Radio Controlled Soaring Digest

August 2008 Vol. 25, No. 8

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Front cover: Linus Forsberg's Ava-e stands out against the clouds. For more information on this model, see page 45 of this issue. Sony DSC-H7, ISO 100, f5.6, 1/1000 sec., 70 mm

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R/C Soaring Digest

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In the Air

The US F3J Junior Team did very well at the World Championships in Turkey. Fellow Seattle Area Soaring Society member Brendon Beardsley won the Silver Medal, AJ McGowen the Bronze. The Junior Team itself won the Silver Medal. Our sincere congratulations to the Junior Team for their fine performance under what many consider to be challenging conditions.

One negative arising from the experience was the loss of Brendon's aircraft by British Airways on the return trip. That's right, two crates weighing about a hundred pounds each have disappeared without a trace. Although insured against loss by British Airways, the insurance will not nearly cover the equipment replacement cost. Additionally, Brendon's winning aircraft was autographed by a large number of WC participants, and that cannot be replaced. One of our local TV stations interviewed Brendon in hopes of getting viewer assistance, but as of this writing no items have been recovered.

Time to build another sailplane!

Wings Over Wilson presents

Midwest Slope Challenge 2008

Coverage by Alex Paul, photos by Alex Paul and Dave Garwood

I made it to the MWSC in Lucas Kansas again in May this year.

The last event I attended was in 2005, and I have to tell you I had been waiting for the next chance to fly from the Bahamas and go to Lucas for the slope flying, seeing good friends, and for the calming atmosphere that the landscape and folks from Lucas bring to everyone that shows up.

The turnout was excellent between spectators and pilots, but it would have been great to see more of you characters. It isn't just a contest, it is a local happening, and the slope soaring around Lucas makes it worth the trip.

I got a call from Dave again asking if I could make the drive out to Kansas for the event. I pretty much said "Yeah, man!!!" before it was out of his mouth.

I booked my flight and flew to Albany New York. Dave and I were on the road the next morning.

The States went whizzing by as Dave and I were our usual talkative selves. I hardly noticed much until we hit the Kansas State line. We went by a number of wind generator fields that stuck out like something from a scifi movie. Very cool to see something sensible being done about our need for energy! I may be out of touch, but it brought a huge smile to my face to see these massive machines that to my eye are a thing of beauty.

We got off the Highway and drove down Rte K18 heading to Lucas and once again the sheer number of hills blew me away…

Nothing seems to have changed in the three years since first going to the event. The winds were blowing at around 20 and so before heading to the cottage we rented with the other "New York Slope Dogs," Dave and I stopped at the "Main Site" on a hill top at the Wilson Lake Dam. We tossed a couple and flew with some of the local flyers until dark. It was a great prelude to the days ahead.

All of the events were flown in two days this year, as the winds were cooperating. There were a couple of lulls, but they were short lived.

The contest was well organized and run by Alden Shipp, Erik Eaton, Larry Purdy, and Kent Palmer, with the help of seasoned veterans, made up of both local Lucas friends, and members of the "Wings Over Wilson" soaring club. They were all outstanding. The CD for the event this year was Mike Tallman from the AMA.

Over the two days of contest flying there were as many as a hundred spectators with twenty six pilots registered to take part in the contest. It made the event more personal as it was easy to get to know everyone, and share laughs as well as battle it out.

Pilots meeting, Minooka Hill.

The first day of competition was on Friday morning with winds out of the North West at 5 to 12mph, and so the chosen location was at (Jim) Lawson's Hill.

Combat was the first order of the day, and it was an excellent showdown. The winds were light enough to keep the action in close and the competition was exciting.

I got a kick out of watching launches being made like throwing darts, going for the kills on launch.

Everybody had a great time, and between the laughing it up and the competitive spirits it was a very successful event.

Five rounds were completed and at the end of the competition David Day got first place, Cory Shantz second place, and Joe Chovan with third place.

With the winds dying down the event for the day was called, but of course a number of us stayed and flew the light air stuff, and had a great time after the day's official event.

This page and opposite: Scenes from Friday's combat competition. Photos by Dave Garwood.

(The author is the Harvard t-shirt-encased guy launching the red 'wing in the top picture.)

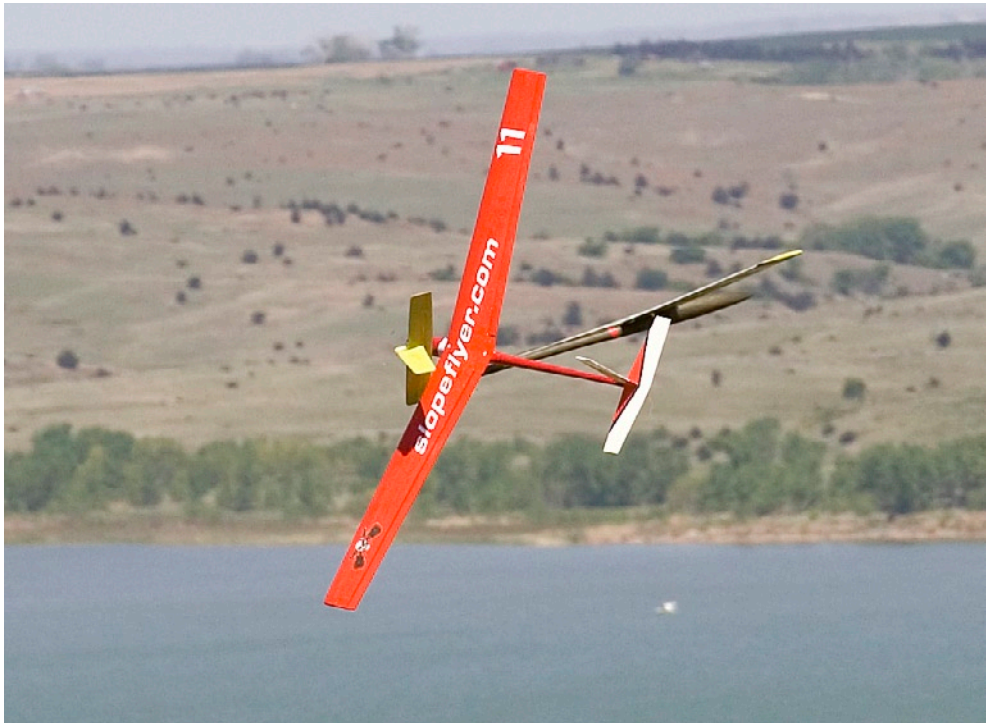
Saturday morning was held at Minooka Hill, with winds out of the North East at 10 to 20 mph.

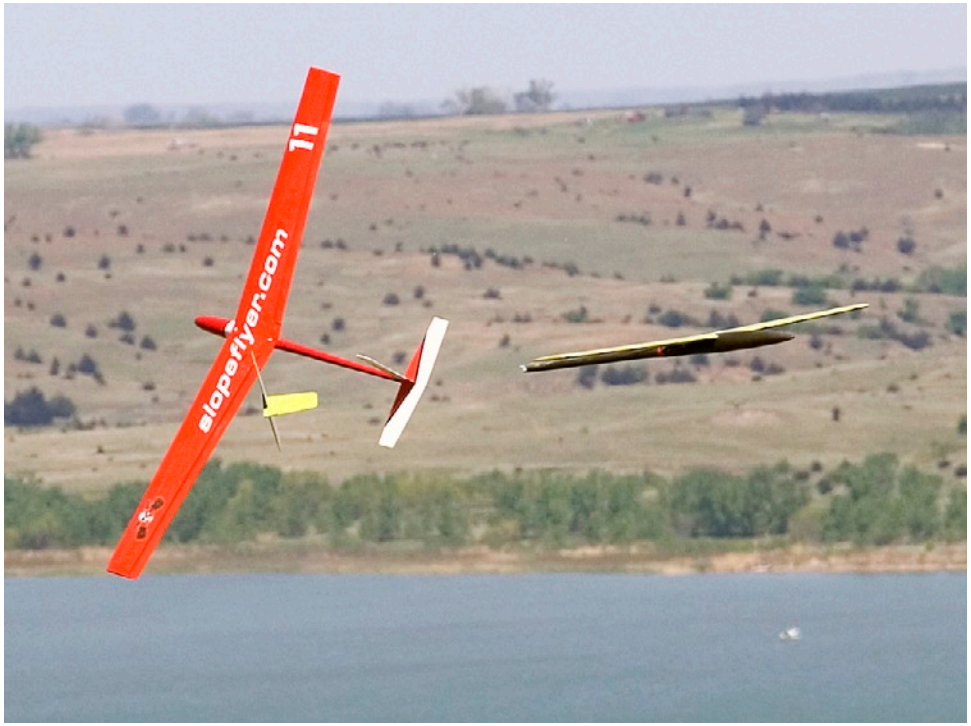
The first event was ODR.

The wind direction was variable, but it was another fun and successful event.

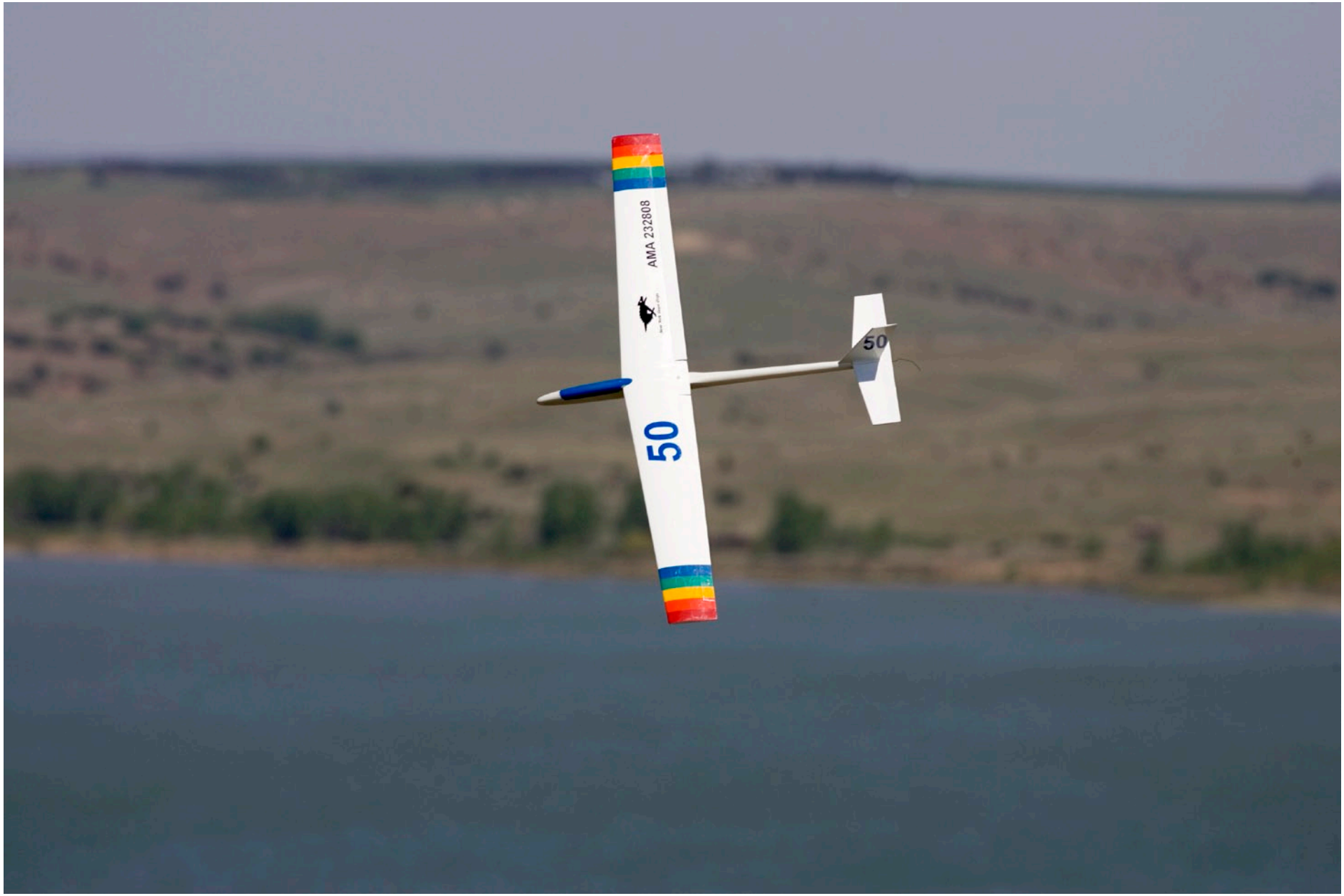
After five rounds of some good close racing between 20 competitors, the race was over and the victors were Joe Chovan first place, flying his CR Fun One; a tie for second between Larry Blevins and Jack Barry, both flying Magnum Models Cobra Racers; third place went to Erik Eaton flying his new creation, the Bad Voodoo; and fourth place went to Jim Baker.

This page and opposite: Scenes from the ODR race.





A mid-air, captured during one of the ODR races.



Joe Chovan's ODR Fun One, captured during the winning lap.

Saturday after the ODR races were concluded, the Unlimited races began. The landing zone is a bit tight for the bigger ships at Minooka, but the brave carried on.

There were eleven pilots competing.

With 27 heats and with the wind direction changing slightly, it made the contest a little more interesting.

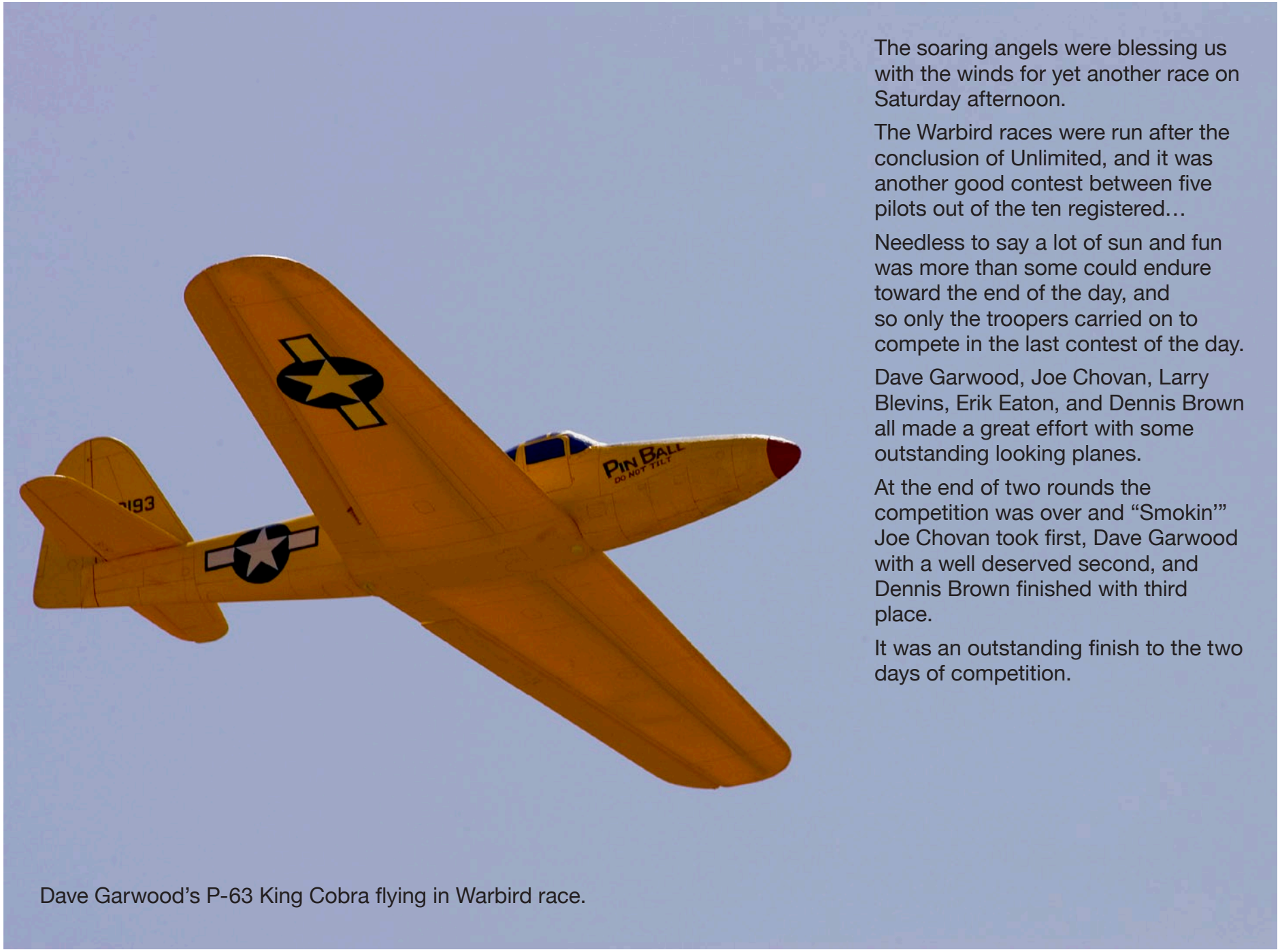
Most of the runs were excellent and the hot and heavy heat of the Unlimited contest was between Joe Chovan, and Dennis Brown.

These guys were neck and neck, and nose to tail, pylon to pylon.

Joe was the victor when it was over, but it was a very close race.

Joe Chovan took first place, Dennis Brown with second place, Joe Hosey took third place.

Joe Chovan and Dennis Brown battling it out in Unlimited.



Dave Garwood's P-63 King Cobra flying in Warbird race.

The soaring angels were blessing us with the winds for yet another race on Saturday afternoon.

The Warbird races were run after the conclusion of Unlimited, and it was another good contest between five pilots out of the ten registered…

Needless to say a lot of sun and fun was more than some could endure toward the end of the day, and so only the troopers carried on to compete in the last contest of the day.

Dave Garwood, Joe Chovan, Larry Blevins, Erik Eaton, and Dennis Brown all made a great effort with some outstanding looking planes.

At the end of two rounds the competition was over and "Smokin'" Joe Chovan took first, Dave Garwood with a well deserved second, and Dennis Brown finished with third place.

It was an outstanding finish to the two days of competition.

Joe Chovan's P-80 flying in the Warbird race.

Late Saturday, and Dave Garwood's P-63 and
Joe Chovan's P-80 practice for the Warbird race.

