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R/C
Radio controlled
SOARING DIGEST
THE JOURNAL FOR R/C SOARING ENTHUSIASTS



JOY TO THE WORLD!

R/C SOARING DIGEST

Radio controlled

THE JOURNAL FOR R/C SOARING ENTHUSIASTS

ABOUT RCSD

R/C Soaring Digest (RCSD) is a reader-written monthly publication for the R/C sailplane enthusiast and has been published since January, 1984. It is dedicated to sharing technical and educational information. All material contributed must be exclusive and original and not infringe upon the copyrights of others. It is the policy of RCSD to provide accurate information. Please let us know of any error that significantly affects the meaning of a story. Because we encourage new ideas, the content of all articles, model designs, press & news releases, etc., are the opinion of the author and may not necessarily reflect those of RCSD. We encourage anyone who wishes to obtain additional information to contact the author. RCSD was founded by Jim Gray, lecturer and technical consultant.

RCSD should not be considered to endorse any advertised products or messages pertaining hereto. An advertising rate card is available for businesses, and clubs.

R/C Soaring Digest
556 Funston Drive
Santa Rosa, CA 95407
phone: (707) 578-7871
e-mail: rcsdigest@aol.com

<http://www.b2streamlines.com/RCSD.html>

RCSD Staff

Jerry Slates - Editor/Technical Editor
Judy Slates - Managing Editor, Subscriptions
Lee Murray - RCSD Index/Database
(available on-line)
Bill & Bunny Kuhlman - RCSD Web Masters
PayPal Coordinators

Feature Columnists

Bill & Bunny Kuhlman (B²),
Lee Murray, Tom Nagel, Mark Nankivil,
Dave Register, Steve Savoie, Jerry Slates,
Greg Smith, Gordy Stahl

Artwork

Gene Zika is the graphic artist
who designs the unique ZIKA clip art.



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<http://www.b2streamlines.com/RCSD.html>

Monthly Feature Photography & Web Version of the Printed Article (where appropriate)
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..... **Subscription Information**

..... **Advertising Rate Card** (Adobe Acrobat PDF format)

..... **RCSD Feature Columnists, Reporters, and Editors**

..... (E-mail/web addresses, plus general information about their areas of interest)

"Getting Started in RC Soaring" Getting started guide - Adobe Acrobat PDF format

Links to Organizations, Special Interest Groups & Clubs

On-Line Articles - Great articles originally written for the printed version of *RCSD*.

..... "Trimming Your Sailplane for Optimum Performance" by Brian Agnew

..... "Flies Faster" by Dr. Michael Selig

..... "The Square-Cube Law and Scaling for RC Sailplanes" by Dr. Michael Selig

..... "Modifying & Building the MB Raven (Parts 1-4)" by Bill & Bunny Kuhlman

..... "Butterfly and Moth Airbrushing Tutorial" by Joedy Drulia

Bookshelf Listings - A listing of recently published books of interest to aeromodelers.

Complete RCSD Index, 1984-2001



The Soaring Site

Gift Giving Ideas

Well, we all know it's that time of year when folks like to share in the Christmas spirit and do a little Christmas shopping trying to figure out (or having figured out) just exactly what their recipient would really like to receive. (Of course, there are always those that buy for themselves thinking, no doubt, that if they like it, everyone else is supposed to like it, too!) So, if you'd like to be able to give someone ideas, you'll find some handy suggestions by Dave Register in this issue of *RCSD* in an article entitled "Gift Giving Ideas."

And, these ideas are also handy to keep around when your birthday or other special occasion dates arrive during the year!

My thanks to all the *RCSD* Team folks that submitted ideas, and to Dave

Register for volunteering to compile, coordinate, and edit this special article on "Gift Giving Ideas." BTW (by the way), he's still recovering at home, so if you get what you really want under the tree, thanks to Dave, be sure to drop him a note so he'll consider doing the volunteering again, next year!

And, to all of you a very Merry Christmas to each of you and yours! May 2003 be a year that all of us can look forward to and enjoy!

Happy Flying!
Judy Slates

SCHEDULE OF SPECIAL EVENTS

February 1-2, 2003

Southwest Classic Phoenix, AZ

March 15-16, 2003

The Classic Mid-Winter Southern California
Torrey Pines Vintage Sailplane Regatta
<http://www.agcsc.org>

October 10-11, 2003

Texas National Tournament (TNT) Dallas, TX
www.SLNT.org



JOY TO THE WORLD!

Merry Christmas!

The cover of this issue was created by Gene Zika, Las Cruces, New Mexico.

Please send in your scheduled 2003 events as they become available!



STREAMLINES

SPECIALTY BOOKS FOR AIRCRAFT MODELLERS

Write: P.O. Box 976, Olalla WA 98359 USA

E-mail: <bsquared@b2streamlines.com>

Web site: <<http://www.b2streamlines.com>>

ANNOUNCEMENT

Fellow modellers,

We are discontinuing sales of all of our books, new and used, effective December 31st, 2002. If you have planned to make a book purchase "some day," we encourage you to act now!

In addition to having all of our published books in stock, a large number of used books are still in our inventory. Please check our web site for an up to date listing of available titles.

We've thoroughly enjoyed the book publishing business and thank everyone for supporting our endeavors over the past dozen years.

Yes, we're going to continue writing our "On the 'Wing..." column for *RCSD*!

Thanks again,

Bill & Bunny

Gift Giving Ideas For the Sailplane Enthusiast

from The RCSD Team

Compiled and Edited by Dave Register
Bartlesville, Oklahoma
regdave@aol.com



Ahh, the holiday seasons are upon us at last. It's a time for rejoicing with both spiritual and community spirit. With all that this old world has been through this year sometimes it makes you wonder. But we're still here and there are lots of things for which to be thankful. And that spirit spills over into the joy of exchanging gifts with family and friends.

For those in the modeling hobby, it reminds one of the argyle socks from Aunt Em, the new leather wallet or purse from the significant other and maybe the glorious colors of that paisley tie or scarf from the kids. And all the while you're having this guilty little thought, "Gee I wish I had a couple of new servos..."

Well folks, RCSD's columnists are here to help again. And all you need are: this edition, a magic marker, and a little subtlety in leaving this article in a place of convenient reading for those near and dear to you. (Hint - in our household that's the wicker towel hamper next to the upstairs toilet!)

Polling our columnists has led to a list of ideas you might want to consider. They range from planes to electronics to shop things, a little bit of something to fit most budgets. They reflect the interests of the submitters but there are a lot of good ideas in here so read on and maybe pencil something in around the borders if we've missed your favorite item.

But whatever you do, have a safe and joyous holiday season. Best Wishes from the gang at RCSD!

From All of us!

Of course, our very first idea is a gift subscription to RCSD. Go on-line for details and convenient access. Follow the subscriptions link. Payable on-line (Pay-Pal) or by mail:
<http://www.b2streamlines.com/RCSD.html>

**Bill and Bunny Kuhlman
(B² Streamlines):**

1) Richter R/C Aircraft Design "Weasel" and "mini Weasel"

The Weasel is a 36" span EPP tailless 'ship for slope combat and fun flying. It is at the same time both very maneuverable and quite forgiving. The kit includes EPP wings and fuselage, balsa elevons, Coroplast fin, tape for covering, and a full hardware package. Other than the usual tools and glues, all that's needed to complete the kit some filament packing tape, two servos (Hitec HS-81 or similar), mini receiver (we're using an FMA M5) and a 270 mah battery pack. Total weight of the completed air frame is 10 - 13 ounces, and with a wing area of 375 in² the loading is very low. Price of the Weasel is US\$50 plus shipping.

The mini Weasel has a span of just 24 inches. Completed weight is just 3.8 to 4.5 ounces, and the wing area is 168 in². Based on the Weasel, the mini Weasel is extremely maneuverable and also very transportable. It's a great airplane for flying in tight spaces. The kit includes EPP wings and fuselage, Zepron fin and elevons, roll of tape, plus a full hardware package. Adding a 50 - 150 mah battery pack, two micro servos (Cirrus CS-10bb or MPI MX-30) and a micro receiver (Cirrus MRX-4 or FMA M5) gives an airplane you can fly on the slope in light lift or thermal over a flat field. Price is US\$35 plus shipping.

Richter R/C Aircraft Design
1250 Northridge Rd.
Santa Barbara CA 93105
(805) 687-4435
www.flyweasel.com

2) Small tools

Micro-Mark has a catalog of hundreds of small electric and hand tools. Prices range from under a dollar to several hundred dollars. Sale catalogs come out several times per year with either reduced prices or free shipping.

