainder of the building process - and test flying - with *RC Soaring Digest* readers.

# 2005 EUROPEAN F3J CHAMPIONSHIPS, CROATIA

## *WINNERS' GOSSIP COLUMN*

Gossip column produced by Uncle Sydney  
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Dateline: 2 August 2005

Osijek and the Croatian Aeronautical Federation pulled out all the stops from 18-22 July and produced the most tricky and competitive F3J championships so far, much to the delight of the 84 competitors, their helpers and friends and the host organizers.

Hot weather which could suddenly turn chilly, calm air and then minutes later gusty winds, waterlogged ground and mosquitoes, all added to the spice of five days of competition. Determination and efficiency by Marin Kordic

and his team of organizers helped to achieve the targeted 14 preliminary rounds, more than any F3J champs to date, giving ample time for eight rounds of flyoffs before mid afternoon on the final Friday.

The German team almost swept the board, winning both senior and junior team first places. Philip Kolb at last clinched his first FAI top medal as Eurochampion, only fitting after coming third in the Canadian world championships last year and winning the Contest Eurotour for the past two years.

For him the winning is no fluke at all. My bet is he could turn up anywhere in the world, take his models out of the back of his car and then fly out any number of 10 minute slots whatever the weather. Yet for several days before Osijek started, he was practising early morning, noon and late evening.

Congratulations too for Tibor Duchovny from Slovakia, 2005 junior champion. Alone he saved us from listening to the German anthem four consecutive times at the prize-giving ceremony.

By four points he pipped Oliver Ladach, a new German thermal reader, who started F3J flying only one year ago and has already qualified for Martin next year. His dad was towing with Helmut Rohner and hardly dared to watch. His mum Berbel also stayed close to the towing stakes so as not to distract her son. Third was Lesley van der Laan from Holland, the smiling cherub with icy precision skills.

Best of all for the fifth F3J Eurochamps was that all the pilots were tested by skies which could be calm and nearly lifeless early and late in





Tobias Lammlein, spotter, Thomas Rossner, team manager and new Eurochampion Philip Kolb with his X-tail Pike just after winning the event in Osijek, Croatia. Photo by Sydney Lenssen.

the day, then suddenly gusty, sometimes wet with narrow bands of tempting lift which left you struggling to get back. Crosswinds on two days sometimes reached close to the limits for reasonable safety, but despite a few doubts the slots continued apace.

This year it was not a matter of rolling off the 9 minutes 50 seconds plus each round and being careful not to lose more than five landing points. Everyone had at least two scores that they would prefer to drop.

Fittingly, it was Damir Kmoch from host country Croatia who topped the qualifying rounds, missing 283 points from the possible 13,000. In the 13th round, Damir only managed a score of 255 points, which he was pleased to drop. In simple language it means that to win you could afford to drop nearly 14 seconds in each round providing you hit the 100 landing spot, easy meat for some in previous years!

The 12th and last flyoff place went to Primož Prhac of Slovenia who scored 550

points fewer than Damir, a remarkable margin, when over the last few years the margins separating the flyoff places have been less than 20 points. No need this year for CIAM to rack its brains thinking about how to widen the margins between top pilots.

Another measure of increased team rivalry was that no country got all three senior flyers into the flyoff. The Czech Republic, Slovakia and Germany managed to get two pilots in.

Jan Kohout and Jaroslav Tupec went on to take second and third place medals, Juraj Adamek and Jan Ivancik showed why Slovakia deserved to take second team medals, and eventual winner Philip and Sebastian Feigl who placed fifth were the Germans.

Remaining flyoff places were won by Lionel Fournier from France, Guy Hufkens from Belgium, Italy's Marco Salvigni and Uri De-Swaan from Israel. Few flyoff finals have produced such a spread of international talents, a real tribute to the high flying abilities in so many countries as well as the build quality and soaring ability of F3J models available today.

How much difference did it make to fly 14 qualifying rounds rather than the nine required as minimum by FAI? My rule of thumb in most national contests is that after five or six rounds have been flown, then the top flyoff places will be almost settled. If you fly a further three or four rounds, only one or two of the last places will be affected.