The awards banquet was held at the local Methodist Church assembly hall and dinner was provided by the K-18 Diner. Prime rib, with all the fixings. The dinner was worth the trip!!!

The evening started out with a contest between individual table teams, going for the longest duration flight of a helium filled balloon with an adjustable ballast system. Clay on a string. It was yet another good time. “The Stevenators” team took the win with a flight of two minutes 36 seconds. The prize was “Chicken Poop” brand Chapstick.

Speaking of prizes there were a lot of very generous donations made by manufacturers and local Lucas businesses.

There were several model kits, one prebuilt composite glider donated by Justin Ammon, and many more. It seemed there was a prize to be had for everyone in attendance.

The awards were handed out after dinner, and the Grand Champion prize winner of the event was Joe Chovan. Joe received a JR 2.4 GHz. 9303 donated by Horizon Hobbies and the WOW club, for his efforts. Joe was a very deserving and happy guy.

I know that we are all thankful to have so many generous people and companies donating time and products to sweeten the pot. Thank you all.

Alden Shipp, along with the members of Wings Over Wilson, the wonderful folks in Lucas, and the pilots from all over, make this annual event a real pleasure to attend.

A special thanks to Jack at Leading Edge Gliders is also in order. Jack always makes sure that the event is a fun party.

His home and business are always open for us just to kick back, relax, and have a great time. Thanks to you, Jack, and again to all of our friends in Lucas.

See you all next year!!

MWSC 2008 Results

Winners

Combat Match
1st David Day Crosby, TX, Combat Wings Cyclone
2nd Cory Shantz, Littleton CO, Combat Wings XR
3rd Joe Chovan, Syracuse NY, Windrider Aviation EPP Bee

One Design Racing Class
1st Joe Chovan, Syracuse NY, CR Aircraft Fun-One
2nd Mike Barry, Lincoln NE
2nd Larry Blevins, Knoxville TN, Magnum Models Cobra Racer
3rd Erik Eaton, Hays KS, Eaton Air Bad Voodoo
4th Jim Baker, Lincoln NE, CR Aircraft Fun-One

Unlimited Racing Class
1st Joe Chovan, Syracuse NY, Soaring USA Trinity
2nd Dennis Brown, Wichita KS, Mike Bailey 100-Incher
3rd Joe Hosey ,Topeka KS, Steve Drake Gulp

Warbird Racing Class
1st Joe Chovan Syracuse NY ,LEG F-80 Shooting Star
2nd Dennis Brown, Wichita KS, Cauldron 714
3rd Dave Garwood, Glenville NY, LEG P-63 KingCobra

Overall Champion 2008
Joe Chovan, Syracuse NY

Workers

CD Mike Tallman, AMA Dist 9 VP, Wichita KS
Larry Purdy, Far Pylon Judge, WOW VP, Russell KS
Kent Palmer, Far Pylon Flagman, WOW Field Safety Officer, Lucas KS
Scott Sielge, Far Pylon Flagman, WOW member, Osborne KS
Wilson Hardy, Far Pylon Flagman, Lincoln NE
Randy Linderman, Far Pylon Flagman, Topeka KS
Erik Eaton, WOW President, T-shirt designer
Kent Palmer, Field Set -Up and Equipment
Barry and Amanda Maupin, K-18 Cafe Banquet, Lucas KS

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Uncle Sydney's Gossip Column

F3J World Champs

Bene clinches Feigl triumph in Turkey

Sloping roof leads to tightest of margins

Sydney Lenssen, sydney.lenssen@ntlworld.com

Benedikt Feigl is the new F3J world champion. David Hobby lost his chance of a hat-trick of championship triumphs by only 15.3 points in ninth place! After a six round flyoff in which any of the eleven pilots could have won, Benedikt and Jiri Duchan were level with 4,997.30 each, the German pilot winning the crown with a better score in the preliminary rounds.

So the 2008 and best organised FAI F3J championships ever brings yet another success for the Feigl family and NAN's Xplorer. With new world champion Bene, his brother Sebastian who is 2007 European champion, and father Peter - no mean F3J pilot himself - you wonder what is left for the Bavarian Eagles to achieve.

The Gallizia family from Italy is also returning from Turkey triumphant, Giovanni Gallizia came from eighth place in the preliminary rounds to win the flyoff and become junior world champion. Father and senior pilot Guiseppe Gallizia had a hard time with penalties in the senior contest, but he chased hard with his three sons Giovanni, Marco and Carlo to take the Italian juniors to fourth team place, a terrific achievement. The cheers for Giovanni's top spot were heard all over the field!

Team champions in both seniors and juniors are Germany, both by wide margins, the three senior pilots having dropped 60 points out of 33 flights, less than two points per flight. The juniors dropped 370 points, again after 33 flights, which is also remarkable. The team wins prove the strength in depth of the German F3J league and also the thorough preparation and leadership of team managers Karl Hinsch and Tobias Lammlein and their lusty towmen.

Uncle's merit awards

With 122 pilots challenging for world title recognition, there can only be two individual winners and two teams of three for the podium. The reality is, of course, that many others' achievements merit recognition. I mention just a few.

Tobi Lammlein, junior world champion in Lappeenranta and in Adapazari senior pilot and German junior team manager, had perhaps the most successful week in Turkey. Due to pressures of work, Czech Jan Kohout had to drop out, and since he and Tobi were my favourites to win the top prize, I found myself rooting for Tobi.

In the precontest F3J Spor Yapi Cup, he did not do so well with 21st place. In the WCs he improved with third place in the preliminaries and again third in the six round flyoff, three points below the champion. Not bad. Nobody was busier on the flight line, for Tobi was coach

Team Gallizia with proud junior F3J world champion Giovanni (centre rear) just minutes after the flyoff results were announced. Grandfather Gallizia, who had brought the whole family to Turkey in April for the Eurotour contest, had to stay at home "working" this time and missed his grandson and family's triumph.

and spotter for Philip Kolb and as team manager for the juniors he was out there helping Johannes Weber and Reinecke brothers Christian and Manuel.

In the surprise Multiplex Easyglider competition, held after the first two flyoff rounds on Friday, he missed a place. Then in Saturday's final event, the ASC Cup where the top five seniors and juniors had a 20 minute flyoff competition, he won with his High End. At the end of it all, he apologised for letting me down in the WCs. No need - he gave us all a treat.

Sven Zaalberg was on my flyoff shortlist and apart from the New Zealanders and Colin Lucas, UK's team manager and Sven's flying mate when he lived in England, most observers saw him as a rank outsider. Two very young children, his lovely wife Coral and a recent house move had prevented too much preparation. But he flew his socks off and taxed the air reading capacities of Joe Wurts to find himself leading in many of the preliminary rounds, and winning fourth place in the flyoffs. If he had not slid a few centimetres too far to score 95 in the sixth round, he would have been champion. What a week to remember!

Another busy man was Joe Wurts, between US and NZ nationalities and excluded as a WC pilot until next year, he came fourth in the preliminaries of the Spor Yapi Cup and ended up in fifth place. In the champs he was on the line far more than most, team manager for the New Zealand pilots, spotter for both Daryl Perkins and US's gifted junior "AJ" McGowan, who with his long hair and furry "keep cool" hat, came third junior. Anyone who doubts the requirement to have a gifted coach if you want to win, need only check on Joe's input for the week. For the record, when NZ needs clashed with US, then his new country allegiance had priority.

Daryl Perkins was the "contest brute." He flew Supras and in practice before the event he'd broken a tailplane on launch and needed a replacement. I took out my spare from England but he'd already got another one. Then in Round Eight in gusty winds with Cody Remington stretching the line to breaking point, he tried another rocket launch and the tailplane burst company at the start of the zoom. He landed the wing safely and quickly, model two was ready, another rocket launch and the zoom resulted in a flurry combining loop and roll. Another broken tailplane with over nine minutes to fly and two launches gone.

This time the tailplane stayed on with the right hand tip bent down 20 degrees, the fold slightly askew. Amazingly the abused Supra was still in control. Daryl coaxed it to the trees and rode the waves, eventually nursing it into kinder air and even gaining the odd 50 metres to fly out the slot. The flightline manager ran over and followed the flight to check that all

parts of the plane were still attached before landing. Flight time: 9 minutes 15.8 seconds and one relieved pilot flat on his back.

Will this four-time F3B world champion learn to temper his strengths? Good news is that Daryl is determined to be back at the next WCs in France. He has a burning ambition. He wants a fifth world title, preferably in F3J.

Jaroslav Vostrel from the Czech Republic made the flyoff along with team-mate Jiri Duchan, both flying in their first WCs. But Jaro makes my merit list because as part of the Samba team, it was the Vostrel family who produce the Pike Perfects which were by far the most numerous at the event. Managed by Jana Vostrelova, the Czech team also placed second in the team champs with outstanding performances by Jiri and Vitezslav Sterba. We might yet see the Czech national team comprising exclusively of Vostrels, Vlastimil and Jana getting ever better pilots and placing 33rd and 35th in the Spor Yapi Cup.

Mathew Goodrum, aged three I think, is on my list for allowing mum and dad to fly for South Africa and only once or twice interfering for the needs of nature. His dad Craig was another of my long shots for the flyoff and made it, taking fifth place finally, less than six points behind the winner, but with a complete model write-off in the second round after brushing with Primoz Rizner on launch and losing radio control. Primoz was lucky and flew out. Craig must regret losing the odd second per flight because he scored 100 point landings otherwise. His time in most rounds was 14.55 plus.

Serdar Cumbus, the gentle giant, was for me the unsung hero of the WCs. He also spent much of the time sat on the flightline counting down in a lingo which I should have learnt by now and backing Larry Jolly's coaching for Turkish seniors and juniors. Everybody's thanks should go to Serdar for chairing and leading the organisation of the whole event over the past couple of years.

Towards the end of the contest, a memento book was passed among the 25 competing teams, and team managers

Cody Remington returning to the pits with Daryl Perkins' wounded Supra, tailplane askew, still able to score 9 minutes plus after relaunch.

President of the organisation committee for the 2008 F3J WCs, Serdar Cumbus, a pillar of support for Istanbul's Soarist Club.

contributed their comments, mostly in languages which I could understand. Almost all ranked this championship as the best organised to date. France has a hard act to follow in 2010, but my bet is that they will succeed!

Alex Wunscheim and Marin Kordic were the flightline managers, pristine in their red shirts, ever patrolling the lines for early launches and late landings, the first time that I have seen this as a separate dedicated task at any championship. It proved to be a welcome and effective innovation. Their duties were not simple because they were required to police low flying and inflict 100 point safety penalties.

That leads me to the one criticism of the whole event - a serious one. It was caused by the positioning of the super tented hangar which provided lots of comfortable space for the competing teams, for storing models, for relaxing when possible, for meeting rival competitors and exchanging information. But the long roof ran parallel and alongside a line of trees, ten metres or so higher, producing a highly efficient slope for soaring whenever the afternoon winds were drawn across the field from the north.

This lift generator became the "get-out-of-jail card" for many if not all the pilots. Having lost their lift far downwind and struggling to make it back for seven or eight minute flights, they could then play the ridge, and more often than not, they flew their slots out. For other pilots, it was even more of a lifeline. One pilot in the flyoff, who shall remain nameless, reckoned he spent seven minutes navigating along the top of the tent, and others did the same.

Adrian Lee, who led the UK efforts, rarely needed the slope lift and when he did he tried and succeeded a couple of times in getting away again to comfortable height by catching one of the thermal bubbles which flowed through. Ian Duff and Brian Johnson reckoned the risks were too great, they were untutored in the tree technique anyway, and it wasn't cricket!

It was this lift generator which caused troubles for flightline managers Alex and Marin. Even before the contest, the slope lift was well recognised as a rescue haven. At the first team managers briefing, they emphasised that tent and tree sloping would be watched, primarily because it could have been a safety hazard. At times as many as ten gliders were dodging and weaving a few metres over the tent, and it was potentially dangerous. The "whoops" and "aaahhs" of the spectators proved how entertaining and fascinating the antics proved to be.

So it was made clear that penalties for overflying safety areas by less than three metres would be applied strictly although it was going to be difficult to judge. If gliders came over the tent directly for

The team accommodation and official tents and the line of trees which produced reliable slope lift whenever the north winds blew, which sadly was most afternoons.

a landing, then that would be OK. But if they were utilising the slope lift and came below the sight line from the safety corridor to the top of the trees, then they would have 100 point penalities.

On the first afternoon six pilots were penalised. Later in the week several more suffered the same. The judges were reluctant to punish, they were conscious that they were not infallible. They did not want to spoil the chances of any pilot. They tried apply the rule consistently.

The escape card was sad for everyone, and it diminished the quality of the competition, so perfect in every other respect.

Mustafa Koc let me down by not finding a place in the flyoffs, especially after this year's fine run of successes in the Euroleague. Maybe the pressure was too great, but I think not, for he proved as genial a host as ever. He must have been proud too for daughter Esra who flew out most of her slots and mixed so happily with many of the pilots. I know he wants to play down his interests in the sponsors. But for once, I want to say a warm thank you, and I know all teams will join me.

Snap reactions

Before moving on, I want to deal with the Supra tailplane problem. I happen to fly a Supra from Vladimir's Model because I find it the most comfortable (and for me most successful) glider I have ever flown. I have no vested interest or connection except that I have known Vladimir for a long time and Barry Kennedy of Composites fame, the US distributor, for a couple of years. The reporting of flight times, scores, triumphs and disasters within minutes over the Internet, which was another successful feature from Adapazari, portrayed Supra problems

largely undeserved. That was the first topic I was questioned about by friends when I got back home.

The facts are that Supras rotate on launch very rapidly, and it is best to launch overarm if you can. If the tailplane hits the head or shoulder of your launcher, then you are likely to crash. I know - I've done it. Supra can also launch faster and higher than say a Perfect, if you are a skilled gorilla. But you risk pulling the tailplane off its platform.

Vladimir, Barry, Joe and Daryl all analysed the tailplane problem. Next version of the tail will have carbon cloth around the bolt hole tied into the main spar, and that should prevent the bolt simply tearing through. That should also prevent the tail actually creasing with the rapid switch of lift from bottom to top surfaces in a mega-zoom launch. I am sure that Vladimir will detail his modifications and retesting shortly.

Serious thoughts for future F3J

Jury members Tomas Bartovsky, Raymond Pavan and Gerhard Wobbeking had a couple of appeals to reject but were otherwise left in peace. Chairman Tomas called his technical meeting where he spelled out changes for next year which most people knew about already. More interesting discussion followed on flying below the three metre margin over the safety areas and launch corridor. Events in the contest had provided ample proof that such a rule was impossible to measure and administer. How can you honestly check that a model flew less than three metres above someone's head. You do know if it hits him/her!

The significant change, now up for consideration by CIAM's technical committee, is whether F3J should follow F3B safety philosophy. Really punishing penalties should be given to a pilot if his model actually hits an object in a safety area, and disqualification if the model strikes a person. Team managers were in favour of dropping the minimum three metre rule as too haphazard to apply and the 100 point penalty as insufficient a deterrent. Anticipate new rules in 2011!

CIAM was also interested to test opinion on hand towing versus winch launching, or allowing the option for official FAI contests. I was surprised when a show of hands showed a two to one vote in favour of retaining hand towing. I expected the opposite after the rejection of shorter towline length earlier this year and the fact that most countries run their team qualifications with electric winches.

One discussion which brought unanimous approval was that towmen and spotters should receive far greater and deserved recognition for the vital parts they play. Contest organisers are encouraged to seek all means to signify appreciation and I hope a sensible convention will evolve.

Extra curricular activities

As well as the Spor Yapi Open contest which preceded the WCs, Serdar Sualp and his team organised a series of fun events; the Easyglider competition sponsored by Multiplex, the ASC 20 minute flyoff event sponsored by Serdar Cumbus, and a two man towmen competition where national team towers had to drag a quad bike driven by their team manager as far as possible in five seconds. Much cheating ensued.

The ASC contest proved what had already become obvious: it makes little or no difference in sunny thermally conditions if you run 15 or 20 minute flyoff slots. All the skilled contestants find it as simple to fly out 20 rather than 15 minutes, even with a two second launch.

The Easyglider event was an eye-opener and great fun, well worth repeating given the chance. The ten pilots - five top seniors and juniors - were given their Easyglider Pro kits. As supplied they have four servos ready fitted. Pilots had one hour to install their own receiver and test fly, then had two ten minute slots launching from a standard cotton covered bungee and 150 metre lines. You could launch as many times as you like with the last flight counting.

First pilot ready was Jiri Duchan, in about 10 minutes flat, and he dashed out and gave it a handlaunch, not a throw. Up it sailed and he clocked over two minutes.

Easyglider champions about to start their contest. Most of the pilots flew out their two ten-minute slots from a bungee launch. Ex- world champion David Hobby rescued his week by winning.

Next flight was up and away over the trees, sky's the limit. The others were much the same.

The Easygliders proved well able to hook thermals and fly away. The two round contest was flown out by several pilots for the full slot time, the only difficulty was keeping your eyes on your own white foamie and its size at distance. Yet we all spend 15 times as much to buy our Perfects, Xplorers, Supras and Espadas etc. I've had an electric Easyglider and I shall now buy a plain Pro to follow. Good marketing, Multiplex!

Uncle's betting shop

This year my senior flyoff forecasts were not up to scratch, but my team prize guess of Germany was right, in fact doubly so if you count the juniors. First problem was Jan Kohout not turning up (and I took my drums). Flyoff places were set at 11 not 12, so that evened matters for everyone who named Jan. One of my certain bets was Cody Remington who up to Round 11 was well in, even after a zero in Round 5.

Round 12 spelled disaster when he landed out. He sat down on the flight line in despair, head in hands, hardly believing what had happened. Half an hour later, all was well again - almost anyway. He had given his flyoff place to Daryl Perkins, a slight consolation. Cody's mum, down to earth as ever, told me that it was as important to learn to lose as well as win.

Back to the betting, my score this time was five from 11, many readers scored six, and joint winners with seven are Margaret Pettigrew from Australia and Larry Jolly from the US who was there all week trying to fix the results. I hope for more entries next time around, and by then I hope I shall have delivered the two prizes.

Roll on next summer for the Polish Eurochamps and in 2010 to Jura in France for the seventh F3J world champs!

End of Gossip, but four pages of additional photos follow... ■

Craig and Michelle Goodrum relaxing during the six round (plus two reflys) flyoff and keeping the spot warm. Seconds before they'd been cuddling, then the papparazi appeared!