Micro-Mark
340 Snyder Avenue
Berkeley Heights NJ 07922-1595
(800) 225-1066
www.micromark.com

3) Solingen razor plane

Speaking of small tools, the one small tool which we recommend everyone have in their possession is a true razor plane. These are of cast aluminum alloy and use a double edge razor blade. These planes can be set up to take off slices of balsa wood which are completely transparent. Uses include shaping balsa leading edges, smoothing rib surfaces, and putting a trailing edge taper on 1/16th inch sheet balsa. Brands we have are WIL-KRO-PROD and Little Giant. Look for these at garage sales and antique shops. Prices range from ten cents upward, depending on source. The double edge razor blade these planes use is just too thin to use on spruce or other dense woods. A Solingen (Germany) FIX plane or similar should be used for this sort of work. The Solingen razor plane is available from Hobby Lobby:

Sollingen Balsa Planer \$ 9.40
Spare Blades For Planer \$ 5.20.
www.hobby-lobby.com

4) Receivers, servos and extension cables

As the computing power of transmitters increases, the number of models a single transmitter can hold in memory is increasing. A single transmitter can now be set up to handle eight or more models, each with their own receiver and complement of servos. Additionally, high performance models now use six or more servos - four in the wing plus two more to actuate tail surfaces. If you have a transmitter and the eight models to fill its memory banks, you also have as many as eight receivers and 48 servos. While you may be able to switch receivers between aircraft, switching servos on the field is a lot more problematic. As

Bunny is fond of saying, "You can never have too many servos." Be sure to check out [servocity.com](http://www.servocity.com). Servocity carries Hitec and Futaba products - everything from receivers to servos to extension cables. Not only are servocity prices low, they always ship for free!

<http://www.servocity.com>

5) Plans

Looking for an easily built airplane as a project for your son or daughter? How 'bout a unique scale sailplane? Looking for something to convert to electric? Old time free flight your interest? Harry Volk's Cirrus Aviation is a wonderful source of plans. Prices start at US\$3.00, shipping included. Prices are in US\$ and Visa and MasterCard are accepted.

Cirrus Aviation
P.O. Box 1375
Nanton Alberta T0L 1R0, Canada
(403) 646-1188

You can find the Cirrus Aviation online catalog at:
www.telusplanet.net/public/H_bvolk/

6) Winches and winch parts

The Winch Doctor produces Real Balls machined aluminum end caps for the Ford long shaft motors we use on our winches. These end caps are finned for exceptional cooling and have real ball bearings installed. These are the best thing for winches since Ford started building the long shaft motors! The Winch Doctor also has replacement brush sets and beautiful machined and anodized turnarounds for sale. Real Balls finned end caps are US\$250, replacement brush sets start at US\$10, really cool turnarounds are US\$80. Be sure to visit the Winch Doctor web site and check out the beautiful complete winches (US\$950) and winch drums (US\$200) which are also available.:

www.monkeytumble.com/winchdoc/index.htm

7) Adjustable tow hooks

We've really missed the original Airtronics adjustable tow hooks. Those are the ones which use an L-shaped hook and two locking nuts within a

machined aluminum channel. Luckily, a replacement is now being carried by George Voss and Soaring Specialties. The new channel is two inches long and gives an adjustable travel of 1.5 inches. A much stronger tow hook is a welcome improvement. Price is three sets for US\$28.00.

George Voss
1403 Lincolnshire Rd
Oklahoma City OK 73159
(405) 692-1122

between 9 AM and 9 PM Central time
<http://www.soaringspecialties.com>

DFR's Note:

For the bookshelf, check out the B2 website for an excellent selection of books on design, soaring history and humor. Something here for every modeler's taste and education during the long winter ahead. Better hurry! If you noted their ad in this issue, they're discontinuing the sales of all their books the end of this year.

<http://www.b2streamlines.com>
P.O. Box 975 WA 98359-0975 USA

Mark Nankivil suggests:

1) The books "Sailplanes 1920-1945" & "Sailplanes 1945-1965" by Martin Simons

Books are always a great way to think through and dream about future scale sailplane projects. I'm promising myself to get a scale aerotow sailplane ready and flying in the 2003 season and what better way to get the creative juices flowing then a good book to read and peruse on a cold Winter's night here in the Midwest?! The books are available from Raul Blacksten with the Vintage Soaring Association, P.O. Box 307, Maywood, California, 90270:

e-mail: raulb@earthlink.net

2) Multiplex Milan Sailplane

I have toyed with obtaining a new large thermal sailplane for the coming year and have really liked the looks of the Milan. The price is pretty reasonable too, especially when compared against the molded ships on the market today. I'm not into head to head competition flying like in years past but still want to be able to take on

the best at the contests I do fly in. The Milan is available from:

Hobby Club
P.O. Box 6004
San Clemente, California, 92674
949/425-1362
www.hobbyclub.com

3) Manta-Ray & BD-5

Cavazos Sailplane Designs has a couple of models that catch my eye. First off is the Manta-Ray, a big 76" span EPP slope flying wing. It'd be fun to outsize some of the other EPP flying wings on the slope. CSD also have a great looking slope scale/electric powered BD-5 model. With a fiberglass fuselage and foam core wings, this looks like a very nice model to find under the tree on Christmas morning.

Cavazos Sailplane Designs
909/485-0674
www.rcglider.com

4) Radio Carbon Art's Videos

Two of their latest releases, "Endless Lift 3" and "Secrets of Thermal Soaring," look to be the perfect videos to pop into the VCR when it's too cold and windy outside to fly.

Radio Carbon Art
P.O. Box 2311, Corvallis, Oregon,
97339
541/752-9661
www.radiocarbonart.com

Dave Garwood likes:

1) Hangar 9 AeroPeak field charger

We have many field chargers available but this little gem has three sterling advantages: AC/DC operation, low cost, and simple operation. It receives power from both 120 AC volt house current as well as a 12 volt DC car battery. It has only two buttons (select 1 amp or 4 amp charge rate, and start) and no programming needed, and it's inexpensive. It's designed to charge a 4-5 cell receiver battery pack at one amp, and a 6-7 cell motor pack at 4 amps. I've been using one for about four months with excellent performance and no problems - not even a blown fuse. Hangar 9 AeroPeak field charger Horizon Hobby \$39.99:

www.horizonhobby.com

2) Hitec Focus III Single Stick AM radio set & Hitec Focus III Single Stick FM radio set

An extension of the successful single-stick Focus II transmitter, the Focus III ergonomically designed 3-channel transmitters add a proportional third channel for motor speed control, and mixing (CHs 1 and 2) for elevon or V-tail. This makes the transmitter an excellent fit for flying-wing slope planes (which need elevon mixing) as well as electric aircraft. They come in sets with receiver and choice of servos. The AM version needs alkaline batteries or an aftermarket Ni-Cad batteries and wall charger upgrade; the FM version comes with Ni-Cads and wall charger.

(DFR note - go for the NiCd FM version with the double tuned receiver. The Feather Rx is neat for indoors but will have range/interference problems when flying with a group out doors.)

Hitec Focus III Single Stick AM radio set \$74.99 & Hitec Focus III Single Stick FM radio set \$84.99:

www.hitecrd.com

3) FMS R/C flight simulator

(DNR note - Dave recently sent a note about RC flight simulators and, in particular, a new one out there that's freeware but may require some accessories and other low cost items. There are different versions of the program available. Dave is using FMS ver 2.0 beta 7, and the planes need to be made for that version to run without problems.)

A computer RC flight simulator can come in handy when training a new pilot, or for entertaining yourself when snow is falling outside. There are four or so commercial RC flight sims available, and FMS Flying Model Simulator can be downloaded for free. There are several developers in several countries working on the sim and making planes for it. At least 200 planes are downloadable, including well-known models, warbirds, jets, and a Pterodon. Gliders are supported including winch launch, hand launch, and slope. I've spent three days with the program, flying from the keyboard while waiting for my connector cable



to arrive to fly with a transmitter. The FMS program is available from:

http://n.ethz.ch/student/mmoeller/fms/index_e.html

Matt Clement makes the cables (\$21), and his site links to more than a dozen sites where planes can be downloaded. Tom Nagel also highlighted the SIM and Matts cables but notes that the FMS program does not appear to be compatible with Windows XP:

<http://fms1.mattclement.com/>

One of the most prolific plane developers is:

http://homepage2.nifty.com/logic_wizard/fms_e.htm

Gordy Stahl proposes:

1) EPP wing

Cool cheap and easy to build EPP wing - maybe try out the Highlander mentioned a bit further down this article.