In Osijek, if the flyoff had taken place after nine rounds, then nine of the flyoff places would have been the same as after 14 rounds. The order of pilots would have changed, but since the flyoff is the start of a new competition, that is not relevant.

So let me express sympathy with Ricardas Siumbrys from Lithuania who was in fourth place after nine rounds but then dropped to 15th, Roy Dor from Israel who would have given Israel two flyoff places if he had kept up his early pace, and Szeri Andras from Hungary who slipped from 12th to 17th place. And cheers for those who crept in late. They were Jan Kohout who moved from 19th place to 10th place over the last five rounds, Lionel Fournier who



Flyoff line-up for the seniors. Photo by Sydney Lenssen.

jumped from 16th to fifth place, and Juraj Adamek of Slovakia who skipped up from 13th place into second place.

“One reliable method of measuring how well a championship is directed and managed is to count the number of protests which the jury has to deal with.” So says Tomas Bartovsky who headed the Osijek jury along with Gerhard Wobekking, a free

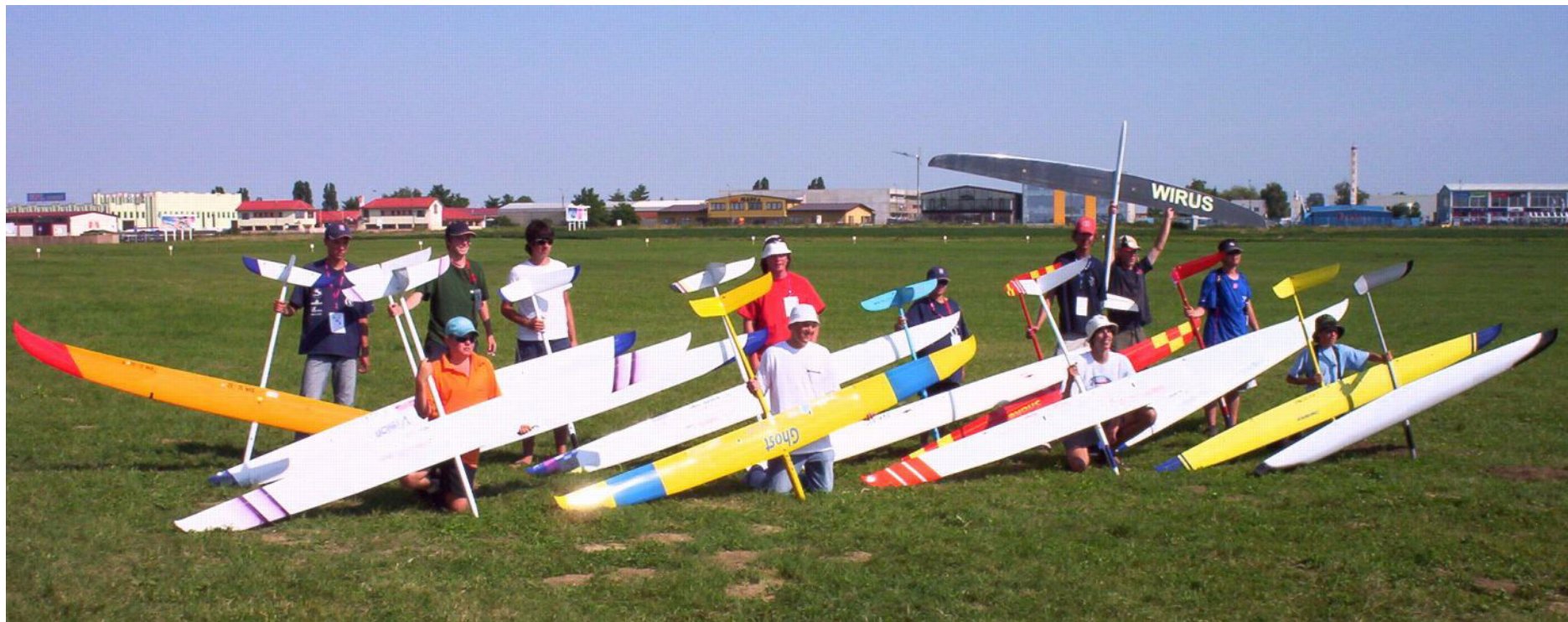
flight enthusiast from Hamburg, and Bruno Muk, a local police chief. There were no protests.