Murat Esibatir on the sticks and Larry Jolly, Turkish team coach, twiddling his thumbs.

Unseated double world champion David Hobby who sadly missed his hat-trick but flew as impressively as ever.

US Team manager Jim Monaco preparing for Daryl Perkins landing i he had to land over the launch corridor. Or maybe he was looking for something to do during the flyoff marathon.

New Zealand's deadly trio who but for one 95 landing would have clinched the title for Sven Zaalberg.

Second place champion Jiri Duchan from the Czech Republic flying in his first WCs. He drew in the flyoffs with Benedikt Feigl but placed lower in the prelims.

Second Czech flyoff pilot Jaroslav Vostrel with sister and TM Jana and her boyfriend pilot Vitezslav Sterba, not a care in the world!

Daryl Perkins who managed to keep his repaired tailplane on for the flyoff, guarded by Cody Remington who launched when Joe couldn't and TM Jim.

Philip Kolb, more often than not a winner, did not have quite the usual success in the week, with spotter Stephan Lammlein stepping in to help with three German pilots in the flyoff.

New F3J world champion 2008 Benedikt Feigl, still hardly able to believe that he had done it!

On the 'Wing...

By Bill & Bunny Kuhlman, bsquared@themacisp.net

Redwing XC, Part 4

After nearly a year of work, our Redwing XC has finally taken wing.

At the end of the last installment we mentioned there was still quite a bit of work to do, including hollowing out the fuselage side blocks, building the fin and rudder, and finishing the upper leading edge sheeting.

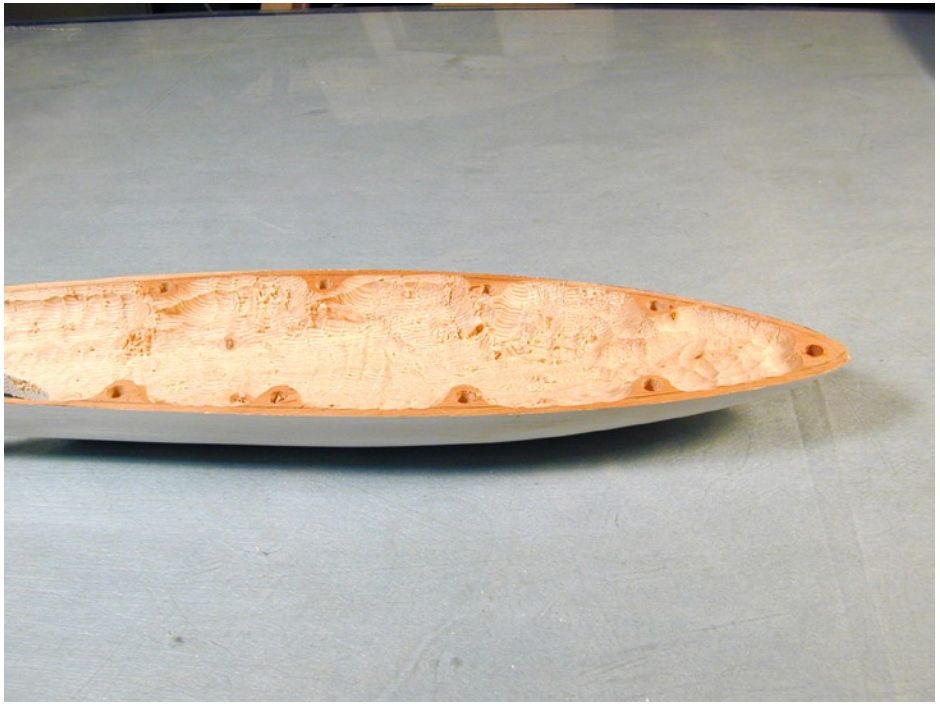
The fir blocks that form the nose structure, already shaped on the outside, were hollowed out using a drill press and a round router bit. Our use of fir for these pieces mandated power equipment, and using a half inch diameter blade made quick work of the process.

As you can see from the photos, we started out by passing the piece beneath the blade with a bit more than a quarter inch taken out. After going over the whole interior with the blade set at this depth, the blade was lowered about a quarter inch further, and the piece passed under it again.

The last passes were made with the blade set slightly more than one eighth of inch above the table surface. By keeping the outside surface directly opposite the blade “flat” on the table surface, we could rough cut the interior surface to form a shell somewhat thicker than we wished.

Not all went smoothly, however. The fir tended to fracture the sides of the pin holders, and we had to mix up epoxy and microballoon patches. The epoxy and mcroballon mixture was spread in the area to be restored, then the shell was placed on a large piece of waxed paper while the epoxy cured. This procedure left a smooth surface against the keel, and the excess was easily trimmed away.

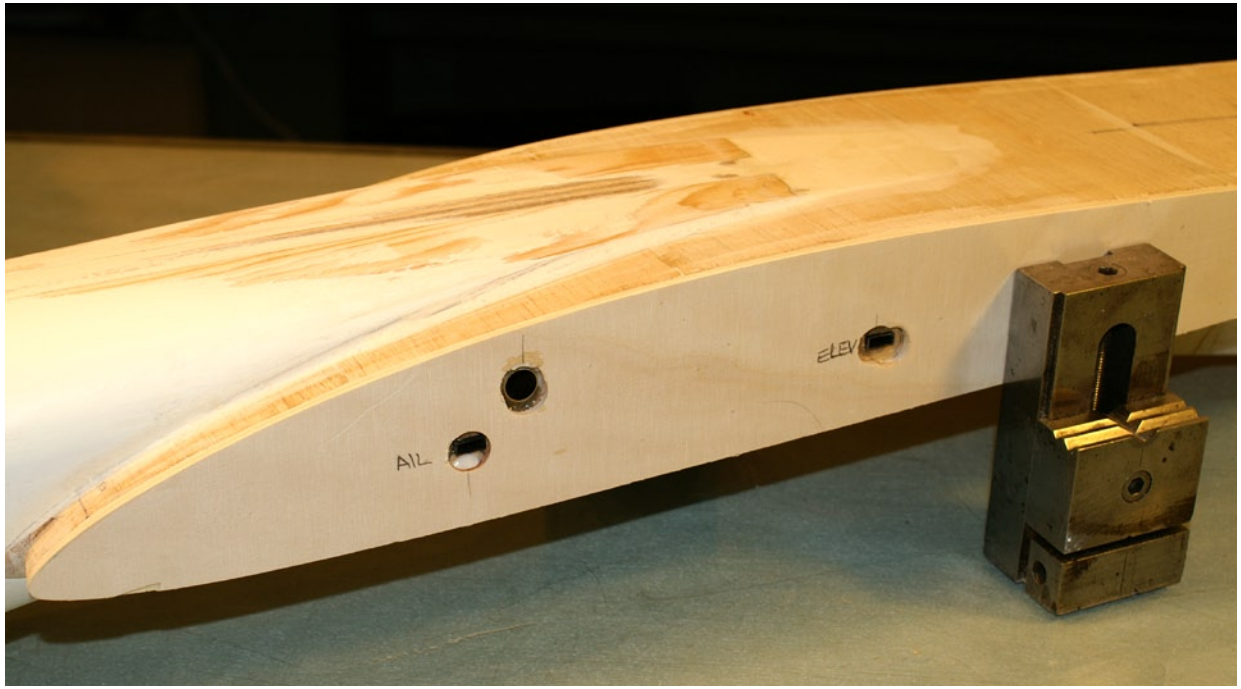
Using a Dremel with a flapped wheel sander, the interior surface was smoothed out, leaving a lightweight shell. The interior has plenty of room for mounting a 5-cell NiMH battery pack, receiver, rudder servo, and what

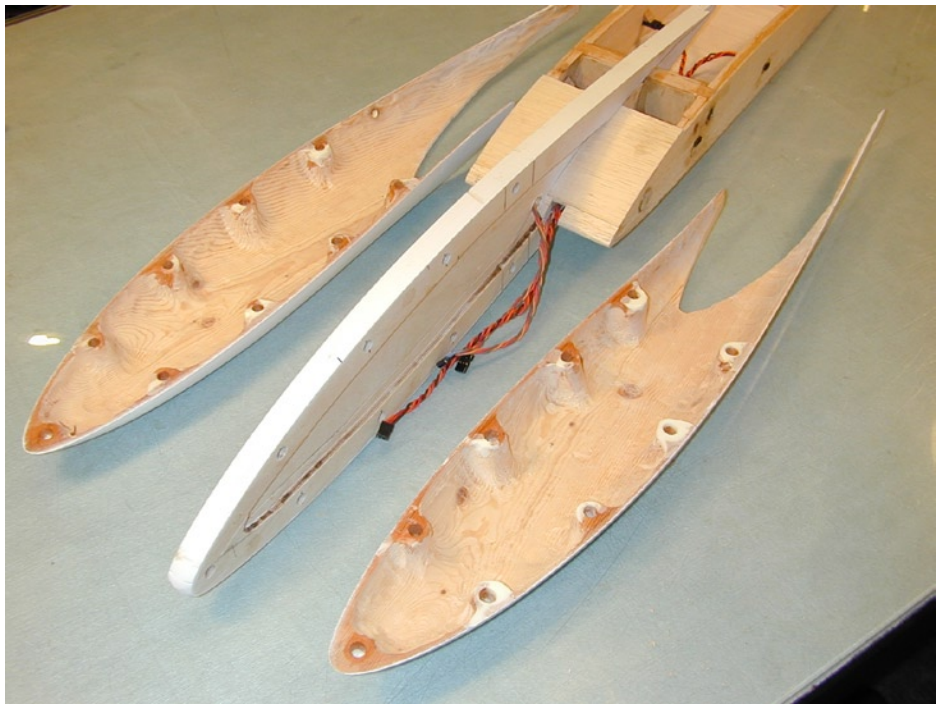


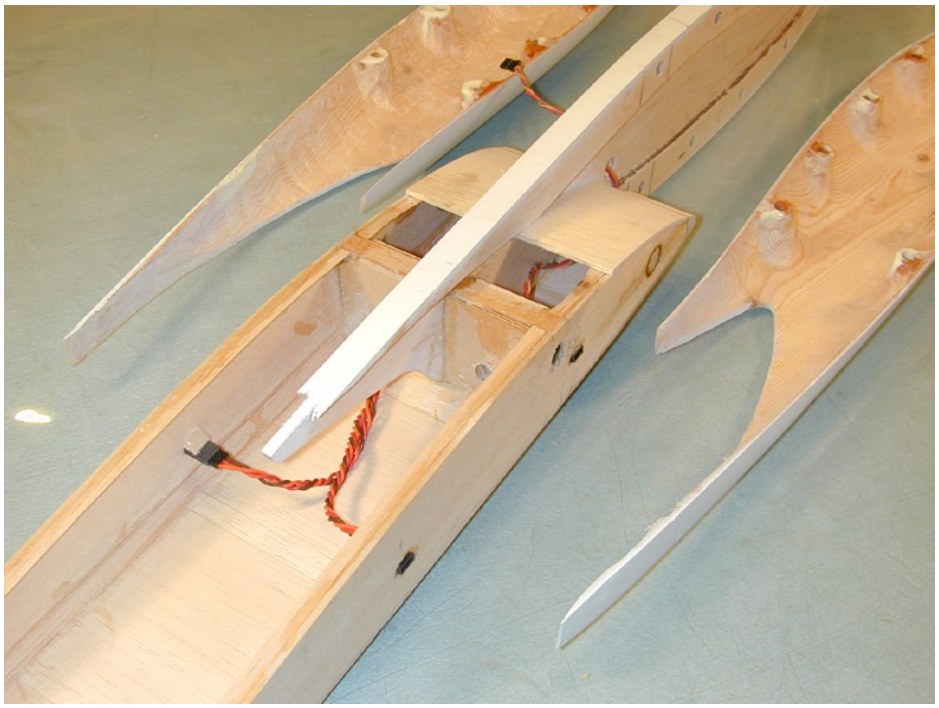
eventually became about 40 ounces of lead nose weight. (More about the latter further on.)

The wing stubs are a major part of the fuselage assembly. The main wing rod goes directly through the aft part of the keel and, with the large diameter dowel close to the leading edge, supports the keel and absorbs landing loads. The wing stub assembly, keel, and shells are a fully integrated assembly.

Both the elevator and aileron servos are mounted directly behind the spar. Because the spar is swept forward, the aileron servo actually lies ahead of the elevator servo. We ran the elevator servo



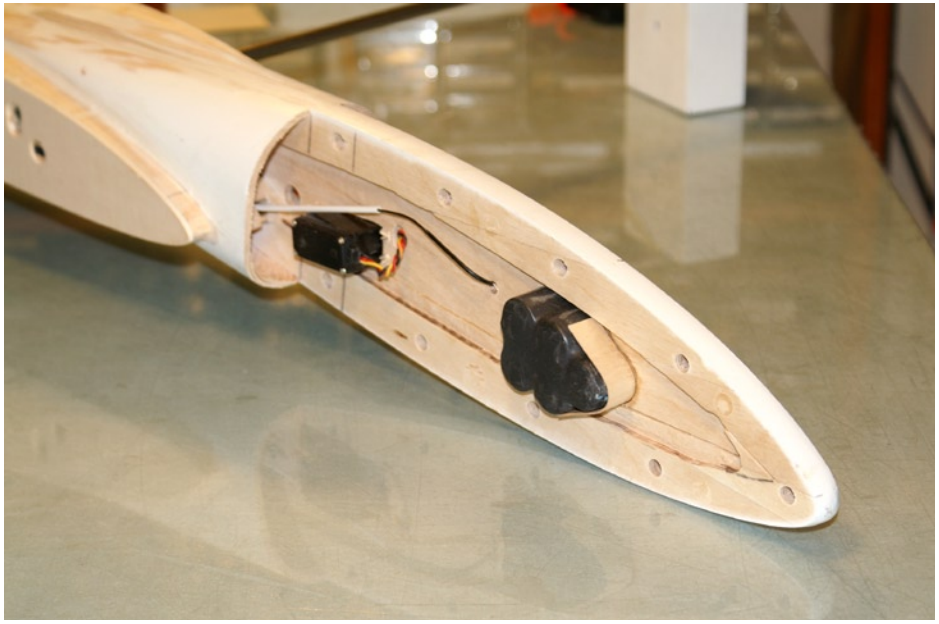


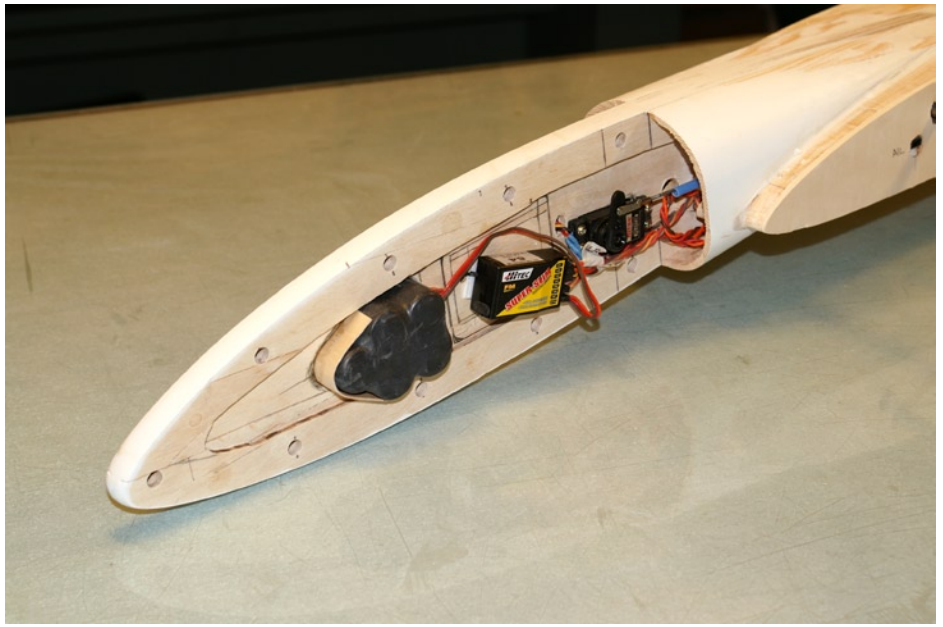


wiring through the spar carry-through and into the rear of the wing stub to a spot adjacent to the elevator servo. The aileron servo wiring runs through a paper tube in front of the spar, so the connection point at the wing stub is in front of the spar.

Once the entire wing stub, keel and side blocks assembly is glued together, epoxy and microballoons partially filled the gaps, and lightweight spackle was used to fair the fuselage nose to the wing stub.

Plywood caps were glued to the wing stubs and the wing roots using epoxy andmicroballoons. To assure a good fit, slow curing epoxy was used and both wings were placed on the wing rods and pressed into place using bar clamps.





Once the epoxy cured, the plywood caps were sanded down to match the wing profile contour. A couple of sanded coats of white primer and white and black Krylon paint completed

The fin and rudder are of standard balsa construction — balsa ribs and sheeting in the case of the fin, and balsa ribs and capstrips in the case of the rudder. Heavy duty hinges are used to connect the fin and rudder, and a single piece of music wire replaces the three hinge pins.

The fin is glued to the top deck of the wing stub and a layer of ‘glass cloth and epoxy secures the connection. Feeding the antenna tube up the leading edge of the vertical fin was a relatively easy task. We pushed a piece of metal cable through the hole at the top of the fin and tracked it through the holes in the ribs until it extended out the bottom of the fin. The cable was insrted into the antenna tube and the fin was lowered onto the decking. The antenna tube followed the cable and came out the top of the fin and the excess was trimmed off.

On to the covering!

With a total of 32 square feet of swing surface area to cover, we decided to go simple. Monokote. The bottom of the wing is solid black, the top is solid white. The fin and rudder were covered in white as well. The ailerons and elevator halves have Monokote hinges.

Once completely covered, it was time to figure out the CG location. For that we used Curtis Suter’s Sailplane Calc. Using the Wing portion, we easily found the quarter chord point on the MAC. From there, we quickly found the CG location for static margins of 0.025 and 0.05.

Masking tape strips were stuck to the lower wing surfaces and marked for neutral point and 0.025 and 0.05 static margins. Another piece of tape was placed on the fuselage centerline and marked in the same way.