2) Fun Electric RTF

(DFR note: For a very simple and affordable entry level two channel polyhedral ship, the Electron 400 from NE Sailplane looks really good (\$149.95). To complete the package, a Speed 400 system is available for an additional \$94.95. This is a pre-built, pre-covered plane with a gel coated fiberglass fuselage. It's polyhedral, rudder/elevator. The Hitec 3 channel works great in this plane.

www:/nesail.com

Tom Nagels suggests:

1) Stocking Stuffers:

- Cyanoacrylate assortment thin, medium, thick.
- A six pack of rolls of Blenderm medical tape, one of the best hinge tapes going.
- A dispenser pack of exacto #11 blades.
- A couple of spray cans of M-77, because these are going to be collector items soon.

2) Mid-range gifts

Dremel tool accessories: drill press, router, flex drive, assorted bits and buffers and stones.

3) Sirius Pro charger

Or, if he's already got a Sirius Charger, a 110 volt to 12 volt power source so he can use the Sirius charger on the work bench.

4) Transmitter case

5) The Ultimate Hat

Very stylish, durable and sun-protective. Floats, too.

6) Gift Certificates

A really flexible way to provide some fun for the modeler in the family. Many of the mail order places mentioned will supply these. In particular, North East Sailplane Products sells gift certificates and has a very diverse catalog:

www:/nesail.com

Dave Registers ideas include:

1) Radio Stuff/Accessories

To complement your umpteen model memory transmitter, any of the double tuned FM receivers from FMA Direct are great. Prices range from \$45 to \$90 (less crystal). I've personally used the Extreme 5 for DLG and the Quantum 8 for open class. Mail order only from FMA Direct:

www.fmadirect.com

Hitec RCD has an excellent reputation in after market equipment. The 555 receiver is one of the most popular out there and the new Super 8 is getting good reviews. See the Hitec website for information. These units are usually sold retail at local shops or retail mail order:

www.hitecrd.com

Accessories:

- Of the fast chargers out there I also like the Sirius series of portable Tx/Rx chargers. These are very reasonably priced, work great and also include information on how to wire around the reverse polarity diodes in Tx charging circuits that were popular a few years ago. Sold in some hobby shops or at their website. I personally use a Sirius Pro (\$129.95) and the Sirius 100 (\$49.95 for DLG batteries) and they've been extremely reliable. Flange up an accessory cable from Radio Shack for the cigarette lighter in your car and you've got a great field charger:

www.siriuselectronics.com/

- There are a great many battery analyzer/charger systems now available, typically in the \$100 or higher range. These are essential tools for keeping your batteries in good shape. I use the FMA Einstein (now discontinued but available on close out at FMA) but there are newer and better versions from FMA, Hitec and Hobbico to name a few. In particular, the new FMA SUPERNOVA 250S Fast Cyclor looks very good. It can discharge and rapid charge from 1 to 25 cells from a +12VDC supply such as a car battery or your field box battery. The super feature is that the user can store the cycle parameters for up to 10 different battery packs in memory. The battery

discharge capacity is presented on an LCD display. Recommended Accessories: One 201BCB cable that is a 9", 2.5mm barrel cable to two banana plugs; and a 501MC Versatile Adapter that will allow interface of most popular radio equipment via the above cable. PS2-12US to connect the FC700 to your AC wall outlet for use in your shop. ~ \$130 at the FMA web site:

www.fmadirect.com

- For those flying DLG and looking for a good single axis piezogyro at a reasonable price (\$50), I can highly recommend the GWS at Todds Models. It weighs only 7.0 grams (.247 oz.) including a plastic injection case. For some critical applications such as indoor slow flyers, the plastic case can be removed that makes its actual weight just 4.8 grams. Go to Todds site and follow the link to servos:

<http://www.toddsmodels.com/>

2) Plane

For beginners its hard to go wrong with the Highlander 2M. (Note Gordy's suggestion for a good, cheap EPP wing!) The Highlander is a complete kit which includes all EPP foam parts, leading and trailing edges and all hardware as well as a detailed instruction manual that shows both the polyhedral rudder and elevator setup and the dihedral aileron wing. A perfect match for the Focus IISS radio! Available direct from MAD, local hobby shops as well as from NE Sailplane Products for ~ \$74.95:

www.madaircraft.com
www.nesail.com

I've had a whole bunch of cheap thrills flying 7 or 8 cell, Speed 400 electric in the last year. A couple of planes that are really neat for just messing around are the FMA Razor - I like the Speed 400 7 cell version for ~ \$140 complete:

www.fmadirect.com

The electric Zagi is also an excellent fun ship to fly. The Zagi 400X Complete Package from NE Sailplane Products comes with: Zagi-400X wing with hardware, Special Molded motor tray and canopy, Speed 400 motor and prop, 18 amp BEC Speed control with brake, 7 cell 1400 mah Nicad battery

with Deans Ultra Plug, Deans Ultra Plug on a charging lead, complete hardware package. Price from NE Sailplane is \$165. Or, go directly to the Zagi web site and check out both the 400X and all the other neat stuff they have:

www.zagi.com

For a REALLY different flying experience, you might want to check out the Park Hawk ornithopter (~ \$200) at NE Sailplane Products. There's a great review of this kit, with lots of interesting advice and building tips, at:

<http://www.ezonemag.com/articles/2002/sep/parkhawk/parkhawk.shtml>

This is waaay out of the box for most of us but it looks like a very cleverly engineered flying machine:

www.nesail.com

3) Video

I STRONGLY encourage any beginning modeler to get the Old Buzzard Goes Flying video from Taylor Collins at Soaring Stuff. The video is loosely based on Dave Thornburg's Old Buzzard Soaring Book. This 70 minute video takes you through the basics of micro-meteorology... and under the Ole' Buzzard's tutelage, you will learn to accurately "Read" the air... know where the lift is... where the sink is... and learn how to achieve that ultimate goal of all soaring pilots... to Stay Up... until YOU are ready to come down. Be sure you go all the way to the outtakes! Available for 24.95 at Taylor Collins site. While you're there, check out the other neat stuff that Taylor stocks (tape, skids, etc.):

www.soaringstuff.com

Also, any of the Radio Carbon Art videos are excellent viewing. The Endless Lift Series is exceptional and many of the specialty videos are bundled for good savings. Excellent video quality and commentary throughout from Paul Naton, the master of modeling videos. Most videos run around \$20 to \$25. Too many options to describe but check it out at:

www.radiocarbonart.com

4) Programs and Books

If you're into design work and analysis, I can highly recommend Chuck Anderson's Model Design 8.0 program. Contact Chuck directly at canders@edge.net. Also available at NE Sailplane for \$54.95.

One of the more advanced total design packages is available from Blaine Beron-Rowden. This spreadsheet based program is an integrated system that looks at overall stability, design and optimization. The package is called Plane Geometry and is available from Envision Design (Blaines company). I don't recall the price as I bought this some time ago but its worth every cent. There are also some great technical articles at Blaines site:

<http://members.cox.net/evdesign/>

5) Skegs, Skids and other stuff

When skegs and skids first came out a few years ago, they scared the bejabbers out of me. As useful as these are for spot landings, the razor sharp items made from carbon fiber reinforced material are real safety hazards and can cause serious lacerations to any hand, face or other soft tissue that they hit. (I've seen it happen!) So when Tim McCann started making the blunt high density polyethylene versions I had to give them a try and I've never been disappointed. Yeah, they can hurt if you make a serious mistake but it's no worse than a bruise instead of the slices you can get from the sharp stuff. And they work great for their intended purpose. All sorts of variants of both items at Tim's website ranging from \$5 - \$10 apiece. If you're in the market for a turn-around (another hard to find item these days), Tim's got a very good one for \$110. And an excellently well designed winch kit for \$265. The drum and frame are exceptionally well done. Add in a set of ball bearings for the motor from Real Balls (see B² notes) and you've got a great setup:

www.supeskeg.com

6) Fun Stuff for the Shop

Recent surgery has me out of the flying end of things for a few more months but the shop is a great place to hang out. Here's a few ideas:

Major tools

I don't see how any shop can be put together without a 16 variable speed scroll saw. These usually run around \$140 from Sears or other hardware stores. If you go this route, be sure it has variable speed, takes pin end or pin less blades, a tilt table and has a 16 or so reach.

Second item on this list is a combination belt and disk sander. The smaller ones from Dremel are fine but mines from Sears and has been very rugged and reliable for years. Usually < \$100 unless you go for variable speed.