Another trusty measure is how many team managers meetings are held. At Osijek there was one, on the night before the contest started, and you need one to brief the managers. That meeting was not controversial since most of the F3J rules and conventions have gained wide acceptance. Some managers expressed disquiet about the

need for pilots to change frequencies between rounds. In forming the matrix, contest director Marin had found that he could not achieve a fair mix which allowed most flyers to fly against all their rivals without pilots changing crystals. Thomas Rossner, the German team manager, regretted this format and predicted at least one or more pilots would lose models. Sadly he was right.

Sotir Lazarkov from Bulgaria was the culprit and Gintaras Kuckailis from Lithuania was the victim. Sotir flew on channel 77 for Round Zero and remembered that he had to change to channel 69 for the second round. In the nervy contest proper start he changed channels one round early, and two pilots tried to launch on 69 in Slot 5. Gintaras' *Pike* was first to explode, still on the line as it smashed into the ground 20





Flyoff line-up for the juniors. Photo by Sydney Lenssen.

metres short of the tow men. For his sins, Sotir's *Vision* buried its nose up to the wing between occupied tents in the team enclosure area. So easily that could have been fatal and the end of the contest.

Jan Kohout was sitting in his tent less than a metre from the missile. What a relief to smile later with Jan when he said: "Today I had my second birthday."

For his sins, and no one was more sorry and apologetic than him, the Bulgarian was banned from the next round, meaning two zeroes.

Thomas Fischer flew his slot with the wrong frequency in round seven, fortunately this time without clashing with another channel, and he was zeroed, the culmination of what proved to be an unhappy event for this former junior world champion. I hope and

expect he will regain top form next year in Slovakia.

The lesson from all this is that changing frequencies between rounds should be avoided at all costs. CIAM should take another look at safe frequency spacings with modern equipment. The Slovaks suggested that each country could be allocated a fixed frequency for all FAI competitions, well in advance, and each national competitor would then know what he/she

must have. When this was looked at in the past not enough frequencies were available to cover all countries. But is that still true with more bands and better equipment?

Two puzzling hints from the new champion: Philip Kolb, like many of the big heroes of our F3J world, is ever ready to discuss the latest design trends, design tips and wing profiles. This year you did not



All the Czech Pike team, l.to r., Jaroslav Tupec, father of the Pikes Jaroslav Vostrel, Jan Vacha, Jan Kohout and Michal Wagner.

Photo by Sydney Lenssen.

need to be too observant to see that the red wings on his *Pikes* sported a turbulator strip, placed somewhat surprisingly to me, some 30mm or so in front of the gap sealers for the flaps and ailerons.

According to Philip and various aerofoil prediction computer programs, the *Pike* section, as well as making a howling sound when it hurtles around the field towards the end of working time, also exhibits separation and a big drag bucket at that point on the upper surface. The turbulator

strip which consists of three layers of Trimstrip, 5 mm wide, trips the air and reduces drag especially when the coefficient of lift is around 0.4, significant when flying across the sky in distance mode to find another thermal. Philip sounded convincing.

One joker, who shall be nameless, suggested that this was Philip's latest ruse to psych out his rivals. Sure enough, next day I spotted two other *Pikes* where Trimstrip had been added and pilots were testing. Prediction was that by

the time the competition started, half the *Pikes* would have turbulators. And the biggest laugh of all would have been if Philip turned up for his first slot with his usual big smile and the Trimstrip removed. Of course he didn't.

Equally amazing is Philip's rationale for having his receiver aerial fed through the carbon fuselage, up into the fin and out as a fine stiff wire taped to the top of the rudder, extending about 300 mm from the back. Most people including myself, when dealing with a carbon fuselage, feed the aerial out of the fuselage as quickly as possible, tape it outside to just behind the wing and then let it float.

Windtunnel tests and theory show that the hanging wire has a drag equivalent to the complete glider at many useful air speeds!! Scarcely conceivable it would seem. On my latest model, the *Espada R*, Jaro Muller has done the same thing, the aerial wire being supplied with the aerial lead threaded up the back of the fin. I can see numbers of flyers testing this one out over coming weeks!