On the balance stand, we started taping lead to the forward part of the nose. Two and a half pounds later, we were at the 0.05 mark. We know from previous experience with the BW 05 02 09 airfoil that the static margin will eventually be around 0.025, but always perform initial test flights at 0.05.

Ready to fly, the Redwing XC weighs 183 ounces/11.4 lbs. Here's the weight breakdown:

Left wing	39.6 oz
Right wing	39.1 oz
Fuselage, fin and rudder,	49.7 oz
ballasted for 0.05 static	21.2 oz
margin	20.9 oz
Wing rods	10.2 oz
	2.1 oz

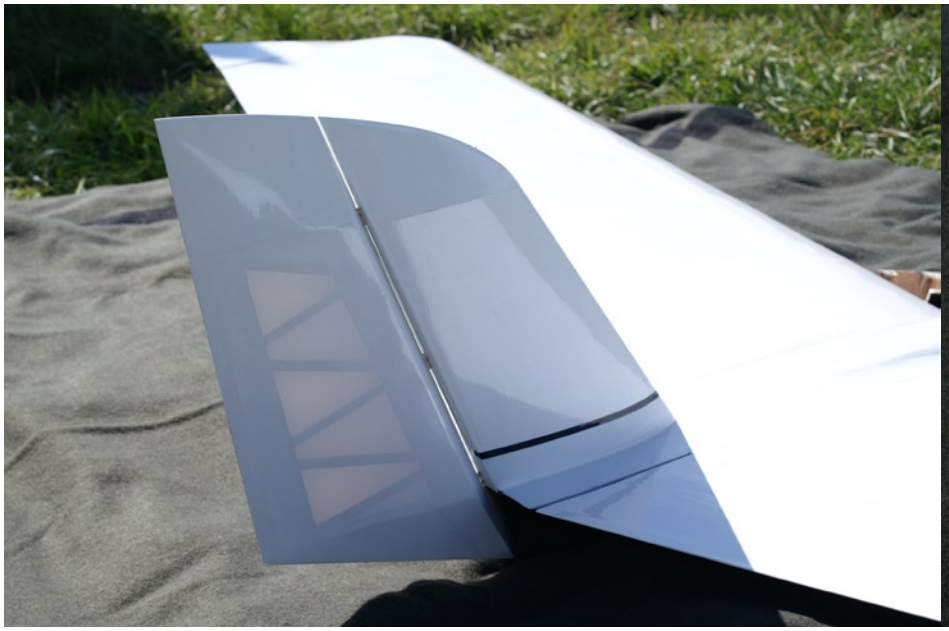
The installed radio gear includes Hitec 605 BB servos on the elevators and rudder and 635BB servos controlling the ailerons. The receiver is a Hitec Super-Slim. Power comes from a 5-cell 3300 mAh battery pack. Prior to test flying, two additional ounces of weight were taped into the nose.

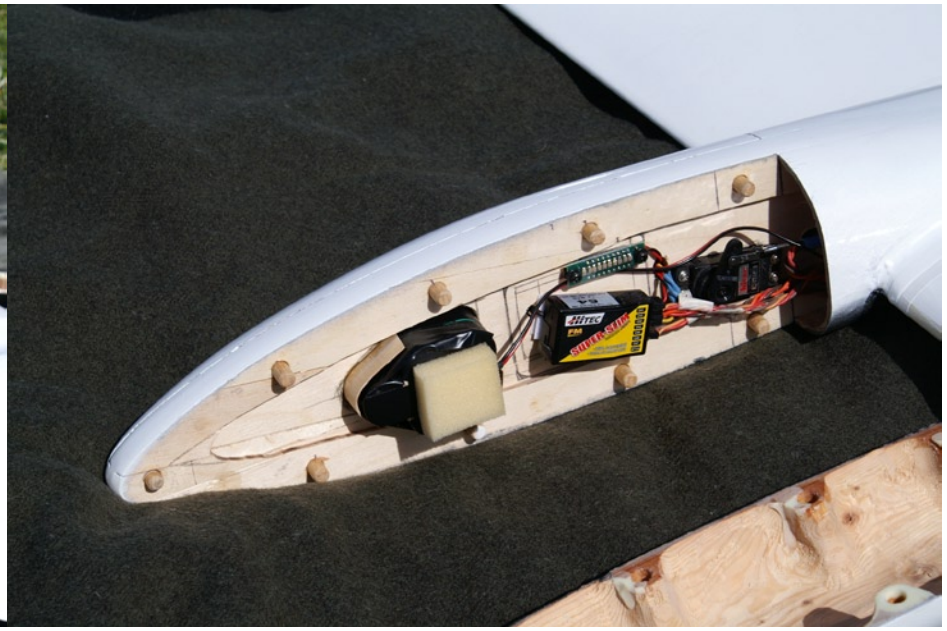
Initial test flying took place at the Seattle Area Soaring Society field, 60 Acres South, in Redmond, Washington. Fellow SASS junior member Brendon Beardsley, just back from his second place finish at the F3J World Championships in Turkey, handled the transmitter while Bill did the launching and Alyssa Wulick served as photographer.

We did manage to get a couple of hand tosses over tall grass before putting the Redwing XC on the winch. The first winch launch was impressive. The climbout was steeper than anticipated, and rather than a full pedal-to-the-metal launch, most of the time on the line was with the winch being pulsed.

After release, Brendon immediately sensed that the CG was slightly forward from where it should be. Some up trim was applied, and there was a slight but definitely noticeable reduction in the glide ratio. A turn to the left put the Redwing XC directly into a thermal, and Brendon completed several climbing turns before handing the transmitter to Bill.

A few more turns well away from the thermal had it over the tall grass on the east side of the field. One final large diameter turn brought it down to landing approach height. Over the edge of



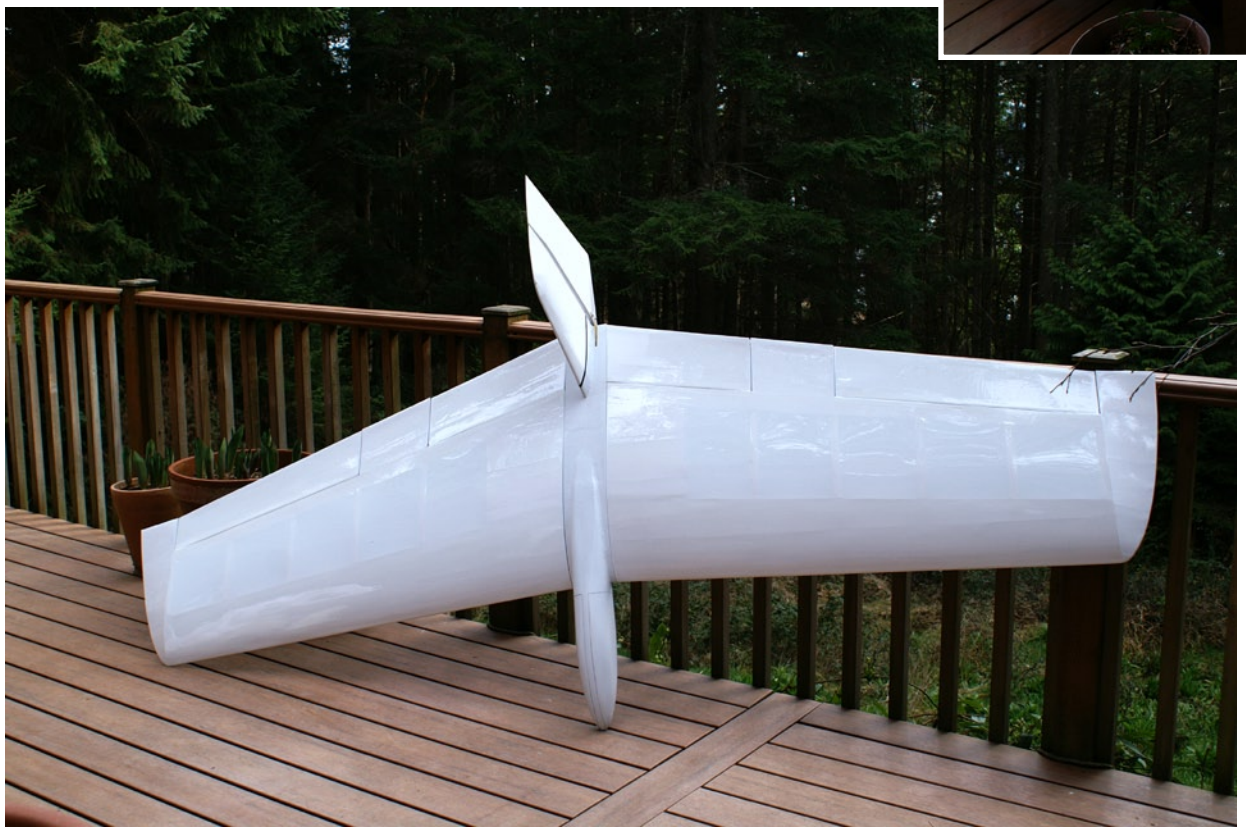


the tall grass and onto the field proper, then to the ground for a sliding landing.

There's only one word which can describe this sailplane in the air - "majestic."

No changes were made to control surface throws, but one ounce of the lead which we had added at the field were removed from the nose.

The second flight showed the aircraft to still be slightly nose heavy, but the up trim necessary for level flight was reduced from that of the first flight. At the end of this flight, another ounce of nose weight was removed., taking the airframe back to its initial weight as evidenced in the previous table.



The third flight of the day went just as smoothly as the first two, but the landing was a bummer. Coming in hot, the Redwing XC flipped upside down and broke the leading edge of the fin off the upper wing stub decking. Not a major repair (less than 15 minutes total) but flying was stopped for the day.

Two points were accentuated by this last flight:

(1) Some weight still needs to come out of the nose to move the CG rearward. As two ounces have already been taken out, it looks like another two will need to be removed in order to eliminate the last of the up trim. Unfortunately, it looks like the total weight is not going to end up getting below 176.4 ounces, the FAI maximum. Oh, well.

(2) We need to get the crow function set up! This worked extremely well on the two meter version of this planform, lowering the landing speed and allowing a steeper approach. Ailerons up and elevator down provides washout at the wing extremities and down elevator dramatically increases the lift created near the wing root.

Both of these items - reduced nose weight and crow function - can be handled at the field and subject to incremental evaluations.

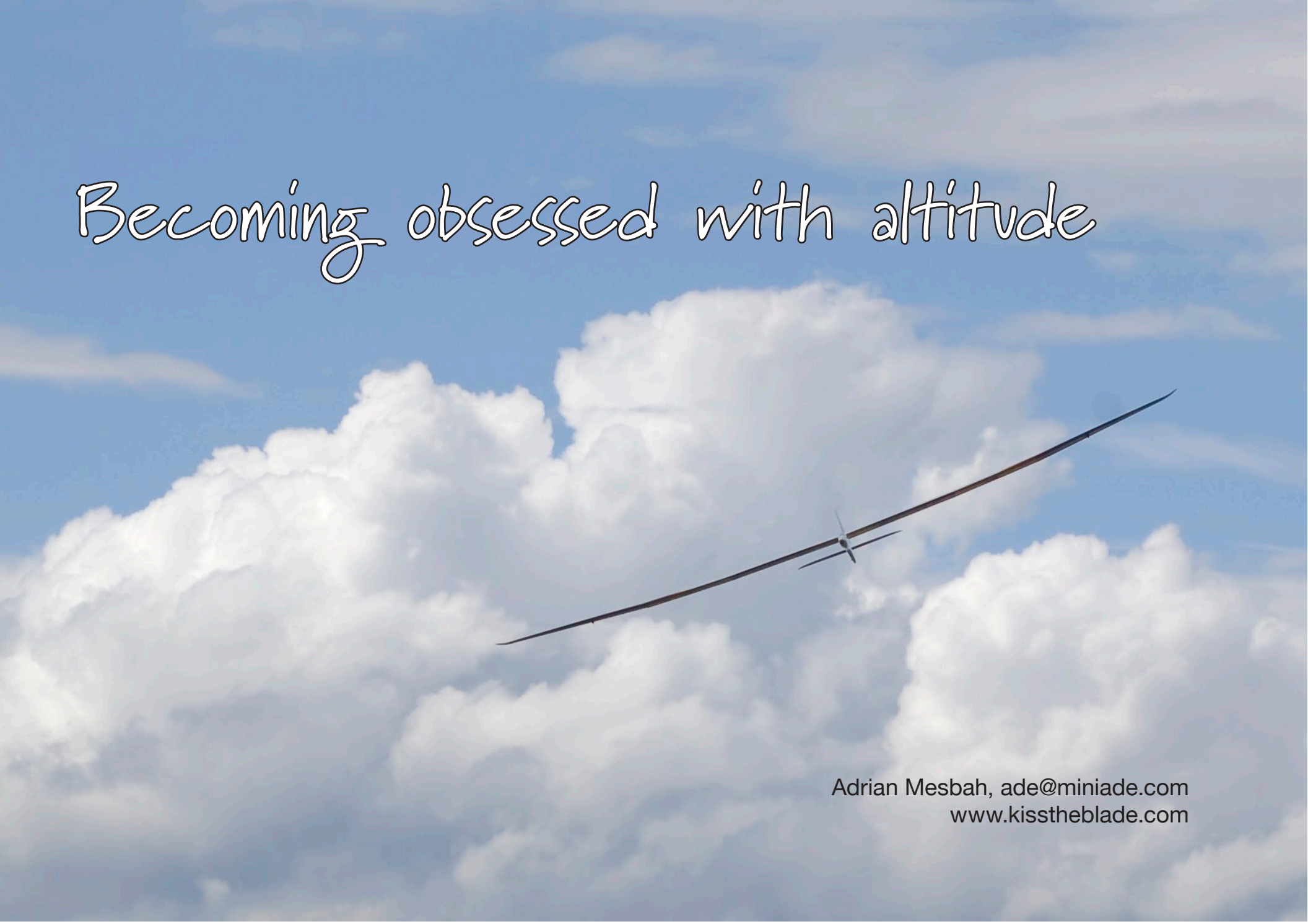
The Redwing XC has so far shown itself to be an unqualified success, and well worth the materials and time required for its construction. The damage from the flipped landing has been repaired and we still have eight to ten weeks of good flying weather (and late day light) here in the Pacific Northwest, so we should be able to get a large number of flights on this airframe before the end of the year.

For those curious, we are planning to make plans for the Redwing XC available at some time in the future. Full size plans for the Redwing 2M are nearly complete, needing only the ribs drawn in. These plans are on mylar, so reproduction should be excellent. We'll post a note on the *RCSD* web site as plans for the 2M and XC versions are available.

Oh, yeah... Our next project? Ken Bates' Windlord, enlarged from 100" to 124" and with ailerons added.

No, we haven't forgotten about the Akaflieg Berlin B-11 project. The second and final chpater of that saga is planned for the September issue. ■

Becoming obsessed with altitude



Adrian Mesbah, ade@miniade.com
www.kisstheblade.com

When the first suggestion of flying unpowered radio controlled aircraft was “flown” by me, I had no idea of the depth of the subject I was stepping into. My first reaction was “well how about an engine,” in my ignorance assuming it would result in greater speed and satisfaction.

Having spent two months apprenticeship flying the obligatory crash proof EPP model, I soon knew I needed to take the plunge and shell out for a moulded glass ship to take things to the next level. Budget being tight I managed to haggle a very good deal on a 2.9m Valenta Dragon which, although not the most cutting edge of aircraft is probably to this day the aircraft I have flown more hours on than any other. This is due to its stable hands off performance and its large nose cone that has enabled a variety of payloads to be carried.

Living in the West of the UK we are blessed with a number of excellent flying slopes ranging from steady rolling hills like Selsley Common which are perfect for large scale aircraft, to more aggressive slopes like Frocester and Cam Long Down where landings can be tricky in strong conditions! More info on these can be found on our local club site at <http://www.scsa.org.uk>.

On one very fine spring day last year I found myself becoming obsessed with the pursuit of altitude. That particular day turned out to be very thermic and having loaded my Garmin GPS into the nose of my Dragon, hand launched it from the top at 650 ft above sea level.

The first 1,000 ft of the climb were a slow and steady ascent out in the lift on the front of the slope. It was not until about 1,500 ft above sea level, where the slope lift had ceilinged, that anything exceptional took place.

As I made a few wide turns off the back right of the slope the Dragon seemed to shrink before my eyes. Since it was no longer directly overhead my assumption was that it was simply perception, but I persisted and it continued. In a matter of minutes the plane was a speck and I was in real danger of losing it.

With assistance from a number of people in the club we kept it in our sight and eventually brought it down to a safe landing. Upon inspection of the Garmin GPS that had been on board we could see the peak altitude of 2,593ft (a gain of almost 2,000ft). I was thrilled but even worse, I was now addicted to altitude.