Finally, the most useful table saw I've got is the Tilting Arbor Table Saw from Micro-Mark. This is a little pricey at \$329.95 but is the best tool in my shop and comes into play for almost every project. You really need to get on their website or get a catalog so you can just daydream all day long about all the hobbyist items they've got for all skill levels:

www.micromark.com
1-800-225-1066

Scrollsanders

If you go for that scroll saw, you've GOT to try some of Chris Adams' scrollsanders. Every time I start a project these little gems find another way to be handy. Check out Chris website for dealer or ordering information as well as links to a number of soaring related sites. Scrollsanders come in many grits and combinations but are typically in the \$10 - \$20 range for a variety pack:

<http://www.scrollsander.com>

Postal Scale

If you're into small models, and DLG in particular, you've got to have a reasonably accurate scale. I found a good one recently at Staples. It's a top loading postal scale (digital, battery operated) that's good for up to 5 lb. (~2kg) but is accurate to within a gram at light weights. It reads in lb., oz. or grams and has a tare capability (very useful!). Reasonable priced at around \$45. Its by Royal Scales and is the EX5 model. Beats the socks off my old mechanical gram scale.

Small Tools

What every modeler needs to have is the MicroMark catalog. This is a GREAT source for hard to find modeling tools. There are just too many things here to mention so go to their website and you'll find more neat stuff than you can imagine in all sorts of price ranges:

www.micromark.com

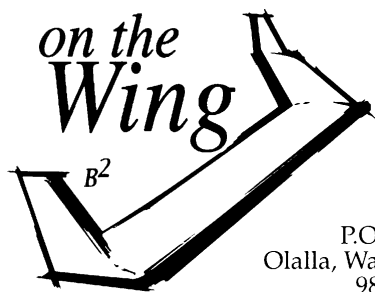
A sampler of some of my favorites

Just about any Dremel attachment, bit or fitting you can think of. In addition

to the router and shaper table, they also have the drill press accessory.

PanaVise (\$39.95), pin vise set (\$9.95), surgical (straight or curved - \$6.95 each), tool makers angle plates (\$9.95 to \$19.95), angle setter for cutting any angle in 3 or 4 wide sheet (\$10.95), steel machinist squares (\$9.95 to \$12.95 depending on size), complete set of micro drill bits with case (#61 thru #80 - very hard to find - \$18.50), drill and tap set for 00-90, 0-80, 1-72 and 2-56 (also very hard to find - \$19.95), just about any type of inside, outside, right angle, deep reach, etc., clamp (many sizes and prices), just about any size or type of jewelers file, rasp and other hand finishing tool, and many, many more neat hobby tools and supplies.





P.O. Box 975
Olalla, Washington
98359-0975

bsquared@appleisp.net
<http://www.b2streamlines.com>

The Howe Farm Hawk

We've been flying tailless aircraft of various types for nearly twenty years. During this time, we've had the privilege of tracing the face of the Dungeness Spit with seagulls, coursing through huge clouds of nearly invisible insects with swallows, and flying through the same general mass of air as Bald Eagles.

During all of the flight time we've shared with various feathered creatures, we've never had one of our tailless aircraft attacked. In fact, we recently had an experience which demonstrated an opposite avian tendency.

The site of this enlightening experience was the Howe Farm, an 83 acre plot of land which is now under ownership of Kitsap County. The included map shows the general layout of the site. The parking lot on the west side is quite small, capable of holding just a few cars. The area between the parking lot and the barn is a rounded uphill slope, while the area to the east of the barn forms a shallow valley. Another shallow valley begins south of the parking lot.

Because the site is completely surrounded by trees, and there are lines of trees on the property, it's very difficult to determine wind direction on the ground. Still, breezes coming from various directions hit the tree lines and provide sporadic "slope lift." Additionally, on this visit, the larger open spaces produced some light thermal activity.

We met Mike McIntyre, a fellow sailplane enthusiast, at the farm and set up the winch between the parking lot and the barn. We put the turn-

around out in the eastern valley, about 900 feet away, as noted on the map. Due to the slope, the line was completely clear of the ground for its entire length once the winch motor was run up.

Several flights of increasing duration with both the R-2 and Blackbird #7 demonstrated the challenging aspects of finding significant sustained lift at this field. The R-2 was launched again. After a few moments of flying around in search of thermal activity, it was steered to the area over the parking lot (Area A on the map). The wind at this point was blowing into the trees around the lot, and a light updraft was present. The R-2 started climbing.

Several turns later, the R-2 had gained some height and it seemed like the lift was going to be somewhat consistent. Suddenly, we heard the squeal of a raptor and saw a Swainson's Hawk flying in from the south. Unhesitatingly, the hawk joined the R-2, calling intermittently in a joyous tone.

We had the R-2 in a left hand turn, and the hawk, while able to turn a bit more tightly, was making left hand turns as well. For a few minutes the hawk and the R-2 shared the same lift and climbed in unison. When it became obvious that the lift was getting lighter, we turned the R-2 toward Area B, where we'd found lift during a previous flight.

As soon as the R-2 left the hawk and headed across the field, the hawk screeched loudly. As the R-2 got further away, the cries of the hawk became more intense. We found some lift in Area B and started climbing in a right hand turn. Two turns later, we heard a loud "kriee-e-e-e," and looked up to see the hawk, wings folded back, streaking toward the R-2.

We anticipated the hawk rejoining the R-2, but we did not anticipate the hawk would circle in the opposite direction. Meeting head-on twice per revolution was immediately envisioned as being a problem, but the hawk was back to the happier sounding squealings of before and seemed comfortable with the situation. We tried to keep the R-2 circling steadily.

As when we were flying over the

parking lot, the lift began fading. Since we had good height, the R-2 was headed north toward Mile Hill Road. In Area C we hit a bump that seemed promising and began circling. We heard the hawk call out and turned just in time to see him make a near vertical descent into one of the trees a short distance to the north of where we had been circling.

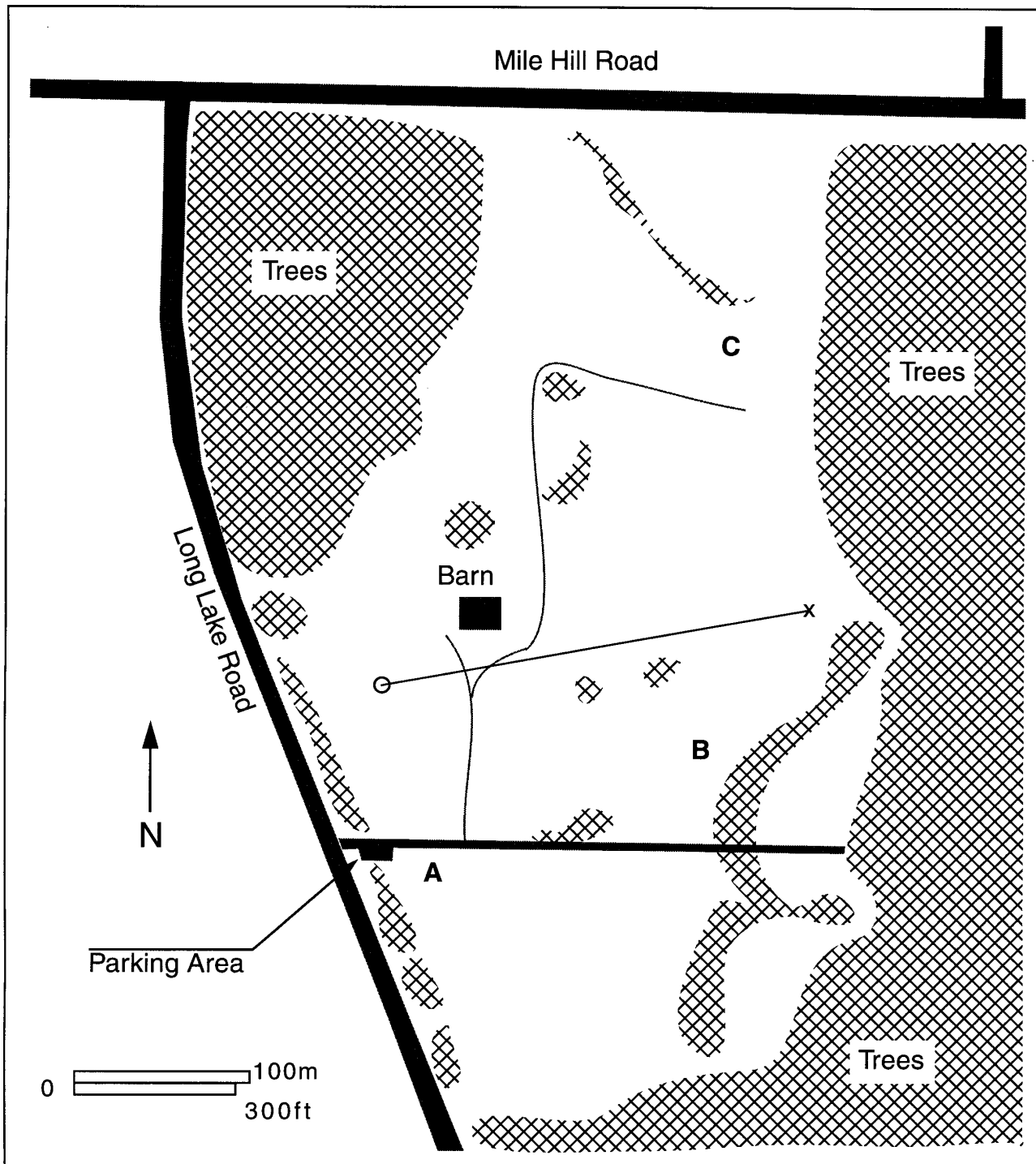
The bump turned out to be nothing more than a bump, so we steered the R-2 west and then south between the tree line and the barn, circled a couple of times and landed slightly downhill from the winch. As soon as the R-2 was on the ground, the hawk let out another "kriee-e-e-e," left the tree and headed to Mile Hill Road. It was difficult to estimate, but it seemed like the hawk went further toward the road than we had traveled before he started circling and climbing. Perhaps he caught a bubble coming off the asphalt roadway.