One slight disappointment with the fifth F3J Eurochamps was the absence of new models and technical developments. The *Pike* is currently the most popular model by far, and the Vostrel family must feel delighted that so many top flyers have one, two or three *Pikes* of various forms, X-tail and V-tail, full carbon or lightweights, with conventional colors or exotic multi-colored finishes and patterning, in their armory for the event. *Pikes* certainly seem to perform well across the whole range of weather conditions.

But some pilots maintain that in flat calm, barely lifty conditions, you need to have a *Sharon* in your locker. For example Philip brought his *Sharon* out once or twice to gain that extra 30 seconds when nobody flies out the full 10 minutes. Several of the juniors and some German and Dutch team members have also stuck faithfully to *Sharons* and *Spaces* which have won many contests over recent years. But the time has come for HKM's Willy Helpenstein to get his new up-dated F3J models onto the market.



There was a sprinkling of *Ghosts*, moulded *Graphites*, *Starlights*, *Esprits*, *Escapes* and Geert van Melick's bits-and-pieces models which also flew well at times and were competitive. Junior Yuri Gavrylko flew his Ava polyhedral rudder/elevator/spoiler lightweight in early and late slots, but there remains some way to go to make it fully competitive.

One newish model was the *Vision* flown by the Slovenians, some Croatians and Bulgarians which I predicted would do well. It did not do badly and I am still confident that its future bodes well. It will be attractive in price for newcomers to F3J which must help the sport.

In last month's Prospects Gossip column I wrote about Primoz Rizner from Slovenia flying his own design, *Vision*, although I did not name it, moulded by Nan Models in Bulgaria, calling it a cross between the *Pike* and *Sharon*.

That description provoked a detailed response from Bogo Stempihar who with Michael Grom runs Mibo Modeli in Slovenia. This firm has been

involved in the shadows for Graupner for many years producing the *Soarmaster*, aerodynamics by Dr. Helmut Quabeck, a friend of Bogo and indeed a friend of all model glider pilots for what he has done for aerofoils.

Mibo Modeli tells me: "*Vision* was designed after long discussions with the Slovenian F3J team and Mibo, on the basis of can we make a new better *Soarmaster*. The new design was tested with prototypes with conventional styro/obechi wings to check the model was as good in practice as the computer simulation."

So it is not a blatant crib, as I suggested, but a design based on *Soarmaster* experiences. The wing geometry is the same, the centre panel has a smaller span, the outer panels the same shape. For better and faster starts, the aerofoil has been changed from HQW 3,0 to HQW 2,5, and since the wing is now fully composite and moulded, it can take the thinner aerofoil.

The depth of section is kept at 8% from the root up to about 20 cm from the wing tip, where on the advice of Dr.

Quabeck, the HQW 3,0/10 is retained for low Reynolds numbers. The leading edges are now elliptic rather than straight as on the *Soarmaster*. The fuselage is completely new with a small pylon to gain better aerodynamic clearance around the centre and easier landings.

For economic reasons, Nan Models in Bulgaria which is run by Nikolai Nikolov has gone into partnership with Mibo to produce the complete models. Normal weights for the 3.155 metre *Vision* is between 1700-1750 gm with lighter versions at 1620 gm. In strong winds, Bogo reckons that you don't need more than 250 g of ballast, which tallies with what I saw in Istanbul earlier this year and in Osijek. For more details, log onto <[www.mibomodeli.si](http://www.mibomodeli.si)>.

Bogo has a lot more to say about future Graupner plans and next year's new F3J model *Super Soarmaster*, which he reckons will be a blatant crib between *Vision* and *Xperience PRO*, but that will have to wait for further gossip.

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Eurochamp gossip would not be complete without checking

back on early predictions. This year I have a red face, with far more wrong than right, but that is the life of a pundit!

Even the weather proved unpredictable. We were told that July should bring on average 60 mm of water, but the month was not half over when we arrived and three times the rainfall had been measured. Parts of the Sports Flying Field were under water and even the camping area was boggy. That did not hamper the test flying because the temperatures were into the 30s, and in the right place you could throw a wing bag into the air and watch it climb.

The organizers were praying that the towing areas would dry out, and indeed they did. We did not have the electrical storm, but we had two heavy rain showers and some nasty gusts which took the roof off one shelter and blew down many of the tents and gazebos.