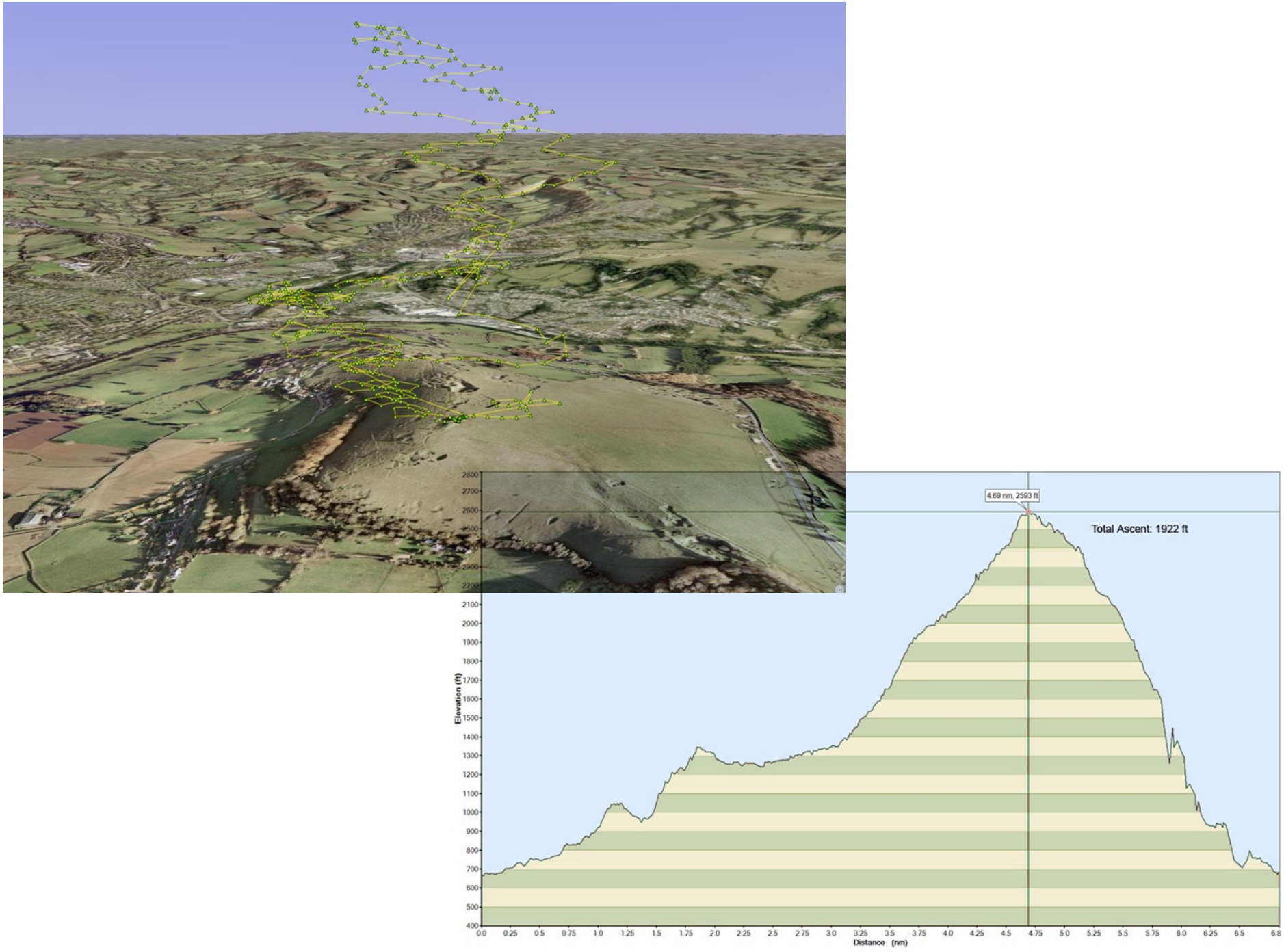
My mind began to wonder what it would take to seriously improve on this, my first personal best altitude record. The obvious answer is a larger airframe, as visibility was without question the limiting factor. Even with perfect 20:20 vision it became impossible to detect anything but that largest rotation in yaw or even perceive the slightest motion across the sky.

Like any proper obsession, I waded in at the deep end uncontrollably in an effort to find the ultimate altitude soaring solution. I placed an order for a 5m Thermic XXXL from Valenta in full carbon which at the time was the highest spec, all carbon moulded 5m sailplane I could find.

To help overcome the height perception issues I got hold of a WSTech variometer which would also enable monitoring of glitches, battery voltage and altitude callout. Anyone that has used a variometer in a radio controlled sailplane will know that it provides very little benefit over your own eyes until you are flying about 500 ft overhead. Beyond this height they start coming into their own, giving real valuable information.

I also invested in a pair of wide field low power binoculars to help track the sailplane at higher altitude. They are not the perfect solution I’d hoped for as there is risk of losing sight of the sailplane while you move to look through them. They are probably better used by an accompanying “spotter” to validate your flying. The use of a spotter is essential as you have to be quite responsible flying at this altitude.

I’m sure many of you will understand the time limitations facing anyone with a family and career, so when I tell you the


4.69 nm, 2593 ft
Total Ascent: 1922 ft
Elevation (ft)
Distance (nm)

Thermic XXXL took a total of 16 months to complete you will not be expecting anything beyond the technology we know and regularly use! The only thing I may be guilty of in the 100 hours plus build is of being too much of a perfectionist in areas it really wasn't necessary.

The XXXL at 5m wingspan is fully featured with two ailerons, four flaps, two spoilers, rudder and floating elevator. I have used ten Hitec 225mg servos, which fit very snugly between the upper and lower wing surface, and a Futaba 319dps 35 mhz PCM receiver.

I was hoping 2.4gig technology would have been able to support this build, but sadly my use of one of the main vendors gear, whilst working flawlessly in foam models, simply could not deliver even my glass Dragon with its carbon spars and fixings.

On my 2.4 gig journey I did, however, learn of the importance of provisioning consistent voltage to receivers of all types and as such have a 3,600 mAh 6v C-cell pack supplying the wing of the XXXL and a 2,600 mah 6v AA-cell pack supplying the tail and receiver.

Surprisingly to me, but may now be common in modern moulded sailplanes, it took only about 100 grams of lead in the nose to balance the plane. The all up weight of the sailplane ready to fly is 6.1kg (13.45 lb) which at first seems on the heavy side, but its wing loading, while not as low as today's F3J machines, is very reasonable and probably a benefit in providing the required airspeed for the MH 32/SD 7037 wing.

As time has passed it seems the event of its maiden flight has become a greater and greater obstacle. In the final push to complete the build, fixing the many tiny issues on the "to do" list required prioritising and suppression of my will to over-engineer absolutely everything!

The day came I was determined to put the XXXL in the air. The wind was not on one of our gentle slopes but I could wait no longer. In fact it probably helped that the Frocester hill drops away very quickly as it minimises the chances of

encountering terra firma should the setup of the sailplane be slightly off!!

Phil, Guy and Andy from the club sanity checked the sailplane, something I insisted upon as in all the excitement I knew the chances of being caught out were elevated (forgetting to switch on or perhaps a servo accidentally reversed!!).

My nerves were increased as I arrived at the slope to find nothing more than a faint 2-3 mph breeze I'd be more inclined to fly my Highlight DLG in! It was a consistent breeze, so at worse a landing out was not going to stop the show.

Despite his horror on picking up the XXXL and the thought of having to propel such a mass, Andy's right arm did a stellar job launching it out with good speed.

Straight and level it moved away from the slope a very impressive site seemingly levitating in a way my 4m Scale D2a never could. The alarm bells in the back of my mind began to ring as it failed to gain altitude and in fact was approaching the edge of the little slope lift that was available. The terror felt was a clear sign I'd either invested too much money or too much time into her (or probably both). Only when I eased it into a turn did the true scale of what I was flying become apparent.

The high aspect ratio delivered a slow roll in, and with the limited lift a tight turn would be too inefficient. I'd not intended for the first two turns the sailplane was to make to be downwind, but it seemed forced with the limited space available. I was already picking a spot down the hill that would make the best place to land out when the second turn completed. As it did she began to rise steadily up and up. I've struggled to find the words worthy of this life affirming experience as she began to soar higher and with such poise. Truly majestic.

Despite the limited elevator movement discovered after launch, the XXXL flew like it was on rails. The altitude soon built and I found myself amassing great speed trying to bring it down. It staggers me how much energy retention larger low drag sailplanes have.

Landing a large sailplane on any steep slope with more than its fair share of rotors is interesting. On one hand you have greater inertia that keeps it steady on approach, and on the other is the precision required to remove all energy and spot land on that one survivable ledge. Having built confidence and completed not only the flybys necessary for the "first flight" photos, but also to perform a couple of loops, I began to plan the landing.

On first attempt I followed my known path in using the River Severn as a guide, but even with full crow could not slow the sailplane sufficiently. As it approached the slope I banked it into a turn to go around, but the limited elevator struggled to pull it around and the left wingtip clipped the bracken. A longer approach was required.

On the second approach, after a brief conference with my support team, I took a much longer line which began to feel more akin to a Boeing! She floated steadily in towards to slope about 20 ft below us and with a gentle flair up settled firmly into the soft bracken about 10 ft away. All was well in the world.

Finally I'm ready, and with a few more flights my aim is to be as carefree chucking her off a cliff as I would be with the now disposable Dragon.

The XXXL does require some tweaking that I'm glad to say having flown I think I have the measure of. A little rudder is required to maintain roll authority under crow as will a little reverse differential.

I've already opened up the elevator movement and made a start on fitting the TEK probe for the vario, so my previous 2,593 ft won't last long.

I'd love to see a remote HD video link in the future if it's practicable.

Maybe I should be talking to Peter Carr about solar cells!

For more info and pictures visit:
http://www.kisstheblade.com ■

Linus Forsberg's Ava-e

By Linus Forsberg, EXT-Linus.Forsberg@nokia.com

My name is Linus Forsberg, I live in Finland, and I'm a sailplane flyer and a reader of *RC soaring Digest*.

Recently I took a few photos of my Ava-e in action that have gotten some attention at the RCGroups.com forums.

These pictures were shot at our club field, "Tuorla," in southwestern Finland where I fly with my friends.

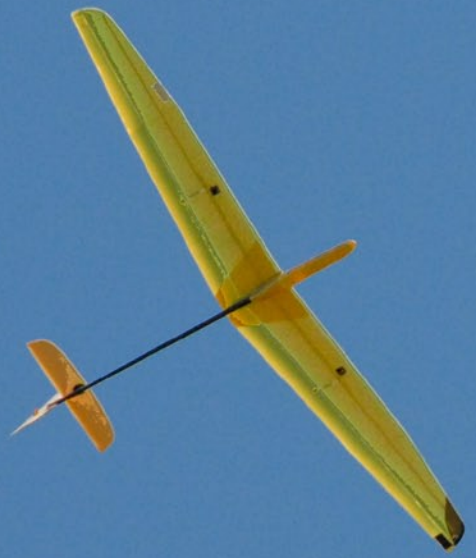
Our club does many different types of RC flying, but for me, it's all sailplanes.

Thanks to RCGroups, RC Soaring Digest, and my friends in Tuorla sqv. for making this hobby so great. ■

Motor: Hacker A30-10xl
ESC: Hacker X-55sb pro
Battery: 3S 2250 LiPo
Prop: Aeronaut 12.5x7.5
Radio: JR X9303
Receiver: AR7000
Servos: 3 Futaba S3150 digital

Mid-Columbia Soarers

Eltopia HL Challenge 2008



Coverage by Jay Decker, sleddriver@monkeytumble.com

Relighting the Fire…

This past winter I gave my DLG to an aspiring handlaunch pilot named Amy. I didn't do her that much of a favor — I smacked it into a shed last season, and the wing was pretty beat-up. She will use the plane to improve and she should start placing middle of the pack at regional handlaunch contests. Amy is competitive by nature, an accomplished TD pilot, and working on LSF Level V, so it won't be long until she is beating a number of the guys.

I really like flying DLG's and fast iron on the slope. I don't know that I could choose a favorite between the slope and handlaunch flying; to me the question is like being asked to choose which of my kids is my favorite.

Unfortunately, I did not get a new DLG built for this season. I spent the winter and spring building composite slope airplane parts that I owed others in trades.

So in mid-June as I was packing the last of the sloper wings for shipment to their new owner, I started to think about what I wanted to build next, and it struck me like a bullet between the eyes that I had no handlaunch to fly this year.

The next day happened to be the second day of a two day handlaunch contest hosted by my local club, the Mid-Columbia Soarers. Sorry, Mr. Webster, but that is the actual club name.

The next day I arrived at the handlaunch contest with my camera. A half-dozen pilots attended this contest, rather than the usual dozen or more the contest has drawn in the past. I don't know if decreased attendance is a trend elsewhere in the handlaunch contest community, but this contest's modest attendance was sobering and has caused me to contemplate potential contributing factors, e.g., high cost of fuel, economic uncertainty, the ever increasing competition for personal free time, and the increasing average age of the RC sailplane community.

I sat those questions aside, took the lens cap off to shoot a few photos and just wandered around talking to guys about what they were flying and what was happening in the DLG world. The weather was perfect, everyone had some good rounds, and I left motivated to build a new handlaunch and to jump back into the fray of handlaunch competition...

I hope that Amy doesn't beat me too badly. ■

Tim Johnson's original design, with a strong Taboo'ish resemblance, looking for lift.

Eltopia HL Challenge 2008

Saturday HLG				
Last Name	First Name	Score	% of Perfect	Season Points
Johnson	Tim	8000	100.00	100.00
Pearson	Phil	7562	94.53	94.53
Lies	Ken	7522	94.03	94.03
Coleman	Doug	7447	93.09	93.09
Hohensee	James	7330	91.63	0.00
Stewart	Don	5888	73.60	0.00
Sunday HLG				
Last Name	First Name	Score	% of Perfect	Season Points
Johnson	Tim	7933	99.16	100.00
Coleman	Doug	7559	94.49	95.29
Pearson	Phil	7506	93.83	94.62
Lies	Ken	7445	93.06	93.85
Hohensee	James	7367	92.09	0.00

Phil Pearson flying out a long flight, making a nice tip catch, and demonstrating youthful flexibility in his launch.

Phil Pearson's Encore cruising between thermals. Phil is always flying a new version of the Encore with improvements to find the perfect DLG. Phil's planes always handle great.

Doug Coleman, the contest CD, winding up with his SuperGee II derivative DLG.

Doug tries to determine if his plane is in a thermal, while his timer looks for better signs of lift.

Left: Tim Johnson preparing for the start of a new round.

Below: Tim winding up for another staggering sub-orbital launch, and

Right: working it to max-out another flight.

Tim won the contest.

James Hohensee's plane cruising home after going downwind in a thermal.

Ken Lies, timing, and James Hohensee, flying, braving temperatures in the low 80's and light and variable winds on a sod farm.

James making a nice tip catch, and…

getting a nice launch turn around.

1

2

5

6

Tim Johnson launch sequence. Tim is a great pilot and the tremendous launch height Tim starts each flight with doesn't hurt…

Slope Soaring News was the brainchild of Charlie Morey and enjoyed a run of twenty issues in the late 1980s. During nearly two years of publication, *SSN* enjoyed quite a following. Manufacturers, flying sites, aerobatic skills, personalities, and everything else related to slope soaring was covered. Particular issues of *SSN* are sometimes mentioned within the RCGroups web site, the RC Soaring Exchange e-mail list, and other venues, but very few people know of *SSN*, and tracking down specific articles is nearly impossible.

Because of this lack of availability, we contacted Charlie and have received permission to create a PDF archive of all twenty issues of *Slope Soaring News* on the *RC Soaring Digest* web site. You can find the growing archive at<http://www.rcsoaringdigest.com/SlopeSoaringNews/>.

Each *SSN* PDF issue is about 5MB in size. The archived issues are the original 8 1/2 x 11 inch format, reproduced in grayscale at 150 dpi from 600 dpi scans. There are currently twelve issues available for downloading from the archive, and two more issues are scanned and awaiting conversion to PDF.

Reproduced here is an “ensmalled” (as opposed to enlarged) version of the third issue of *Slope Soaring News*.

Wingin' It

Lazy Days

While researching this month's Combat Special Issue, I got to go flying with Larry Pettyjohn. We went to one of his favorite slopes up behind Malibu. He flew his Cheetah as I took pictures, then he handed me the transmitter.

I cautiously "felt out" the plane, gradually getting braver and braver. I love to fly different gliders, but I hate flying someone else's plane. I know that sounds contradictory, but I'd feel terrible if I crashed it, even if it were due to a radio glitch or another cause beyond my control.

Well, everything went fine with the Cheetah. In fact, I'd call it an excellent aileron trainer in addition to being the state-of-the-art combat ship. Perhaps that statement sounds contradictory, too. But there are several traits needed in both gentle, beginner-style maneuvers and intense combat situations: response, low-speed stability and crash resistance.

"Sometimes I don't feel like playing Top Gun in the slot with three other crazed aileron twisters."

Response can be adjusted with servo linkage and/or dual-rate transmitters to suit the flier's abilities and requirements. The Cheetah design will respond to those varied settings: quick for the fighter, gentle for the learning pilot.

The Super Cheetah's airfoil lets it slow down and turn tight for combat – which is sorta like a slow-moving beginner blunder where the pilot overcontrols while trying not to go too fast. Another plane would stall out and auger in...which brings us to the best part.

Hey, the Cheetah's not a show plane. It's homely at best, but, boy, is it tough! ("It's butt-ugly!" Larry Pettyjohn says.) Whiffle ball bats break long before Cheetah fuselages even feel the strain. Plus, the breakable parts are quick rebuilds, and Cheetah sells the parts individually, so you don't need to keep your own inventory of kits to rob.

Then I brought out my new French Flyer. You may have read about Greg French's glider in our "Want Ads" section. It's sleek, it's fast, it's unforgiving. The Flyer is not an aileron trainer.

Mine was brand new. At $85 for a completely-built, covered, wingeron, full-floating V-tail with both servos and linkage installed, I couldn't resist!

I hadn't flown it before. Wind conditions and my time-off schedule had been running in direct conflict, but now the time was right.

Balance and trim proved to be just about right as the Flyer rose in the steady lift and moved out from the slope. But when I tried to turn, it resisted, pulling in the opposite direction first, then turning sharply when I increased stick input. Aileron (wingeron) differential was the problem. Larry and I adjusted the throw to give more "up" than "down" on the trailing edges and tossed it off again. This time, it flew like a thoroughbred. It changes direction very quickly, and with the thin, tapered fuselage, it's impressively fast.

There's still some trimming to be done (picky, picky, picky...), but I like it, and I think I'll ask Greg to start work on another one.

One last plane. As I mentioned, my day-off/wind-condition ratio has been crummy lately. Like most of us, I have only a limited amount of time to play, and it's quite tightly scheduled among other things.

As a result, I've been carrying one of Dick Vader's (uh-oh, another Vader plane story) 50-inch polyhedral pod planes with me everywhere I go. When the lift is good, it obviously flies well. Dick's *tri*hedral wing breaks and a rudder the size of San Bernardino County give the little devil a nice roll rate, so it's fun when my mindset says, "aerobatics." The undercambered wing and light (11-oz.) weight also let it be the last plane down when the lift leaves.

If all else fails, I can hand-launch it off the hill, bring it around one or two laps, land it, then launch again. Which is better than no flying at all.

The little floater is best of all on my lazy days. Sometimes I don't feel like playing Top Gun in the slot with three other crazed aileron twisters. At times like that, I take my kite-flying mentality off to the end of the slope, toss off the floater and sit (or lie) back and just see how high it can go...

Charlie Morey

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On the SoCal slopes, combat is played in varying degrees of "serious." In every case, the Super Cheetah is the favorite weapon.