Interestingly, the hawk made only three climbing circles before tracing the same west-south route taken by the R-2 just moments before. A single squeal was heard as he flew overhead, and seconds later he was sitting in a tree to the south, most likely the one where he started his journey.

What had just transpired was both amazing and awe inspiring. There was never a hint of aggression from the hawk the entire time. The hawk's behavior was notable not only because of his flight behavior, but also because of his nearly continuous vocalizations and the emotional content of his calls.

As he joined up with the R-2 for the first time, it was as if he was saying, "Hello, I see you found some lift, I'm going to join you." His calls while circling were, as said before, obviously joyous. When we left the initial lift and headed across the field, the hawk sounded surprised and somewhat upset, almost as if to say, "Hey, where are you going? What's wrong with the lift we're in now?"

He once again announced his arrival as he followed the R-2 to Area B, then gave out the same happy vocalizations as we circled past each other, and sounded overtly distressed when the R-2 broke out of circling mode and headed for Mile Hill Road.



The astounding verbalization, however, occurred as he passed directly overhead during his trip back to his original perch. He was so obviously telling us how proud he was to have found that elusive third thermal when we had failed. He had circled in it just long enough for us to see that it did indeed exist, and, despite our initial apparent ability to find lift, he was superior at the task.

Flying with the hawk was so thrilling, so perfect, that we didn't spoil our own emotional state by launching again. Rather, we packed everything up and headed for home. Our interaction with the Howe Farm hawk was truly an unforgettable experience.

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Howe Farm, Kitsap County, Washington State <<http://www.kitsapgov.com/parkcatalog/howe.htm>>.

GORDY'S TRAVELS



Gordy Stahl
Louisville, Kentucky
GordySoar@aol.com

How High is 'High'? The ELV Vario/Altimeter

Back in February I attended the Dortmund RC Show in Germany (pretty lucky guy!). I was like a kid in a candy store and one of the things I had my heart set on was a Vario/altimeter.

The really cool one costs about \$500 and actually has a German woman's voice that talks, telling you altitude, and voltage. Too rich for my interest.

There were about 4 Varios with features limited from the above to just a Vario tone. One of them turned out to have all the features mentioned above, except it didn't have a girl 'speaking', but it did have a simple digital display and for under \$300 shipped (actual price depends on the currency exchange rate).

It's called the ELV VAM200, and it consists of a handheld display receiver and an onboard transmitter.

Using it, provided me with exactly what I had hoped it would: a 'confirmation' of lift. I wanted it to help me 'learn' to read air more accurately and it did. Prior to using the Vam, I 'felt' that I knew when I was in lift, 'felt' that I knew when I was climbing out, 'felt' that I knew when I was in sink. However, it didn't take too many flights with the Vam to find out that I was mistaken.

Often it 'seemed' like my sailplane was climbing while it was going away off the launch, but it turns out that it was

often an illusion of perspective.

As a test, I would launch with the Vam in the plane, I would push straight out into the wind and ask other pilots if they thought my plane was climbing as it went away. Always the response was enthusiastically, "Yes!" However, my partner monitoring the Vam RX display would confirm that my plane was actually losing altitude.

Once in lift (according to the Vam's digital altitude display), it was clear to see my sailplane's reactions and action... Making it easy to 'know' when it is in lift without using the Vam. Tail-up, lively reaction, increase airspeed in lift, tail-hanging, sluggish, stalling with any attempt to circle, clearly indicating sink.

You probably say, "Those are all the things we already knew and could see, without the Vam!" But trust me, with the Vam to show you the numbers, not just a tone, seeing those conditions became tremendously clear.

The on-board battery voltage is a very cool thing, especially on the slope or for instance during cross-country or hour plus LSF achievement tasks.

The Max Altitude function really works great for getting your launch set up maximized. You launch and check altitude when you flatten out after the zoom. Then set the Max Altitude Alarm to indicate that you have exceeded that height.

For the money, the Vam is a great tool and worth more than its price.

Would the 'talking' unit be better? YES, because then you don't have to take your eye off the plane to check the display, or rely on someone to report the display readouts. But truthfully, it's worked just great for me and allowed me enough money savings to buy a spare set of wings for my TD ship!

Did using the Vam functions help me win contests? No, it did help me max rounds that I am sure I would have tanked, due to flying through lift I wouldn't have recognized. It is legal to use Varios and the Vam in TD contests,

but my suggestion is to use it to learn to recognize air, and then wean yourself from relying on it. Why? It's more fun to do it on your own!

ELV is a VERY German company; expect weeks or even a couple of months to get your Vam after placing your credit card order. What we expect as 'good service' is completely different from their intentions. Don't confuse that with 'bad service'. If you end up disappointed by a delayed shipping date, the disappointment is because of your 'assumed' expectation. I'm also not saying that they don't ship on time or keep their promises, but they rely on a Far East manufacturing facility, and provide availability information that they receive.

While most Germans speak English, they don't necessarily speak American RC Sailplane; there is a difference. So if your intent is to 'chat them up' about product details, FORGET IT! They don't have the time, expertise or interest to chat up the Vam's features. The website says all there is to know.

The transmitter is on 433.92mhz at a very low power, so no chance of bothering some Ham operator using that frequency. They are not FCC 'Type Accepted' so you won't see a dealer for them here in the USA. That is NOT the same as being 'illegal' for use in the USA. Again, they transmit such a small amount of power they couldn't bother anyone.

From what I can tell, they only come on one frequency (I got two complete units and both were on the same freq), so two of them operating at the same time at the same flying site will be a problem. As I said, I think they are more than worth the money as an 'air reading' tool. The other functions are just frosting on the already pretty good cake.

Soaring in Germany was a ball, but finding the Vam 200 made it even more valuable to my hobby fun.

Hope you enjoy my ELV 200 Vario Altimeter 'trip' as much as I have!

What follows is my 'translation' of the Vam's operating instructions...

• • •

Instructions for the ELV Vam 200 Vario/Altimeter

First off, you will see things flash in the display that have no function; so don't ask. (I already tried.)

The Vam has these features:

Altimeter
Vario
On-board battery voltage Feedback

Max Altitude achieved memory
Variable Max Altitude Limit Alarm
Timer
Annoying unit-on minute beep

So that you don't get confused, the Vam RX is the display that you hold in your hand, the Vam TX is the part that is inside the plane sending information.

I have had a chance to 'play' with the Vam and found it works. It is effective and accurate within one meter of altitude. That means once calibrated on the ground, by raising it one meter, you will get a reading of altitude. The Vario Tone registers via either a constant high tone or a constant low tone. The information is affected by radical sailplane speed changes.

Advertising Information

The new ELV telemetry system The variometer function

The variometer is one of the most important tools for model gliders since it allows you to locate and utilize thermals. It uses different frequencies of tone to inform you whether the model is currently climbing, descending or maintaining a constant altitude.

The current flight altitude

In addition to display of the battery voltage, the current flight altitude can also be read directly from the VAM 200 receiver. The max. flight altitude is saved and can be read out after the flight, e.g. for statistical or optimization purposes. A flight altitude alarm can also be programmed. Every time the model flies above or below this specified altitude, an audible signal sounds in the receiver.