Predictions of flyoff places proved unreliable, and Yann Bocquet from France let me down. His team-mate Lionel Fournier made up by winning a place. I did not reckon on the Israelis doing as well as they did. They happened to be

staying in the same block of apartments as me, 8 km north of Osijek. Their success owed much to the “Valvoline” plum brandy which the landlord served us with breakfast. First morning nobody dared to taste it, but by Friday we were all at it.

The Dutch were their happy and busy selves as usual, but otherwise they had a sad contest, none of the seniors making the flyoff and only gaining eighth place in the team contest rather than the podium place I wanted. Be warned they will do better in Slovakia next year!

I’d wished for two flyoff places among the four Brits, but that was not to be by a long chalk. Happily the team’s spirits remained high, despite a bit of carnage. There was none of the silly niggling of previous years and team manager Austin Guerrier only got angry with two delayed launches when concentration went missing.

Mike Raybone was unlucky during practice when his *Starlight* was left propped against a tent in the heat of the sun, leaving a wing tip panel swollen and bent over into an anhedral shape. Some

rebending and coaxing made the best of a bad job and the model was flown in practice just in case it was needed. Then in the late afternoon Mike caught the tail of his best model in the topline, the model was uncontrollable and went in upside down in full crow between the tents. We all feared the worst, only to find that it had landed in soft ground unharmed. In the end Mike finished best in the team with 24th place.

Adrian Lee had a distant mid-air in the first round when all looked set to fly out the slot. His reflight proved tougher. In the collision, the outer panel flew off, leaving the rest of the red *Graphite* to twirl down fairly gently two or three fields away from the airfield. The tip was found two days later, but the valuable bit was still lost when we left Osijek in what might have been shoulder height sunflowers after several searches and an overhead sweep by a light plane. After nine rounds Adrian was still in with a chance, but Thursday saw that dwindle in the tricky winds.

Neil Jones had a mixed bag of good and bad flights.



Oliver Ladach, second placed junior, after his triumph, only twelve months after starting F3J. Photo by Sydney Lenssen.

Amazingly he came back home with highest spirits, determined to tackle F3J in Europe and improve. Two of his three models were broken, one hitting a factory half a mile away after returning in unforgiving sink - two others did not make it back in that slot. Then a collision on launch took the nose off another trusty *Pike*. By that stage all was lost for the team score and he dropped out.

With one fewer bad flights — he got two 400 odd — Jonathan Wells could have made the finals, coming in at 15th. His flying came on leaps and bounds over the week, he flew at distances far beyond my eyesight, and put in a polished performance which should make his parents proud. I hope he will be back next year, and that he learns to make himself less reticent, fully confident that he can win.



At last, I got something right by predicting that the Czechs would get two places in both the senior and junior flyoffs. Special congratulations to Jan Kohout for pushing Philip to his limit in the flyoff. Jan told me in a whisper before the contest started that he was there to enjoy himself and wanted someone else to become champion. But then he flew as hard as anyone, particularly the round in which he allowed everyone to launch in the cross winds, waited to make sure that nobody was left to launch, and then did a wonderful low level sweep right across everyone else's lines, barely losing 5 metres of line. Then he pitched straight into wind to achieve double the height of his rivals, winning that slot with ease. A champion in all but result!

I predicted that the Slovak team would be a force at championship level, and they were outstanding. Jan Ivancik came fourth in seniors with Juraj Adamek placing sixth, Tibor Duchovny won the juniors and the senior team came second in the team prizes.

Team Lithuania was not in my reckoning and they did not place. But they should have been pleased with their successes, placing ninth team overall and thoroughly enjoying what must have been unusual weather for them. I should also correct my previous gossip, because they do not produce home grown moulded models as far as I know. It was Estonia, home of the *Tragi* range that I was crediting them with earlier.

It is hard to know how to console the Turks. They arrived with the usual panache and entourage, they flew with verve and enthusiasm, and created the same excitement and bonhomie for all the contestants. They beat the Poles by coming in 12th team place. They let me down by not securing one flyoff place.

Better luck next time, but my best wishes will be as nothing compared with the determination which they will inflict on themselves for the next 12 months.