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EDITORIAL CONTRIBUTIONS are welcomed. Unfortunately, we can't pay for them. Editorial material is selected based on its perceived value to the slope-soaring community, and the publisher assumes no responsibility for accuracy of content.

CLUB CONTRIBUTIONS are welcomed. Please keep us notified of your club's events and/or fun flying activities. Material printed will be selected at the discretion of the editors.

ALL CONTRIBUTIONS should be addressed to SSN, c/o Charlie Morey, 2601 E. 19th St., #29, Signal Hill, CA 90804. All contributions requested for return must be accompanied by return postage. The editorial deadline is the 15th of the month preceding the cover date. All material is subject to editing and revision as necessary to meet SSN requirements. We can accept Ascii text files over the phone or work with your IBM-compatible 3-1/2" or 5-1/4" disk. Please call first for details at 213/494-3712. Don't get depressed if you get our answering machine. Just leave your name, phone number and the purpose of your call, and we'll get back to you.

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Aileron planes have to stay in close to fly at Long Beach.
Long Beach offers both easy outside lift for floaters and an in-tight, low-altitude hot slot for intense aileron action!

Site of the Month

BLUFF PARK

By Chuck Korolden

Long Beach's Bluff Park is the place where I learned to fly, and it's where I do most of my flying now. The bluff is not noted for its booming lift, but for me it's close to home and the office, so I get to go flying even during lunch if conditions are right.

In the summer, the lift starts to come up around 11:00 or 12:00. By 1:00 p.m., it starts to get good (for Long Beach, that is). Typically, the wind starts straight in from the south and then drifts westerly as the day goes on. In the late afternoon, the wind sometimes switches due west, and because the slope faces south the lift says good-by.

This seems to happen right after I get home from work. I'll look out my window, see the palm trees shaking in their boots from the wind, grab my planes and head for the slope. I park the car, get across the street and throw my plane off...and the wind switches to the west just as I make my downwind run! My after-work relaxation is turned into mandatory exercise as I swear to the wind gods on my way down the hill to get my plane back. But sometimes the wind will switch back, and then it's like manna from heaven.

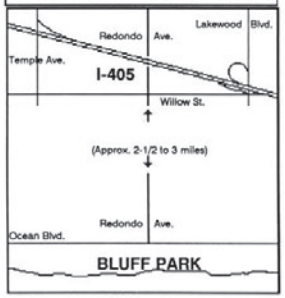
The bluff at Long Beach is only about 40 or 50 feet high, but since the wind comes in over the water (less turbulence), it can generate a good amount of lift for a small slope. Most planes fly well at Long Beach, but the real performers are the under-50-inch planes with micro gear for lightness. The best all-around performers are, without a doubt, Dick Vader's little 10-ounce pod-and-boom planes. If you like to fly big or heavy planes, this slope is marginal even on the best of days.

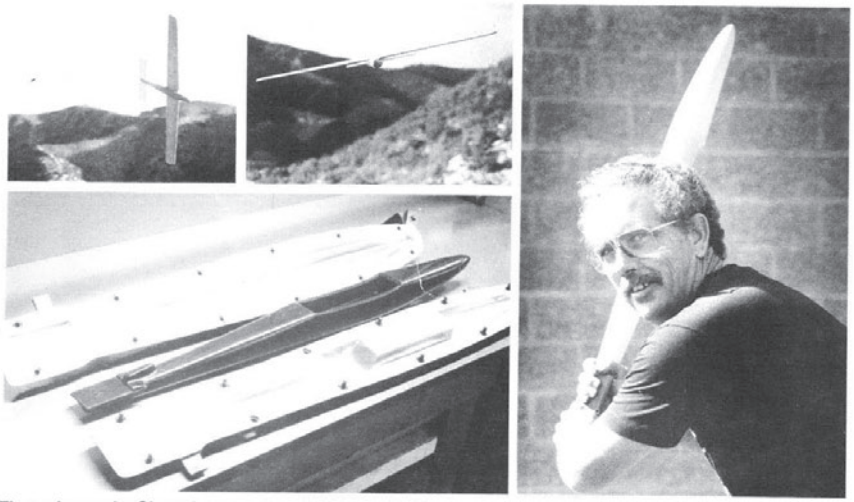
The landing zone at Long Beach is a double-edged sword. On the top of the bluff is a narrow strip of grass that runs parallel to busy Ocean Boulevard. It's a city park, so the lawn is kept trimmed and green, and the surface is soft and level. No rocks, bushes or hard-packed adobe. But the grass is only about 30 feet wide, and if the rotors don't get you, the joggers probably will. When you set up for landing and look to see if it's clear, it'll be wide open. Then, just as you pop over the rail and start to fight the turbulence, the joggers, dog walkers, senior citizens and little kids come out of the woodwork. So, be careful when landing, as we call it, "on the deck."

If, on the other hand, you don't want to deal with surprises on the landing zone and don't mind a short hike down the hill, landing on the soft, sandy beach below is a safe choice. It's also an excellent option for newcomers to slope soaring – saves a lot of wear and tear on new gliders. A lot of new floaters find their way into trees or under traffic when inexperienced pilots try to land on top. On the weekends in the summer, the beach has quite a few sunbathers, so you'll want to watch out where you put it down.

Well, that's about it. Except – as always – remember to show some class when flying at any slope. The more we respect what we have at all our slope sites, the less chance we have of losing them.

How to get there:
LOCALS: It's at the corner of Redondo and Ocean. You can't miss it.
VISITORS: Exit I-405 at Lakewood Blvd. Turn west on Willow. Turn south on Redondo. Go till Redondo ends (at Ocean). It's approximately 2-1/2 to 3 miles.





Those "butt-ugly" Cheetahs are well-suited for combat!
Tight maneuvers are child's play for the Super Cheetah, and it's built for survival. The cross-linked polyethylene fuselages – rotational molded in these polished alloy castings – are baseball-bat tough. Batter up!

SLOPE-SOARING COMBAT

Snoopy and the Red Baron never had it so good!

By Charlie Morey

One by one, the planes – each trailing a cassette-tape streamer – rise from their owners' hands and begin to work a steady pattern across the slope. They avoid each other, jockeying for position as their adversaries launch and join the pack. Like sharks swarming, they circle and swirl, watching...waiting. Some dive and turn, cut quickly, nervously, as if warming up for the fight. Some glide coolly, smoothly, climbing gradually above the mass. Then, much like a shark pack's feeding frenzy, they suddenly attack! For the next five minutes, the air is filled with slope gliders, streamers and exclamations (and expletives) from the pilots.

Over to the left, three have ganged up on one. Banking and diving, they attempt to swipe the streamer on his tail. In the excitement, two collide with each other, and in the low-altitude topple, find no room for recovery. The intended victim's pilot hoots loudly and clicks off a victory roll as the two assailants groan and begin the hike down to pick up their planes. The survivor's glee is short-lived as a new attacker clips his streamer cleanly.

Then, as suddenly as it began, a signal ends the carnage. The pilots bring their planes in to check for damage and prepare for the next heat.

"Combat, like any competitive sport, is fun! It improves your flying skills, and it definitely boosts your adrenaline level."

Combat. The name says it all. Dogfighting with slope gliders. Combat is not unique to slope soaring, however. In fact, the control-line power-plane fliers have developed it to a fine art. Occasionally, you'll see R/C power-plane fliers run a round or two, but their 10,000-rpm props, high speeds and heavy planes add an excessive element of danger to the participants and spectators alike. And the casualties are expensive.

In slope-soaring combat, one plane reigns supreme: The Super Cheetah. It meets all the criteria of a combat model. The rotational-molded, crosslinked polyethylene fuselage is unbreakable. The foam-core wings, stab and fin are quick to build and easy to repair. Most important, the Super Cheetah is homely. If it crashes, who cares? The ugliest, most combat-worn plane often wins, and that's the point.

The rules are simple, although they vary greatly from slope to slope. Larry Pettyjohn (he and his dad Bob manufacture the Cheetah and Super Cheetah) described what seems like a good set of basics.

First, the streamer is cut to seven times the wingspan of the model and must be attached to the tail. Longer streamers yield higher-scoring contests, shorter ones give lower scores...and more midairs. Three to five fliers launch for each five- to seven-minute heat. One point is awarded each time you touch another's streamer. No points are awarded for midair contact. And you lose a point if you land before the end of the heat. If you land (rarely is this an intentional act), you are allowed to relaunch as many times as you wish within the time length of the heat. The number of heats flown depends only on the enthusiasm level of the fliers and the number of hours of daylight.

Of course, there are more aggressive versions. Locally, the name "Hughes Hill" can't be mentioned without someone remarking that they fly combat there without streamers. This format is usually referred to as "real" combat. And, yes, the object of the game is to put the other guy's plane into the ground without crashing your own.

A similar game is occasionally played at Long Beach, but instead of Cheetahs, the ubiquitous Dick Vader pod planes are put into action. They don't use streamers, either.

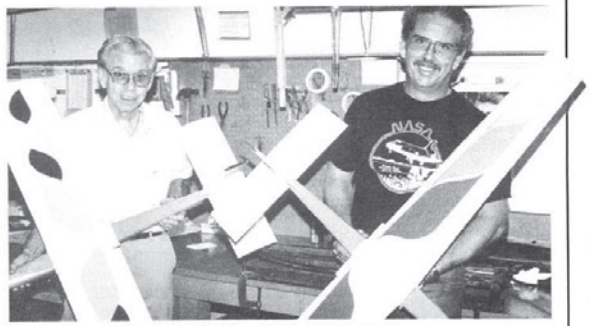
Combat is played with all types of slope gliders. It's surprising how much

THE SOURCE

Nestled in the back quarter of Liberty Letterpress in Van Nuys is a small airplane factory. As Larry Pettyjohn hustles from press to press, adjusting and tending the vintage machines, his father Bob is brainstorming in the back.

The Brains

Bob is a retired machinist and time-efficiency expert. He knows how to design and build tools that will cut labor time (and difficulty) to a fraction of prototype-building time. And he knows how to project the costs of that labor. He has applied those skills to the company called Cheetah Models. Tools built meticulously of wood and aluminum automatically cut wing cores, stabs and fins from huge blocks of foam. Ingenious jigs and cutting tools quickly put spar slots into the wing cores. And every second's labor is carefully calculated to keep costs (and ultimately your purchase price) as low as possible.



Meet the manufacturers, Bob and Larry Pettyjohn.
This father and son team designed and operate a tiny-but-efficient factory.

The wood is purchased precut from the manufacturer, and the cross-linked polyethylene fuselages are rotational molded by a vendor. Everything comes together under the Pettyjohns' skillful care. Even the boxes are assembled and packed in the back room.

The Planes

Larry's the glider expert. He's been involved for years, competed in club thermal events, flown combat and most other slope variants, gone through the full F3B circuit (and eventual burnout)...you name it. The San Fernando Valley Silent Flyers of several years ago were instrumental in such things as airfoil development of the Cheetah, and Larry's part of that old "guard" soaring crowd. Since he purchased Cheetah in the fall of 1986, he has flown nothing but Cheetahs. And that's not all bad. They're better planes than I'd imagined.

Cheetah fuselages are available in six colors: black, white, red, blue, yellow and orange. The wings are sheeted (by the builder) with chromecoat, a light, strong, heavy paper stock. It's cheap, good-looking and relatively tough.

Cheetah parts can be purchased separately (see the "Parts Prices" sidebar), so you can stock up on the breakable parts and go to war prepared to survive several heats regardless of the outcome.

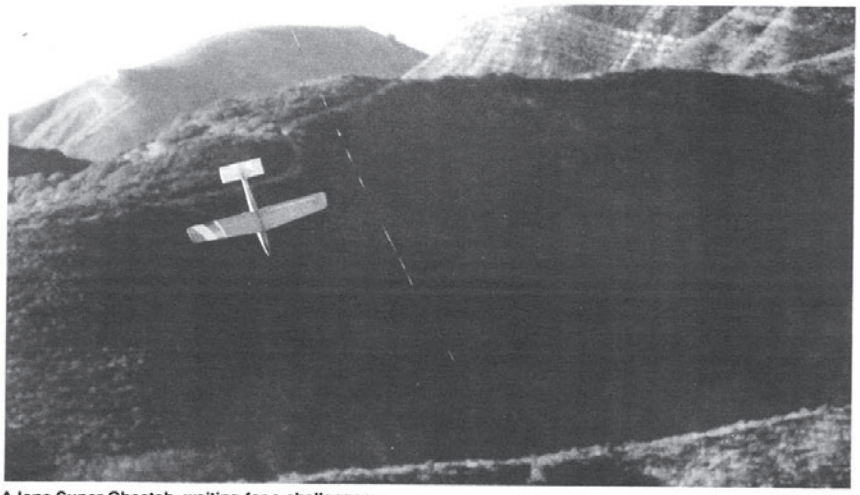
The Pettyjohns bought Cheetah from the original designer, Bill Watson. Evolution has produced the Super Cheetah, a larger combat ship. As the story goes, the San Fernando Valley guys got their butts kicked in a challenge contest with Aerovironment (the Gossamer Condor company) when the AV team showed up with 72-inch, Kevlar-covered wings against the original 48-inch Cheetahs. Jerry Krainock and Mike Bame built their own 64-inch wings, and Larry used Bame's airfoils to introduce the Super Cheetah.

So how does it fly?

I got carried away in my editorial column this month and wound up writing this part of the Combat story there. Since I only have 16 pages to give you as much information as I can, I hate to repeat the same stuff twice in one issue, so please see "Wingin' It" on page two for my impression of flying the Super Cheetah. Thanks!

Where to get 'em

For more information or to inquire about a dealer in your area (or to become a dealer), please contact:
Larry Pettyjohn at Cheetah Models, 14725 Bessemer St., Unit B, Van Nuys, CA 91411, 818/781-4544.



A lone Super Cheetah, waiting for a challenger.
Cruisin' for a bruisin'? Toss off your combat plane and take on Larry Pettyjohn's modified Super Cheetah. The obechi-sheeted wing holds two servos—one for each aileron—which are mixed with a rudder for quick turns.

fun it can be to pit two or more polyhedral "floaters" against each other with 14-meter streamers dragging along behind!

Rules of engagement include only a few seemingly obvious courtesies that nonetheless are sometimes ignored.

First, play only with willing opponents. There are stories circulating around the SoCal slopes about the mindless exceptions. You've probably already heard most of them. One Cheetah flier in particular is said to have noticed a new pilot's polyhedral model floating happily above. He remarked, "Oh, look, a drone!", and then cut the beginner's new airplane in half with one of his music-wire-leading-edged wings. Please don't contribute to the jerk-story quota.

Don't play combat in the middle of a slope where the majority of fliers are just fun flying. Inevitably, a nonparticipant's airplane gets taken out. If you're lucky, he'll be smaller than you and of good temperament, and you'll only get added to the jerk-story list and not the local hospital's critical list.

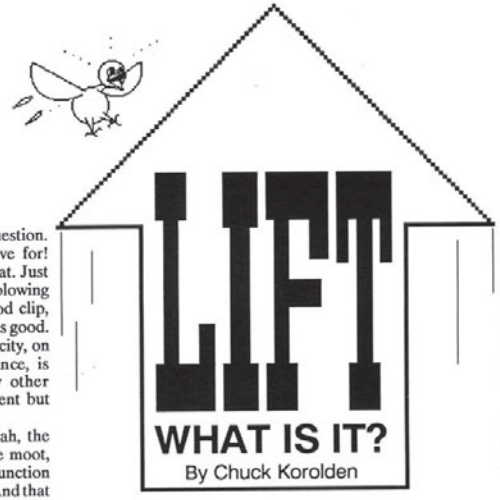
Combat, like any competitive sport, is fun! It improves your flying skills, and it definitely boosts your adrenaline level. If you, like Snoopy and me, enjoy daydreams that involve Red Barons, biplanes, P-51 Mustangs or F-15s, combat may be the game for you.

PARTS PRICES

Parts	Cheetah	Super Cheetah
Complete kit	$42.95	$49.95
Fuselage	20.95	20.95
Wing cores	8.50	16.95
Wing paper	2.25	3.30
Wing center stiffener	.40	.40
Stabilizer core	1.95	1.95
Stabilizer center stiffener	.20	.20
Rudder core	1.25	1.25
Rudder paper	.50	.50
Hardware kit	1.50	1.50

SPECIFICATIONS

Cheetah	Super Cheetah
Wing area: 432 sq. in.	Wing area: 496 sq. in.
Span: 48 in.	Span: 64 in. (tapered 9 in. to 7 in.)
Stabilizer area: 105 sq. in.	Stabilizer area: 105 sq. in.
Fuselage length: 35.5 in.	Fuselage length: 35.5 in.
Flying weight: 32-34 oz.	Flying weight: 34-36 oz.
Wing loading: 11 oz./sq. ft.	Wing loading: 10.45 oz./sq. ft.



By Chuck Korolden

What a stupid question. Lift? It's what we live for! But it's more than that. Just because the wind is blowing up the slope at a good clip, doesn't mean the lift is good. In fact, the wind velocity, on a ladder of importance, is several rungs below other factors that are present but not readily obvious.

True, without Mariah, the other factors become moot, but with her they all function together as a whole. And that is called life...I mean *lift*. (How 'bout that, a Freudian slip on the keyboard.)

Lift is the combination of wind velocity and air density. As long as the air is going up faster than the plane goes down, you stay up. But soaring performance has more to do with the *quality* of the air than the *speed* at which it's rising.

"When things aren't up to snuff, even the best design becomes a dog."

When the two forces are in optimum, all planes fly well. When things aren't up to snuff, even the best design becomes a dog.

I didn't know these factors even existed until I started to build my own planes. One day they flew as I thought they should; the next day, it was as if someone had taken all the flubber out. And all this took place under almost the same wind conditions! As I learned later, the wind was the same, but the air was very different.

One day, I was test flying a new wing that I had shaped from a Jack Chambers JC-14 airfoil. Something wasn't right. I tried adding weight, then taking it out. I made adjustment after adjustment and flew again and again. Nothing seemed to help. I was about to give up and donate the wing to the release of tension when up walked Jim Slatt.

Jim is one of the slope masters, and he's made a lot of hand-shaped wooden wings. I told him what was happening to the plane and said that maybe I had done a poor job on the wing. He looked at it very carefully for a few minutes, then stated that it looked to him like a very good wing. It had proper wash-out at the tips and a clean Phillips entry at the leading edge. He saw nothing wrong with it and suggested that I put it away and bring it out some other day. "But the wind is blowing hard and fairly straight in," I told him. "There's plenty of lift out there!"