VAM 200 enhanced-feature version with display

The multifunctional VAM 200 receiver with large display shows the receiver battery voltage and is shown in bar graph form. Real-time data transfer in model sports does not have to be expensive! The newly developed telemetry system from ELV supplies information on three key basic functions while the model is in flight or on the ground - namely, monitoring of the receiver battery voltage, altitude measurement and the variometer. Other features include the timer function, storage of the maximum flight altitude, programming of a flight altitude alarm and either visual or audible signaling. The telemetry system is easy to install and comes complete in the usual ELV quality and at an incredibly attractive price.

The battery monitoring function is crucial in model sports. The voltage is monitored directly in the model. Information about the charge state of the VAM 200 receiver are designed for outputting information from the variometer. The three typical flight attitudes 'climbing', 'descending' and 'constant altitude' are signaled audibly at both receivers. If the model climbs at a rate in excess of 1 m/s, this is indicated by a high-frequency tone (1000 Hz). If however the model descends at a rate of more than 1 m/s, a deep-pitched signal sounds (500 Hz). Can also be used for BEC systems by setting the number of cells (4 Dip switches).

VAT 100 transmitter

Flight altitude and variometer function. The altitude is measured by means of an extremely precise, calibrated barometric sensor. During the flight, the air pressure readings are transmitted continuously to the receivers. The battery voltage is measured directly on the battery.

Key features:

- No interference in 27-MHz/35-MHz/40-MHz bands through transmission in 433-MHz band.
- Voltage monitoring also possible with BEC systems (4-8 cells).
- Altitude measurement: 0-500 m
- Variometer sensitivity: 1 m
- Free-field range: up to 500 m
- Extremely compact size of transmitters, only 25 g in weight, mean they can be used in virtually every model.
- ELV telemetry system can be used equally effectively in model aircraft, ship and car construction.

VAM 200 Display RX
with VAT 100 TX
Order No.: 17-405-06



It has a limit of 1000m... But I have yet to get it beyond that height (930m was my max so far), as a sailplane gets really tiny at that height.

The Receiver reception can be affected by your TX and by distance (distance being different than altitude!). You can tell when reception has been temporarily lost in either case. I believe the 'annoying minute beep' is to let you know that the unit is turned on. If the signal is lost then you will get 4 loud beeps.

On the left side of the RX is a tiny hole; it is to access the unit's Vario tone volume control. You can adjust the volume by using a small Phillips screwdriver, then gently turning it.

There are four buttons on the RX's face:

On/Off – Vario: Holding this button turns the unit on and off, and also turns off the Vario tone function (the high/low beep). The Vario tone is turned on or off by 'pressing' the button versus 'holding' it. It is also used to EXIT the Max Altitude Set Function.

Start-Reset- + - Stop: This is the 'timer' function control. It starts and stops the timer and resets it to zero by 'holding' the button. The '+' is used in the Max Altitude Set function for setting the Max Altitude Alarm.

Zero-Max Limit Reset-Time/Alt: This button is used to Zero (calibrate) the Altimeter function to the ground (achieved by 'holding' the button down). Do it each time before you launch IF the RX has been turned off between launches AND while your plane is sitting on the ground. The Max Limit Reset is to clear the setting you have entered for a Max Limit Alarm. The Time/Alt function toggles from Timer display to Altimeter display. (While in the Altimeter display, the timer is still shown in small numbers.)

Max - 'X' - Set: This is the button to turn on the Max Altitude Set feature; once in the Set mode it is also used to reduce the Max Altitude Alarm setting. ALSO if the Max Limit has not been pre-set, then by pressing the Max button it

will show the highest altitude that your plane achieved during its flight. Press and hold the Max/Limit Reset button to clear the Max memory.

On-Board battery Condition Display: Across the top of the display is a bar graph indicating the condition of the sailplane's battery. The Vario TX has four small switches on one end, which are set to the amount of cells used on board; in most cases this will be first switch ON and the other three OFF for four cells.

Quirks and anomalies:

If you are not getting a Vario tone, then you have to depress the On/Off button, or if you want to turn off the tone do the same.

If the Max Limit Set is not engaging, remove the RX's Battery to reset the RX display.

Remember that you will not get an altitude display reaction unless the TX is powered-up on board.

That annoying minute beep or 'ON' reminder can't be turned off.

Yes you could glue a 'wand' into the volume control hole so that you wouldn't need a screwdriver.

It does not matter how or where the TX module is located in the plane, it can be mounted in foam rubber, the 'intake' is on the wire exit end of the RX.

You will notice air pressure changes just by setting the TX on the ground. As thermals pass through you will get the high tone.

Repairs:

ELV Elektronik AG
Reklamation
Maiburger Str. 32-36
26789 Leer, Germany

English Contact:

Annett Wagner
ELV Elektronik AG
phone 011-49 491 6008 441, fax 011-49 491 7019
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36" x 48"	\$35.00	36" x 48"	\$70.00

FUNNY STORY

Slope Hunting, In the Hills of Kentucky

by Paul Cox
Fairdale, Kentucky
SoarCrashnburn@aol.com

Saturday morning and wind conditions were great, 10-15 mph winds from due South. Unfortunately for us though, there aren't too many treeless slopes around here, let alone any we knew about that faced into the South. When I say we, I'm speaking of my road tested, car co-pilot, Ellis. I always try to invite Ellis, he likes to pick on me, so he always makes me feel right at home.

We began our trip with all the necessary equipment, Mountain Dews, Reese-cups, and of course a few planes and chargers. The site we intended to fly at was located to the south and about 35 miles away. More or less only a 15 minute ride!

Our intended site? A Super Slope, or better known as an abandoned landfill, right off of the highway, yet un-visible from the highway. Some of my non-flying informants had told me that it was a huge hill, and people flew there all the time.

High "tech" Internet mapping was our plan of choice to find our intended slope. (Note: Kentucky maps and the Internet shouldn't be associated with each other in anyway.) After using this new fangled mapping system I am now a firm believer in the following:

- (1) The USGS guys that made these maps, were definitely not in Kentucky when these maps were made,
- (2) They were not familiar with any form of map making, but were defiantly having a good time guessing, and/or possibly
- (3) They were just really big Picasso fans.

We headed out at the crack of dawn. (Well, OK, at about 11 o'clock, anyway.) Heading south on I-65 and listening to varying rock stations, battery charger wires were strewn

through-out the car looking like the aftermath of a tornado in a Radio Shack store. We realized after 30 minutes into the trip, that the Reese-cup provisions were eaten, Mountain Dews mostly gone and that the exit we had turned off of wasn't getting us any closer to our new super slope. We took the next exit and returned from whence we came. Ellis' carefully timed verbal abuse balanced itself out between the number of trees that had been destroyed to allow me to print the maps out, and the number of dinosaurs that had died creating the fuel I had already burned up in the car.

We needed information from the locals but there was a problem. Ellis is one of those long-haired types from the 70's and I wasn't sure how the locals would respond. Fearing the big ear-ed kid from "Deliverance" playing a banjo, we took the next road and began to look for locals that could help us find our super slope. Just ahead, off of the road, there was a park of some sort, which honored the men who had beaten up the infamous "sheep thief" of 81'. Parked there in a group of about 10 motorcycles and trikes was some sort of biker club. It was my belief that Ellis' long hair might not matter to much to these bikers. It turns out that I was wrong. These bikers were actually a group of retired state troopers waiting on a detachment of other state troopers before heading further south to "Big Cave Country." I asked the "wisest" looking person in the group if he knew where the old landfill was located. He thought about it for a while, scratched his helmet, and then asked some of his biker buddies. In unison 3 hands pointed in different directions, quickly eliminating 357 degrees of the known compass. The finally returned response told me that this ex-trooper may have been a USGS worker in days gone by.

We followed his advice for about 20 minutes and decided to stop again. This time however it was Ellis' turn to ask. Finding a food mart (small wooden shack with a "drink coke," "firewood by the rik," and "ice by the bag" banner-sign out front), Ellis went on into the store. Knowing I'd never see him again, one foot on the gas and the other on the brake, I began to decide which planes of his I would keep and which ones I'd sell following his disappearance. When, like a flash

he returned to the car, just as I was putting his radio back in its case. "Pull out of here, and go up this road to the left," he told me. I followed his instructions, as he explained to me how pretty the girl in the store was. I didn't bother to ask him if he wondered how pretty her brother thought he was.