Final self-recriminations are for top places. Germany proved me wrong and did win top place for senior and junior teams. Big congratulations for

Thomas Rossner and Reinhard Vallant for managing their dedicated teams. They really do work hard and systematically to remain top F3J flyers, and a string of juniors is waiting their chances to take up the challenge.

I predicted the Czechs taking top spot and they came in late at third place. Primos Rizner was my tip for champion, and sadly did not make the flyoff. His first flight was in tricky conditions, coming in with many others halfway through the slot, only to see another flying the whole slot. That really put the pressure on, and only in the ninth round did he slip again out of the 990's and lost his way. His team-mate Primoz Prhavic did better, scraping into the flyoff and coming seventh at the end.

Faithful gossip readers know that mine are only guesses. But this year's record should warn you not to bet too much money next time.

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Brickbats and bouquets: the biggest bouquet should go to Marin Kordic and his team of organizers who worked long hours before, during and after the contest, ever eager to

ensure that everyone felt at home. Also to the City of Osijek, not so long ago a community locked in battle and strife, now a proudly independent part of Croatia, eager to move on and welcome all visitors. The town was dotted with large posters telling everyone that they were home and hosts to the F3J Eurochamps. I am sure that all participants will thank you all for being such energetic hosts.

No personal brickbats this time, but a big one for the mosquitoes which did their best to discourage all skin exposure. One evening the airfield was doused in thick smoke belching from a tractor and trailer in an attempt to discourage the biters, and then we were told that it would only kill the newly hatched. "Too late" we cried as we scratched our itches!

Roll on Martin next year and the fifth world F3J championships.

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# Schweizer SGM 2-37 Motorglider

## USAF Designation: TG-7A

Text and photos by Mark Nankivil, <nankivil@covad.net>

The TG-7A was designed by the Schweizer Aircraft Company specifically for the U.S. Air Force Academy. The design borrows parts from a number of different aircraft with the nose cowling coming from the Piper Tomahawk, the wings were modified from the Schweizer 1-36 Sprite (with extensions and cuffs to enhance stall characteristics) and the tail was originally used on the Schweizer 2-32. The TG-7A was used in the Academy's "Soar-For-All" program to simulate the flight

characteristics of the TG-4A which is more familiarly known to most of us as the 1-26. By the use of a motorglider, the number of sorties needed to practice landings and approaches was reduced and overall safety improved.

The TG-7A was replaced as the Academy's primary motorglider trainer by the TG-14A (Grupo Aeromot Aircraft Corporation of Brazil AMT-200S Super Ximango) in the Fall of 2002. The TG-7A was last flown by the U.S. Air Force

Academy in April, 2003. Nine examples of the TG-7A were acquired by the U.S. Air Force Academy.

The example covered in this set of walkaround photos is now owned by the Tuskegee Airmen National Historical Museum, Inc. of Detroit, Michigan <<http://tuskegeeairmen.org>>, and was photographed at the Selfridge ANGB 2005 Airshow, May 21-22, 2005.

Schweizer 2-37 Motorglider, USAF Designation: TG-7A

Span	18.14 m	59.5 ft.	Wing loading	41.64 kg./sq.m	8.99 lb./sq.ft.
Area	18.18 sq. m..	195.7 sq. ft.	Engine	83 kW/ 112 bhp Lycoming O-235-L2C, 4 cyl.	
Aspect ratio	17.9		Performance	L/D - max. 28, Min. sink - 0.96 m/sec., 3.16 fps, 1.87 kt.	
Airfoil	Wortmann FX 61-163		No. of seats	2	
Empty weight	544 kg.	1200 lb.	No. built	12 total, 9 in the United States	
Payload	213 kg.	470 lb.	Designer	Leslie Schweizer	
Gross weight	757 kg.	1670 lb.	Serial Numbers (known)	81-0886, 81-0887, 81-0890, 82-0039, 82-0041 (N27AF),82-0043 (shown), 87-0761 (N765AF)	
Engine	83 kW/ 112 bhp Lycoming O-235-L2C, 4 cyl.			87-0782 (N762AF)	

More info on the U.S. Air Force Academy "Soar-For-All" program and the aircraft used can be found at <<http://atlas.usafa.af.mil/wing/34og/94fts/>>.