Jim said that the strength of the wind can be misleading, that I should never judge the flight characteristics of a new plane on just one day's flight. He went on to tell me how he once designed a wing that was sure to be a performer. He selected the lowest density balsa out of his stash of contest grade wood and went to work.

"Knowing about aerodynamics is important to building a good slope plane. Knowing about the dynamics of the air is equally important."

When he was done, he could hardly wait to fly it. He was sure it would be the best flying plane he'd made to date. But the flight that day was so disheartening he took the wing home and hung it in the back of the garage. Six months later he dug it out and gave it another try. It was everything he thought it should be.

The moral of the story, he said, is never to judge something you build without flying it on at least five different days.

This bit of advice stuck with me. Then I read a book loaned to me by a friend who flies hang gliders. It started to answer some of my questions. The book is called *Flying Conditions, Micro-meteorology for Pilots* by Dennis Pagen. It's written mainly about hang gliders and sailplanes, but the conditions are the same for R/C slope pilots.

"...soaring performance has more to do with the quality of the air than the speed at which it's rising."

Knowing about aerodynamics is important to building a good slope plane. Knowing about the dynamics of the air is equally important.

I'm working on my private pilot rating, and the things I'm learning have a lot to do with the condition of the air. Understanding the different factors involved in flying is now more important to me because the welfare of the pilot and not just the aircraft is a major consideration.

Next issue I'll go into more depth about how to judge an area, what kind of weather makes for better lift and what effect turbulence has on lift.

Any comments may be sent to me care of *Slope Soaring News*, 2601 E. 19th St., #29, Signal Hill, CA 90804.

BLOODY WELL RIGHT!

England's Power Scale Soaring Association thinks big

By Charlie Morey

They've got to be kidding. A B-52? Let's see...a 3.88-meter wingspan at 39-point-something inches per meter...jeez! That's 153 inches ...divided by 12 would be about 13 feet!

"I have already produced the basic foam components for an X-15, and I also intend to emulate the full-size launch technique, which should be good for a laugh!"

Actually, that's not so big for a typical European R/C sailplane, but the thought of tossing a 13-foot scale Boeing B-52 Stratofortress off Point Fermin is downright scary! Ah well, who knows? If Simon Cocker flew at Fermin, perhaps he'd have had second thoughts, too. Judging from the pictures that have appeared in several of the model magazines during the past year, the British PSSA fliers have some wide-open countryside to play in, presumably with wide-open landing zones.

Nonetheless, as you can see from the photo, the PSSA guys have decidedly got their act together when it comes to power-scale gliders! PSSA is organized by Alan Hulme. He publishes a quarterly newsletter, and we've agreed to exchange publications. So, hopefully, he'll keep us updated on their new and outrageous power-scale achievements.

If you'd like to join PSSA and receive the newsletter yourself, you may send £10 Sterling by international money order (available at your local bank) or with a British bank "cheque" which is a little harder to come by. Back issues of the newsletter are available at £2 each.

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Waverton
Chester CH3 7QF
ENGLAND
Telephone: 0244 336472

BACK TO THE BOMBER

Believe it or not, the 1/16-scale B-52 is apparently now available in kit form. Mr. Cocker's address is listed in the "Dimensions" box, if you'd like to inquire about it. But first, let's let him tell the story of its concept and first flight, quoted from the PSSA newsletter.

"I have been almost obsessed with power-scale soaring for the past four years or so, almost to the exclusion of all other aspects of slope soaring. Recent projects have been gradually getting bigger...

"I guess the B-52 was a natural step in the evolution of foam/veneer construction and in my quest for the ultimate PSS machine. The B-52 is a dead ringer for PSS, having a very stable

aerodynamic airframe and, of course, a colossal wing area. The B-52 fuselage can be cut from polystyrene foam in four simple components and, with the addition of a nose block and the tail cone, a very quick and strong fuselage can be created.

"Having flown large scale gliders for many years (3.5- to 5.0-meter span), I've learned that the bigger you dare to build, the greater the rewards in the aircraft's flight characteristics. Smooth, efficient and forgiving are the usual traits.

"So, three rolls of decorator's lining paper later, I had designed all the details and drawn plan and side views of a 3.88-meter B-52 with a wing area of 20 square feet. Each wing panel was cut from foam and had three 1/2" x 1/4" spars. The leading-edge length of each panel is nearly eight feet and the root chord is 26 inches.

"The main section of the fuselage was cut from blue foam for added strength while the rear section (where weight was more critical) was cut from normal white foam of medium density. One-inch walls were cut, then veneered both inside and out. The fuselage when glued together is 10 feet, two inches long!

"Altogether, it took me 12 months to build the B-52. I had to take a number of rests from the project. The problems resulting from its sheer size in a workshop accustomed to sensible scale aircraft caused me almost insurmountable frustration!

"After a lot of nagging from flying friends, I finally found the impetus to finish the airframe. Covering the monster required 20 meters of Solarfilm. The plane took a month of solid work to cover and decorate. Never again!

"The B-52 sports a striking Dayglo orange and silver color scheme, a variant which was used to carry aloft the X-15 test space vehicle for a launch from 42,000 feet. The X-15, a rocket-powered craft, achieved an amazing speed of 4,520 mph—Mach 6.7! I have already produced the basic foam components for an X-15, and I also intend to emulate the full-size launch technique, which should be good for a laugh!

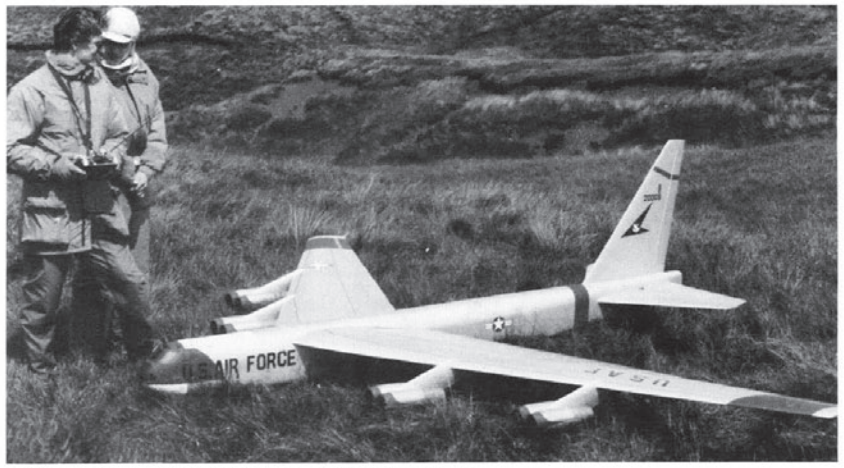
"Having carried out the list of preflight checks, I didn't have any more excuses not to fly..."

"Even with a stretched wing and lifting-body fuselage, I don't expect the X-15 will be capable of more than a couple of fast passes, circuit and landing. And that's from a 1,000-foot launch!"

"IT LIVES!"—Dr. Frankenstein.

"At the crack of dawn on a clear Saturday morning, Steve Belshaw and I sneaked up to the slope before our other club members arrived. Two other invited helpers were due to help, launch, video and photograph.

"Having carried out the list of preflight checks, I didn't have any more excuses not to fly except that our two compatriots hadn't rolled up. Steve



OK, Simon. Ready, yet? Want me to toss 'er over? Simon...?
Remember the nervous moments of any first flight? Now pretend it's this monster that you're about to drop over the cliff after 12 months of building. Well, you needn't pretend any longer. The B-52 is available in kit form.

decided that he was up to a one-man launch, he being the impatient type. So, I thought, if he insists on giving himself a hernia...fine!

"The wind speed was only 10-15 mph but smooth and steady, so Steve didn't have much trouble positioning up into the wind on his own. He had one hand steadying a leading edge and the full weight of the beast—23 pounds—sitting on his other hand. I was glad to be on the tranny end!

"Before Steve had taken three strides, the B-52 left his hands and flew up and out as if on rails, to our dumbfounded amazement. Perfectly in trim, the monster steamed up like a train, penetrating well into the lift. What a magnificent sight to behold! The amount of sky consumed by its sheer volume and by its scything passes along the slope was simply stunning.

"The B-52 required only aileron and elevator to guide her around, which is just as well because the rudder had very little effect! The enormous flaps are tremendously efficient. Setting them at 10-20° created instant height gain without any noticeable pitch change. I used full flap a few times to dive down from a cruising height of 300-400 feet, an altitude the B-52 seemed to attain through none of my doing.

"I didn't plan any foolish maneuvers on the maiden flight. The satisfaction of simply soaring was reward enough and made all the effort worthwhile.

"Having dived from 300 feet against the flaps down to 30 feet, the elevators started to flutter. The violence was such that it sheared a threaded rod..."

"The flight was not without incident, however. After 20 minutes of flying beyond the camera's reach, I decided to do some low, low passes. Having dived from 300 feet against the flaps down to 30 feet, the elevators started to flutter. The violence was such that it sheared a threaded rod (as I discovered in the post mortem), and although I recovered from this alarming situation, there was no elevator control. The B-52 then pitched down at about 45° and hit the deck.

"Under normal conditions, it would have survived, as the gradient of the hill was 35° and covered with heather. I even leveled the wings. I was very unlucky. The only obstacles on the slope for 400 yards were a fence beside a cluster of rocks. It hit them both.

"The damage was extensive, but the flight was so exhilarating that I set to repairing the B-52 straight away."

The PSSA newsletter reports that since this maiden flight, Mr. Cocker has repaired the B-52 and flown it on several occasions.

I'll stop writing here to leave enough room for the photo, caption and B-52 "Dimensions" chart.

Comments? More information on power-scale soaring? Write! Let us know. Thanks!

DIMENSIONS

Wing span ..... 153"
Root chord ..... 26"
Wing area ..... 20 sq. ft.
Fuselage length ..... 10'2"
Weight ..... 23 lb.
Wing loading ..... 18.4 oz./sq. ft.
Airfoil ..... Eppler 205

Simon Cocker, Skytime Soarers,
67 Peel Street, MacClesfield,
Cheshire SK11 8BL, ENGLAND

Practical Vacuum Forming

Part One

By Harry Finch

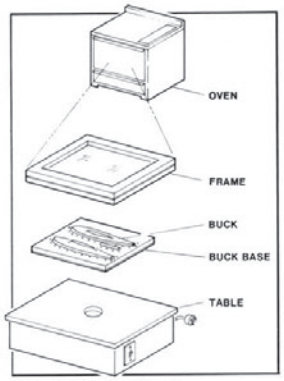
Vacuum forming is a wonderful process. It allows the home modeler to make a wide variety of plastic parts, from small, clear bubble canopies to full-size, almost-unbreakable styrene fuselages.

In this series of three articles, we'll describe how to do the following:

- Build a practical, inexpensive vacuum-forming machine.
- Make the tooling or "buck" to shape your part.
- Produce your first part, step-by-step, in exacting detail.

The basic method and vacuum source are like the ones used by some big plastic sign companies to form huge sign faces from 1/4-inch-thick sheet plastic. Believe it or not, our vacuum source is a vacuum cleaner motor. That's right, folks, just like the one in your shop vac.

The use of plastic materials in model making is commonplace and widely accepted. Many thermoplastic materials are available in sheet form at local industrial suppliers. We'll discuss the specific types, but first let's build our vacuum-forming machine and tooling.



Keep It Simple, Stupid.
The K.I.S.S. principle applies to Harry Finch's homemade vacuum-forming system. All the parts can be found at an average yard sale or easily fabricated. Yet this simple setup lets you form space-age plastics into beautiful, compound-curved slope-glider

The key word is "thermoplastic." It means that the material can be heated to a temperature well within the range of a normal home baking oven, forced into a desired shape, then cooled to retain the new shape.

K.I.S.S. It

The basic setup includes a vacuum-forming table, a buck base (to which you attach the mold or "buck" and a frame to hold the plastic sheet when you heat it. What we have here, folks, is a very simple approach to what can otherwise be a very complex and expensive process. In other words, an application of the time-proven K.I.S.S. principle: Keep It Simple, Stupid.

Take a bit of time at this point and do some serious thinking about the parts you may want to form. Consider the size of the parts and the type of material. The size is limited by the size of your oven and table. Unless you want to construct your own special oven (which may not be too difficult), you will be limited to making parts of only moderate size. We can make hundreds of parts within the size range of a kitchen oven, so don't be put off by the size question unless you want to make a size-XL glider. If you do, you'll need to build a larger oven.

Let's run through the construction of the vacuum table, the heart of our system. It's simple, but it requires the following important characteristics: a strong vacuum motor, a very flat, smooth table surface and complete enclosure of all electrical wiring.

Motor-vation

You should be able to find an old vacuum motor quite easily. Go to garage and yard sales, the Goodwill stores or thrift shops, even auctions. Look at the specification plate on the vacuum motor you find and check the amperage. It should be at least eight amperes. The higher the rating, the better.

There are many vacuum-motor configurations available. When you're looking for your motor, keep in mind that you need to be able to mount the suction end of the motor to the underside of your table.

Setting the Table

The table size should be at least six inches longer than the largest part you want to form. A length of about 30" by 18" should be about minimum. I suggest that you find a piece of Formica-covered countertop material. Many lumber yards have sink cutouts. They're perfect for your purpose and the price is right (like free). You'll need an appropriate on-off switch and a wall plug. Be sure that the switch has a rating that meets or exceeds the motor amperage and that it has a full enclosure for electrical safety.

The assembly of the vacuum motor and table is critical. Measure the diameter of the venturi on the motor and bore a hole of equal diameter in the center of your table. It'll probably be about 1-1/2" or 2" in diameter.

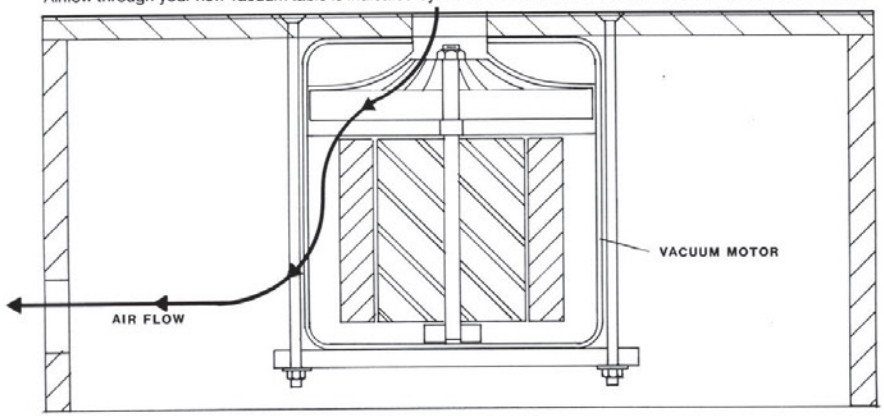
We want to mount the motor venturi as directly and closely as possible to the bottom of the table center hole. By keeping this connection close and absolutely airtight, you will ensure that the vacuum applied to the bottom of the tooling will be maximum. Any leaks, and you'll lose effectiveness.

Depending on the configuration of your particular motor, you may have to fashion an adapter collar between the motor and table to get a proper seal. In all cases, make a gasket and/or use Permatex or RTV silicone (bathtub caulk) to seal the motor to the table. Bolt the motor to the bottom of the table securely with suitable hardware.

The accompanying drawing shows how the air should flow beneath your table. Bore several airflow holes, each equal to the venturi diameter. You don't want to create any pressure under the table.

In our next installment, we'll work on the frame to hold our plastic material and the "buck," the mold that actually forms our part.

Box that sucker.
Airflow through your new vacuum table is indicated by the arrowed line. Its construction is kid stuff for a modeler.



This three-part vacuum-forming series originally appeared in R/C Soaring Digest. Thanks to Jim Gray for his cooperation and assistance in providing Harry's original drawings.

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This is an intelligence test.
DID YOU KNOW...
...that even a slow-moving, two-pound "floater" can do considerable damage if it crashes into a home, a car or a spectator?
DO YOU KNOW...
...how you're going to handle the financial responsibility if it's your glider that does the damage?
ARE YOU AWARE...
...that your membership in the Academy of Model Aeronautics includes a $1,000,000 insurance policy that covers such unpleasant incidents?
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S.O.S.!
Save Our Slopes!

Are you flying at an endangered site? Is it a situation where letters from responsible citizens could influence the decisions concerning your site's future? Then tell us about it. Write to Slope Soaring News, S.O.S., 2601 E. 19th St., #29, Signal Hill, CA 90804.

HELP!

Are you a skilled, meticulous model builder?
Are you an experienced slope pilot?
Are you located reasonably close to Signal Hill?

If so, *Slope Soaring News* needs your help. We'd like to be able to build and test slope-glider kits, but with our limited staff, we just don't have the time. So, we're looking for a few good modelers who would be willing to take a kit, build it exactly to manufacturer's specs, take it out and test fly it and then give our writers some objective input.

We need to know about the quality of the kit, if it came with good instructions, if you had any problems with it, how it performs... You know, all the things you yourself would want to know about a kit before you buy it.

Your comments, pictures of the kit you built and pictures of you flying it would be included in the story. We can't offer financial reimbursement for your work, just a certain amount of semi-fame and near-notoriety within the slope-soaring community as part of the SSN testing team.

Thanks, as always, for your support!

Scraps...

Greg Gentry's a regular at Long Beach and Point Fermin. And he carries a pack of *Slope Soaring News* with him where ever he goes...

SSN SLOPE REPS

Meet Greg Gentry. Greg's our first *SSN* Slope Rep, and he carries a stack of the latest issues with him at all times. He also keeps an eye out for new planes and ideas, and then he passes the information along to our editors for possible use in *SSN*.

While our success in getting your favorite hobby dealer to sell *SSN* has been marginal to say the least, our flying buddies are coming through. Up at Point A, for example, Bob Andrews has agreed to distribute the newsletter. As others join, we'll print their names - and photos, if we have them, so you'll know who's who.

Is there an *SSN* Slope Rep at your local hill? We're looking for dedicated fliers, good guys who spend a lot of time at their favorite local slope, to help us sell *SSN* and act as our representatives for their flying buddies.

Interested? Write or phone Charlie Morey at Slope Soaring News, 2601 E. 19th St., #29, Signal Hill, CA 90804, 213/494-3712.