After about 3 miles up, on the one lane road, we saw a sign that read "dangerous hill." We glanced at each other as the car climbed the hill. At the peak, we noticed that the road hadn't been worn down as much on top, yet there were skid marks just past the crest on both sides. Hoping Ellis wouldn't mind, I wanted to say, "Why don't we park and watch the "Dukes of Hazard" live?" But the super slope had to be close by, so we headed on.

Rounding a curve we saw a huge scale model of a biplane suspended by one of two ropes apparently depicting a stall. Just beyond that was a huge sloping grassy hill, surrounded by a 9 foot tall fence that was marked with a sign "Electr-a-fide," crested with concentration camp concertina wire. "This must be the place!" I said, as we pulled into the driveway. We read the next sign, hung on a steel anti-tank gate: "High winds, flying field closed, trespassers shot, have a nice day."

Halfway back home Ellis stopped laughing, but all the while I was thinking about another site I had heard about from this delivery driver guy, one I had met in Frankfort...

■



British Model Flying Association F3J News

Uncle Sydney's Gossip Column – 17

by Sydney Lenssen, England
sydney.lenssen@virgin.net

Dateline: November 2002

RANTING AFTER LAPPEEN

Finland recap and F3J's future.

At several UK F3J comps since Finland, regular F3J winners are still slightly unbelieving of the narrow margins at Lappeenranta's 2002 world champs. How does anyone score 9 minutes 56 seconds, far less 14 minutes 56 seconds plus?

Antonis Papadopoulos, who ran Corfu's 2000 WC so successfully, collected all the Lappeenranta scores in the nine preliminary rounds and produced startling statistics. For example, more flyers scored 100 landing points than 95, (37% compared to 27%) and 65% of landings scored 100 or 95. In all 684 flights, only 46 scored zero landings, and they were mostly risk takers not poor landings.

Times were also impressive. In the first nine rounds, 11 flights were recorded as 9 minutes 55 seconds or more. But 346 flights out of 684 were recorded as between 9.50 and 9.54. Personally I cheer when my time is between 9.40 and 9.49. (I only do it when practising alone!) There were only 123 of these so-called low scores. Only 80 flights recorded less than six minutes, which is the sort of time I like to think my HKM Space Pro does in still air.

Feedback since the World Champs gossip report has been divided on widening the gap between winning scores at international level. David Greer (from Zambia) believes it only logical that cream pilots should get jammed together at the top. "These folk are meant to be the best in the world. So if it ain't broke, don't fix it," he says. He would accept dropping the throwaway score in four round fly-offs. But if you do away with drop scores, why allow them in the prelims?

Inge Balswick from Norway and FAI

Soaring Digest was radical. If you're going to have a spearing contest, why not make the winner the first man down with the fastest vertical speed. If you get a high launch, you can dive vertically down at highest speed and get a solid spear landing. But that takes longer than a short launch with less height, forsaking extra speed. His proviso is that you are still allowed only three models. Then he asks us to accept that his idea is a joke!

Rob Ashley-Roche came up with another anti-spear solution: put the landing spots on Tarmac or concrete runways. He and others reckoned that the time has come for the landing tape to be continuously graduated in single points rather than fives.

Carl Strautins from Australia makes the simple undeniable point: the huge difference between 1 and 2 metres from the spot in a tight slot penalises disproportionately. Carl (he who got two 1,000s in the Finnish fly-offs) gets my "best reader of air – 2002" award, for I have now heard him several times spotting for pilots and coaxing them to new lift when their thermals have disappeared.

He summed up Lappeenranta air as follows. Basically the air was too good. The thermals had a range of lifting air 200-300 metres wide or more, and flyers were not forced to find a core; most times they could bumble into 10 minutes. The sink was not great enough to warrant extensive thermal searching. The thermal cycles were quite regular and predictable, and it helped to have the flags near the pits, the flag down at the far end at the airport terminal and the multitude of birds.

Carl spotted several slots in which launch heights from one end of the flight line to the other differed far more due to thermal presence rather than to any launch techniques. And I always thought that my tow-men were past it or slacking!

Another debate is whether to count preliminary round scores in with the fly-off. Carl believes that all scores

should count, and that makes it more testing than counting the best three of four scores to determine the best pilot in the world. More to the point, he reckons that flyers would work harder for their 1000s in each and every round. There are those who land ten seconds early, knowing that they have won the slot, rather than trying to punish rivals by flying out the slot.

Finally, how much sense did it have measuring flight times in Finland to two decimal places of a second? NONE.

As several respondents pointed out, few people can time the end of a slot to within 0.1 seconds never mind 0.01, so the second decimal place is irrelevant and probably liable to distort results occasionally. But that's as nothing compared with the errors inherent in any timekeeper pressing the buttons exactly when the glider leaves the line, especially with a dip and zoom. Timekeeper support or generosity is probably worth at least one full second. If the next door line happens to release with a bang, as it often does, that could be worth staying another second on your own line, knowing your buttons have been pressed as a natural reaction.

On the positive front, several readers urged that the fly-offs at least should have two independent timekeepers, as in F3B speed runs, splitting the difference between times. It does not matter if all the timekeepers happen to have the same reaction times – highly unlikely – but it is important that they are consistent. One or two people advocated some sort of electronic timing device. God forbid – that really will be the end of our supposedly relaxing hobby.

The biggest puzzle facing F3J must be how to get THERMAL skills to count for more in good weather contests when so many flyers are flying the full time within a second or so. Thermal soaring, after all, is what F3J contests started out trying to test.

Last time I mooted having two sight lines at each end of the flight line, with a bonus of 250 points for those flyers who at some stage of the slot crossed both lines. The idea was simply to force flyers to abandon the super lift that would normally do for 10 or even 15 minutes, and encourage searching

R/C Soaring Digest

for another thermal. In good weather, too many pilots catch their lift, often joined by others, then off they fly miles downwind to enormous heights, patiently waiting for the two-minute signal.

Big snag with my first idea was identifying 12 models as they crossed the sightlines.

Somebody has had inspiration, and it is simple. Bob Owston has flown F3J since its earliest days and combines his hobby with earning a living as an engineer and an architect, a sure sign of ability to think laterally.

His brilliant idea is to use the launch line to define a plane across the skies. Each launch spot would have a circular hoop (as used by individuals in F3B and F5B) sighting along the line. Each flyer would be required to cross the launch plane and circle through at least 360 degrees between a three minute hooter and a four minute hooter say, and then the same again between seven and eight minutes.

The spotter for each pilot would be required to raise a flag as his pilot was completing the circle. Independent checking of the turning circles would not be needed during a run-of-the-mill competition, except perhaps on a random basis. An important championships it could be. For each of the two completed circles over the launch line, the pilot would score 150 points say, a value rather more than a spot landing.

Why is 150 points chosen? Sharp guys will quickly recognise that a maximum score would then become 10×60 duration plus 100 landing plus 150×2 circles equals 1,000 points. This would allow a far easier guess at normalised scores when seconds are lost to a rival.

In good weather, the two circle tasks would merely add a little zest to each flight. Typically it could force flyers to find a second and third patch of lift. In scratchy conditions, the pilot would face the choice of staying in good lift and forget the circle bonus points. If the two baseline circle risks are taken, the pilot might fail to find lift and be forced to land before the end of the slot.

Another big bonus to this "new-look F3J" is that the models returning to the

start line would become "spectator-friendly" and visible. Flying an efficient path back to the line, turning through a circle and then setting off again upwind or downwind to regain height would make our competitions more exciting to watch. (My wife reckons: F3J flying is only slightly more interesting than watching paint dry.) Our sport might become more attractive!

Any more ideas, or any better ideas? How about someone putting these ideas into a set of rules for Tomas Bartovksy and Sandy Pimenoff to chew over, and someone to organise a trial comp!

First months of 2002 brought lousy weather in UK, which spoilt practice days and forced abandonment of the first league event. But by the end of October, we'd had seven valid events, with the best four counting towards the three UK team places for next year. Four or five contests were held in enjoyable weather rather than the usual dodging between showers and gusts of high wind.

One of the nicest Finns to meet in Lappeenranta was Tommy Westlin, assistant contest director in the trannie impound, who started the slots and the timing device. He ordered a Sharon Pro 3.7 after the contest, having been impressed by Tobias Lammlein and several others with this model during the champs. He wrote asking for my settings.

With job pressure, he expects to have his Sharon ready for testing after Christmas. Initial flights will be on a nearby frozen lake with a blanket of snow on top. And we complain about British weather.