THE LADY IS A PILOT

Go to Long Beach or Point Fermin, and you're likely to meet Les and Sharon Green. While Les is the original slope soaring instigator in the Green household, Sharon has taken up the hobby, too. And she's spending almost at much time at the sticks of their Wanderer, Gnome, Shadow and P-51 as Les.

We'd like to see more wives and "significant others" joining in on the fun at the slopes. What's the secret, Les? Sharon? Anybody?

SLOPE SCALE UPDATE

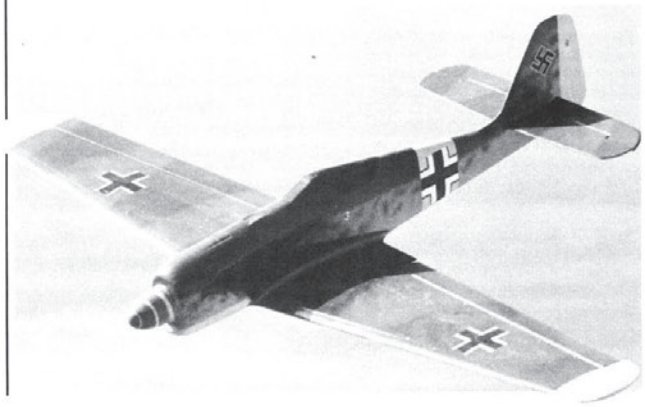
Paul Masura and Brian Laird of Slope Scale have added a new plane to their hangar of WWII Warbirds, a Gary Kawamura-designed Fokke-Wulf 190. The guys have also updated their planes with a very significant improvement: one-piece fuselages. You'll no longer be required to mate the two halves yourself. The Fokke-Wulf includes an instruction sheet and full-size plans. Half-size drawings still appear in the P-63 King Cobra and Messerschmitt kits, but their fuselages are now being assembled for you, too.

Meet Sharon Green. Sharing slope planes with husband Les.

Remember the various rumors about Slope Scale's P-51 Mustang kit? The one about the fuselage being too difficult to produce is true. Brian and Paul are now working on a new, left-side/right-side mold, rather then their typical top/bottom format. Masura says they'll have a P-51 ready in a couple months.

Slope Scale kits are available exclusively through Chuck's Model Shop in Hawthorne.

Mustang pilots beware!
There's a new warbird at Bluff Cove, and it's hungry. Slope Scale's new Fokke-Wulf.



...bits and pieces from the world of slope soaring

OUR FAVORITE DEALERS

We recommend you do your hobby shopping at the following *Slope Soaring News* dealers.

Wilshire Model Center
2836 Santa Monica Blvd.
Santa Monica, CA 90404
213/828-9362.

Chuck's Model Shop
14005 Hawthorne Blvd.
Hawthorne, CA 90250
213/644-5000.

California Model Supply
1064 S. Brookhurst Road
Fullerton, CA 92633
714/871-0616

West Coast Hobbies
4690 Convoy St., #108
San Diego, CA 92111
619/569-9633

Covina Hobby Center
140 North Citrus Ave.
Covina, CA 91723
818/331-1910

Please mention *SSN* when you call or visit. Thanks!

INTERNATIONAL SLOPE RACE CANCELLED

The South Bay Soaring Society's International Slope Race, scheduled for October 22-23 (as announced in last month's issue), was cancelled.

On Thursday before the event, we phoned C.D. George Paige to inquire about hotel accommodations and left a message on his answering machine. Our next call went to Bob Ratzlaff who informed us that the contest had been cancelled. Mr. Paige still hasn't returned our call, so we can't tell you why the event did not take place.

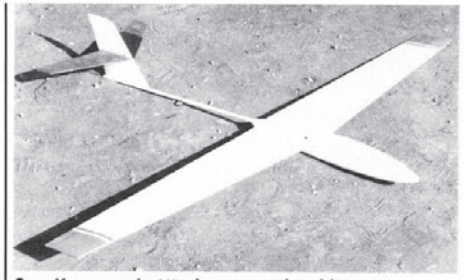
Too bad. We'd planned to give you extensive coverage of the ISR in this issue. Maybe next year...

MINIRACER

Armand De Weese is at it again! Every time he shows up at Long Beach, we all go sauntering over to see what beautiful little gem of an airplane he's brought to test. This time, it's his new one-meter slope racer.

What? You didn't know there was a one-meter class? You're right. There isn't. But finely crafted, comparatively inexpensive sailplanes like this one are a good reason to start one. They're easier to transport than their 11-pound big brothers.

Is this an idea whose time has come? Anyone else bulding miniracers?

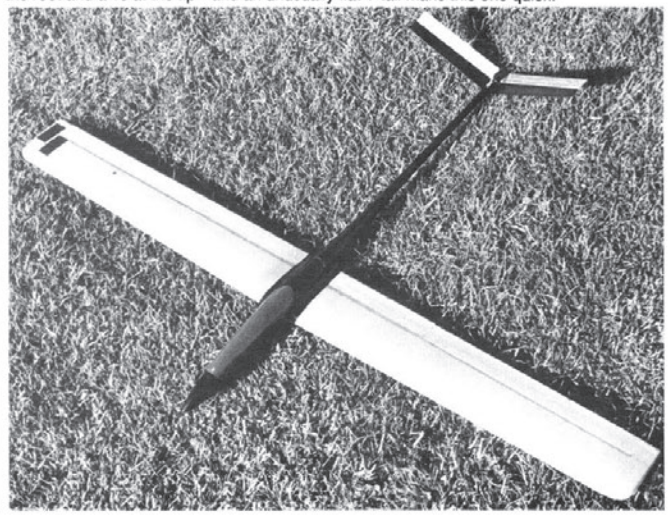


Gary Kawamura's 42" wingeron pod-and-boomer. Taking a break from the Bluff Cove warbirds.

BABY BOOMER

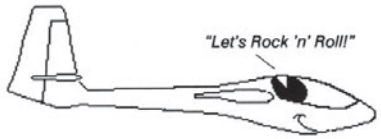
Gary Kawamura took a break from designing the typical Bluff Cove power scalers and built this very slippery-looking pod-and-boomer. The pod is formed from fiberglass, and the boom is a fiberglass push-rod. It's a wingeron design with the slope soarer's favorite airfoil, a modified Eppler 374. The wingspan is 42", and like most of its kind, it's extremely aerobatic and pretty fast, too!

A One-Meter Slope Racing class?
Armand De Weese is ready. But will he find challengers? Jack Chambers airfoils—a 20 at the root and a 13 at the tip—and an unusually-flat V-tail make this one quick!



The Aerobatic Adventures of Tipstall Wingover, III

Part Two: The Basic Roll



Step 1

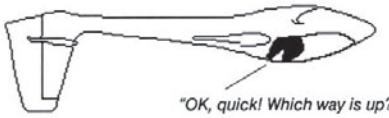
Get lots of altitude. Push the stick forward, build up enough speed to complete the roll, then pull back slightly to level or climbing flight.

Step 2

Move the stick to the side to start your roll. There is a huge difference in the way different planes will react to your attempted roll, so be prepared for anything, even success. Rudder planes will usually not roll as readily as aileron ships, but that doesn't mean it can't be done.

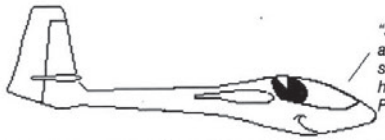
Step 3

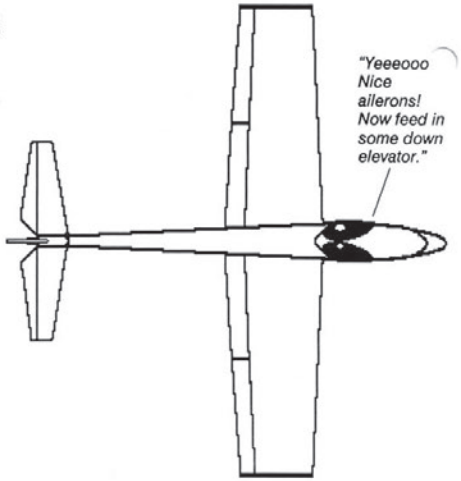
As the plane gets up to a knife-edge position, feed in some down-elevator, keeping the side-stick constant. Rudder planes seem to need lots of "down" to kick them over into inverted flight. Some aileron planes don't need any at all to perform a nice roll.



Step 4

As the plane completes the roll, returning to right-side-up flight, center the stick.





The Aerobatic Adventures of Tipstall Wingover, III, was created by Charlie Morey, 1988. Reprint permission will be granted upon request.
NOTE: Instructions are to be considered guidelines only. Due to the differences among sailplanes and their owners' setup preferences, stick positions can only be approximate. Flyers must observe their planes' flights and compensate accordingly. The author assumes no liability for damage to models, property, people or egos. Pilots MUST be AMA-insured.

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• If you are 19 or over by July 1, select one of these categories:
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Thank you very much. Your coverage becomes effective when this application is received at AMA Headquarters.
Academy of Model Aeronautics, 1810 Samuel Morse Drive, Reston, VA 22090, 703/435-0750

Air Mail

NEW KITS COMING

I am still doing my slope soaring column in *Model Aviation*. Since it only appears every other month, and my month happened to land on the Nats issue, it has been quite a while since it's been in the magazine. The column will be back next issue (January). Thanks for the concern.

As far as my slope kits are concerned, things are on hold for a while. I was originally kitting the Scimitar and Mariah with traditional built-up construction.

I have now made a few minor changes to both designs. The Scimitar will now be known as the Scimitar RS (Race Special) and will feature a fiberglass fuse and glassed foam wings. I've been playing around with some custom reflex airfoils and have found a couple that show great promise (and speed!). The Mariah has been enlarged about 50%, and it will also feature a fiberglass fuse and foam-core wings.

As soon as I get close to having the kits available again, I'll send you some photos and info.

Mark Triebes
Saratoga, CA

We missed Mark's column in MA and wrote him a letter to inquire about both the column and the kits. Thanks, Mark! — Charlie

KITE HILL CORRECTION

You made a couple mistakes in your Kite Hill story last issue.

In the directions, you said to exit off I-405. It should have said I-5. Instead of writing directions, why not show a simple map instead?

You didn't mention that Kite Hill also offers excellent flying on its back side during Santa Ana wind conditions.

Dick Vader
Los Alamitos, CA

You're right, Dick. We apologize. I wrote those directions hurriedly, and in my haste, I led you all onto the wrong SoCal freeway. We've included a map with this month's Long Beach site article. Our "Site of the Month" stories are usually written after one or two visits. We just didn't realize that Kite Hill offered good Santa Ana wind flying. But now that we do, you know where we'll be headed next time the wind comes from the "wrong" direction! See you there? — Charlie

Want Ads

THE FRENCH FLYER

Sensational easy-to-fly 36" wingeron. Complete with two standard servos. Only 16 oz. ready to fly. $85. (2-4 channel receiver required.) Greg French 213/597-6346. (10-11/88)

CANNON MICRO SYSTEM

Four-channel Cannon micro Tx, two-channel micro Rx, two micro servos. No battery pack or wiring harness. Transmitter pot needs cleaning or repair(?). $150, as is. Charlie Morey, 213/494-3712

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Name _____ Age ____ Male ___ Female ___

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I'm interested in ___ Building techniques ___ Flying techniques ___ Planes and the people who design them
___ Scale sailplanes ___ Combat ___ Power scale ___ F3B-style planes
___ Other?_____

Mail to Slope Soaring News, 2601 E. 19th St., #29, Signal Hill, CA 90804. Check or money order only, please.
PLEASE MAKE CHECKS PAYABLE TO "CHARLES MOREY," NOT "SLOPE SOARING NEWS." THANKS!

G/flex Epoxy adds a degree of flexibility to the WEST SYSTEM lineup.

G/flex Epoxy is a toughened, resilient two-part epoxy engineered for a superior grip to metals, plastics, glass, masonry, fiberglass, and wet and difficult-to-bond woods.

Introduced in June 2007, G/flex Epoxy is currently available in two consistencies: G/flex 650 Epoxy, a liquid epoxy, and G/flex 655 Epoxy Adhesive, a pre-thickened epoxy. Both have an easy-to-use 1:1 mix ratio.

G/flex has the ability to make structural bonds that can absorb the stresses of expansion, contraction, shock, and vibration. G/flex is resilient and impact resistant.

G/flex® is ideal for bonding a variety of materials, including dissimilar ones. G/flex has a superior grip so that it can be used to bond to metals, plastics, glass, masonry, and fiberglass.

G/flex is a simple two-part epoxy system. Resin and hardener are mixed in a 1-to-1 mix ratio by volume. G/flex provides a relatively long open working time, yet it cures quickly and can be used in cool temperatures.

G/flex can be modified with WEST SYSTEM® fillers and additives if you need to meet particular bonding needs.

Adding G/flex to other WEST SYSTEM epoxies can improve their toughness and flexibility.

For more information, download the G/flex PDF from Epoxyworks magazine: http://www.epoxyworks.com/25/pdf/G-flex_Epoxy.pdf

WEST SYSTEM

New 320 Small Batch Epoxy Scale

Mixing very small batches of epoxy just got easier

WEST SYSTEM® recently introduced a new scale configured especially for measuring epoxy in very small amounts. The new 320 Small Batch Epoxy Scale accurately measures the correct ratio of resin and hardener for batches smaller than one 300 Mini Pump stroke. It allows for the accurate dispensing of epoxy resin and hardener in a range from 4.4 fl oz down to just a few drops of mixed product.

The scale was designed for those projects requiring small batches of epoxy. Model builders, patternmakers, lure makers, artists, and hobbyists will find it particularly helpful. The scale can also be used to confirm the accuracy of your 300 Mini Pumps and to add pigments or other additives consistently.

The scale's dimensions of 5"x3"x3/4" make it highly portable. It is sturdily built, yet sensitive enough to measure as little as 0.1 gram (a standard paperclip weighs 0.4 gram). It is battery operated and features a LCD readout display.

Complete operating and epoxy measuring instructions are imprinted under the scale lid. Simple recalibration instructions are supplied within the carton and on the westsystem.com website. A full two-year repair or replacement, limited warranty certificate is also provided.

The scale is presented as part of a kit consisting of dispensing bottles, 3 1/4oz and 1 oz plastic cups, mixing sticks, and pipe cleaners. The kit retails for $37.95 and can be purchased at your local West System dealer. For information on locating a West System dealer, call 866-937-8797 or visit www.westsystem.com. ■

"Dad, it was a Fokker!"

By Pete Carr, wb3bqo@yahoo.com

Many years ago the Canadian group MAAC used to hold their version of the Nationals at Huron Park. The airport was an old RCAF base from WW-II that had been turned into a combination industrial park and civilian airstrip. Huron Park is located about 40 km north of London, Ontario, Canada.

My son Jeff and I would drive the eight plus hours from our home in Pennsylvania to London and then commute to the field each morning. He was 12 or 13 years old at the time and you can imagine the fun and adventure we shared on those trips.

On one such journey to London we were driving from the Peace Bridge at Buffalo toward London in rather heavy traffic. The area was near Sarnia in the middle of tobacco country with beautiful fields and 100+ year old farm houses. I was busy watching traffic when Jeff announced that we had just passed a Fokker D-7 in a farmyard on the north side of the road. I asked how big the model was and he replied that it was full size!

Now Jeff had been reading model magazines since he was of walking age and used to color the various construction drawings with crayons. He had been to many contests where Fokker D-7s and DR-1s were flown and knew them from the other WW-I aircraft. I told him that it was not logical to expect to find a full size Fokker in a farmyard in southern Canada in the mid 1970s. I thought that maybe it was a crop duster biplane done up in German colors or something of the sort. Jeff looked me straight in the eye and said "Dad, it was a Fokker."

Because it was getting late and traffic was heavy I elected to continue on to London but noted the location of the farm in question. The next morning we drove on to Huron Park and set up our sailplanes. There were old friends to see and the pilots briefing to attend so I didn't dwell on the mystery of the Fokker. Jeff, however, was pretty well fixated on the subject. We flew the two days of the contest with Jeff calling time for me while the official timers did their duty. Every once in a while Jeff would say, "Dad, it was a Fokker" until I was getting sick of the subject.

`One of the fun things about the Canadian Nationals was the chance to fly with Canadians from all over the world. I would take pictures of them and their aircraft, many of which I still have. When the Kodak camera got down to the last three shots I put the camera away. I thought that maybe, by some miracle, there might indeed be a Fokker in that farmyard.

It was late afternoon when we approached the area where Jeff had seen the aircraft. I slowed down and we both kept a lookout to the north side of the road. I'd noted a light brown brick farmhouse and a barn on the left of it. Sure enough, as we passed the farmhouse we saw the barn and the Fokker parked by it.

I was certain that I heard Jeff let out a big sigh of relief. Now, what to do!

I pulled that car into the yard and walked up to the front door of the house. After knocking several times I concluded that no one was home. I grabbed the Kodak and Jeff and I went to look at the aircraft.

The Fokker was all there. Some engine access panels were removed and there was a step ladder propped up against the port side of the cockpit. I took a quick look inside at the instrument panel and they were all there and labeled in German. The prop was beautifully carved laminated wood and I was amazed at its diameter. It would clip any grass that wasn't well mowed. The landing gear had the standard bungy cord shocks and the wheels were the same as I'd seen in photographs. Finally, there was a nasty looking machine gun mounted in front of the cockpit that looked very authentic.

I asked Jeff to stand in front of the ship for a size reference and I took the three pictures you see here. We got back into the car and left, still full of questions about the Fokker.

A couple of miles down the road there was a private airstrip so we stopped to ask questions. I asked a fellow in the office if he knew anything about the Fokker and he laughed. It seems that the ship was hand built by the farmer over period of many years. It wasn't licensed or certified. The fellow told me that on some occasions the farmer would taxi the Fokker down to the airport in the very early morning and take it up for a spin. This was frowned upon by the Canadian equivalent of the FAA and they paid the farmer a visit. From that time on, the Fokker had sat in the farmers yard.

The following year Jeff and I made the trip back to London and stopped to see if the Fokker was still there. It wasn't. On the way back we stopped at the airstrip again to ask about the farmer and the Fokker. We were told that one day the farmer had shown up at the field with the Fokker in the very early morning, took off and was never seen again.

This tale isn't about soaring or about the usual topics that inhabit the pages of *RCSD*. Rather it's about a mystery and a father and his son and a memory that is my treasure. ■