Feedback from all over the globe shows that most countries do not enjoy more than one annual F3J competition and that is how they select national teams. In several countries F3J flyers are so few that they can't cope with two-man tows if they want six or more in any slot. So they use winches. Perhaps we in the UK don't have it so bad after all!

Let me tell what excites me most in model soaring's future at this time. I have become hooked by hlg, particularly since the advent of SAL – side

arm launching – which thank goodness is now settling down to the name of "discus" launching.

Two years ago I wrote about it, courtesy of US and German articles. This year at Dortmund I bought my first model, the SAGA produced by Vladimir Gavrilko in the Ukraine. It flies like a French mistress or a Citroen car – as touchy as hell to keep going, but when it does, then out of this world.

At the end of a late summer holiday in France, Austria and Germany, I traveled past Kirchheim am Teck, famous as home town of Graupner. A few people know that it is also close to where Claus Schnarrenberger lives, designer and producer of Murphy. This hlg with moulded two-servo wing, flown by his mate Ralph Mittelbach, has won the F3K Eurotour in 2000 and 2001. Claus has also won many F3K contests.

I collected my new model and we enjoyed a couple of hours flying his Murphy and my Saga at the back of his house. He had 12 flights. Apart from the first, which he said was for trimming, he caught thermals small and large each time, bringing Murphy down at two or three minutes as declared before each launch. My Saga hit lift most times too, but I got away only three times out of 12. Murphy is magic! (How come Herr Schnarrenberger calls his model Murphy? He tells that everything that could go wrong during its development and kitting did, so only one name was possible.)

F3K, the hlg class, is sure to reach full FAI recognition soon. In fact Lausanne is pressing Eurotour and hlg supporters to make proposals for regional and world championships, fix the rules and get on with it. In contrast to the F3J supporters in the early 1990s, the F3K advocates want to proceed slowly. What they favour, says Alex Wunschheim who is current manager of F3K Eurotour, is to run a two-day trial event in conjunction with an F3J world champs.

I'd cheer that super idea, for that means Calgary! Having the whole CIAM/FAI circus already assembled in Canada with top flyers from all over the world, you would certainly get a

fiercely contested hand launch event. F3J plus F3K surely adds up to a sum greater than the total of its parts.

UK's senior team for the 2003 European Championships – July 20-27, in Deva, Romania - will be Tony Vale, Adrian Lee and Dave East. They placed first, second and third in the UK F3J league to win team places, subject to BMFA ratification. Congratulations.

Tony and Dave will be flying for their country for the first time. All three played hard for the UK team in Finland, gaining valuable insights into what they could face in Romania – sore heads, irregular meals and yes, soaring too. So top level competition and the strain of a five-day event will not be foreboding.

Tony Vale is in the Fairlop club, same as me. He, Pete Weston, Gill Doonan, Nuno Canteiro and Richard Yates set out plans as early as 2001 to put every effort into getting Tony into the team. Everyone in the team gave first priority to their man. Flying Graphites, their launches were UK's highest on each and every event. Lines were always in prime condition, checked regularly and replaced if suspect. Time was always made for more practice and retrimming, and they have height and data collection devices to measure rather than guesstimate.

All their efforts have come good. Tony scored 400 points to win the league, a perfect score. His lowest dropped score was 96.52. So he had a good year thanks to a good team: here's hoping next year is even better.

Adrian and his wife Fiona are old international hands and have spent time in a tent ten times at Hollandglide. He has been in the UK team thrice before, Deva in 1999, Corfu 2000, and in the fly-offs at Holic 2001.

He will be building yet another High Five this winter in his garage, it will be red on top and blue underneath, and he will consistently refuse to fly any ready-built moulded model. He does not believe it, but if only he would try other models, then he would surely become an international winner, 'cos he's by far the most consistent exploiter of thermals around in the UK.

Dave East is this year's surprise, winning his place at the last moment by the narrowest of margins (0.7 points). Everyone in the CATS team has now gained UK team places. He spotted for Mike Raybone in WC 2002 and for me in the Wild Man's trophy, for which I awarded him "top spotter 2002". He talks with a warm economical and beguiling style, and more often than just by fluke, he guides you into lift. He flies for fun and is often funny, and long may that continue!

Having two dedicated teams in support helps the success of all three team members. It also highlights that if all flyers in one team are potential winners, and they don't fly against each other in the league events, then top pilots are not tested as thoroughly as would be best. At present, that's an in-built weakness in our league team arrangements.

What are UK's chances? They will depend in part on how seriously other teams are taking 2003, for some pilots might be tempted to concentrate on winning places for Canada 2004. Watch this space for team news, gossip and betting.

What's not decided yet is who will be running the UK F3J league next year, how many and where the rounds will be flown. BMFA's silent flight technical committee had its October meeting but didn't resolve matters. Committee chairman Chris Bishop proposed that he should run it, and wants to include all the big BARCS events plus the Scottish Nationals. Rumour has it that further bids might emerge.

SFTC did question whether the UK team should be appointed on the simple basis of topping the league. There are those who reckon that the team ought to be selected on who is most likely to win in the following

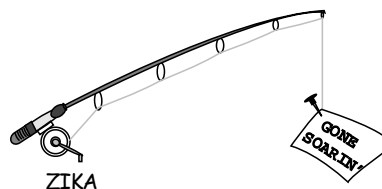
year. That surely means having selectors who presume to know best, as in cricket and football. I have a suspicion that simple placings have a lot of merit, but what are your views?

So goodbye to Kevin Beale and Nick Evans after just one year managing the UK F3J league. Both deserve a big vote of thanks, along with the usual team of helpers who give a hand each time on the day – too few by the way. Kevin bore the brunt and did well to place sixth. Nick coped well despite trying to move house, and paid by slipping places in the league.

The powers that be should feel chastened by events. Kevin and Nick were brought in to satisfy the hobby's "politicians" and to bring BARCS and F3JUK closer. Neither Kevin nor Nick promised more than one year cannot be blamed. But management of the league needs continuity, at least a phased hand-over, and two years if not longer because experience does count. It bugs me that an established proven willing team was sacked a year ago to make way for the joint BARCS/F3JUK effort.

This gossip column has been circulating recently around the worldwideweb by courtesy of *FAI Soaring Digest* and in the US thanks to Jerry & Judy Slates and *R/C Soaring Digest*. The column started in *BMFA F3J News*, the newsletter of the UK's F3J league, which is not, I should make clear, an official communication of the British Model Flying Association. Any errors, comments and views are solely the responsibility of the writer, who is simply trying to add to the enjoyment of our hobby.

End of gossip. ■



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Reference Material

Summary of Low-Speed Airfoil Data - Volume 3 is really two volumes in one book. Michael Selig and his students couldn't complete the book on series 3 before series 4 was well along, so decided to combine the two series in a single volume of 444 pages. This issue contains much that is new and interesting. The wind tunnel has been improved significantly and pitching moment measurement was added to its capability. 37 airfoils were tested. Many had multiple tests with flaps or turbulation of various configurations. All now have the tested pitching moment data included. Vol 3 is available for \$35. Shipping in the USA add \$6 for the postage and packaging costs. The international postal surcharge is \$8 for surface mail to anywhere, air mail to Europe \$20, Asia/Africa \$25, and the Pacific Rim \$27. Volumes 1 (1995) and 2 (1996) are also available, as are computer disks containing the tabulated data from each test series. For more information contact: SoarTech, Herk Stokely, 1504 N. Horseshoe Circle, Virginia Beach, VA 23451 U.S.A., phone (757) 428-8064, e-mail <herkstok@aol.com>.

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Internet soaring mailing listserve linking hundreds of soaring pilots worldwide. Send msg. containing the word "subscribe" to soaring-request@airage.com. The "digestified" version that combines all msgs. each day into one msg. is recommended for dial-up users on the Internet, AOL, CIS, etc. Subscribe using soaring-digest-request@airage.com. Post msgs. to soaring@airage.com. For more info., contact Michael Lachowski at mikel@airage.com.

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A Division of the Soaring Society of America



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1709 Baron Court
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AMA Sanctioned soaring competitions provide the basis for ESL contests. Further guidelines are continuously developed and applied in a drive to achieve the highest quality competitions possible.

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ESL Web Site: <http://www.e-s-l.org>

ESL President (99-00): Tom Kiesling (814) 255-7418 or kiesling@ctc.com

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#3									
Team Name:				Email Address:					
					SWC '03 Shirts: (write quantity in appropriate box)				
RES CLASS:		YES		NO		(circle one)		Gray Cup	
		YES		NO		YES		NO	
2 Meter Class:		YES		NO		(circle one)		Junior Cup	
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