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.

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SOARING
IS FUN!

ZIKA

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The Soaring Site

Locating a source for a 2M glider named Swing Plus

This last month, we received the following e-mail from a "Desperate Modeler":

"I have been trying to locate a source for an ARF 2M glider for 600 motors called Swing Plus. The model is made by a firm named Kosta Midelcentrum of Germany. It is, or has been, imported to the US by Hi Country Hobbies of Gunnison, CO. All attempts to contact Hi Country Hobbies have failed, although their web page advertising the model is still active on the Internet.

"The Hi Country web page text indicates that the Swing Plus was reviewed in your publication by Joe En-Huei.

"Do you have any knowledge of another source for this model? If so, please advise at your early convenience."

A desperate modeler,

Clarence H. Dollmeyer
2313 E. 104 th Ave, Unit #1517
Denver, CO 80233
kb5rr@indra.com

Yes, Clarence, Joe did the review in the March 2001 issue of RCSD. You might check with Hobby Club at www.hobbyclub.com to see if they carry Swing Plus. Unfortunately, I don't have Joe's e-mail address as it likely got lost in the move from Texas to California.

Readers, Clarence has asked that if any of you can help him out to please drop him a line or an e-mail. Be sure to write 'Swing Plus' on the subject line.

Happy Flying!
Judy Slates

SLOPE FUN

Dave Hauch's Brian McLean Vindicator makes a slow pass for the camera at Mt. Baldy on the Southern shore of Lake Michigan.

Photo by Greg Smith.

Gordy Stahl
Louisville, Kentucky
GordySoar@aol.com

"Power To Spare?"
The BC6 On Board
Battery Monitor
By YNT Design

I travel a lot and I fly a lot. When you fly as much as me you end up crashing planes due to dead batteries. It has been a fact. Some times I carry my stuff in my pickup truck, but often I am traveling with the bare necessities: sailplane, TX, charger, wing tape, talking timer. And often my charging is limited to a quick 'top-off' with my fast charger at the flying site; and as we know, ni-cads can be finicky about that kind of charging regime.

One day, while reading the *RC Soaring Exchange* postings, I came across a post about the BC6 On Board Battery Monitor. It used a group of LED lights to give you an 'at a glance' heads up on battery charge condition. Sure I know it's possible to hook up a meter in between flights, but that's another thing to do and to carry along in my baggage. Two things I hadn't been very consistent at doing.

The BC6 turned out to be the answer. It does a couple of neat things besides monitor voltage: it is a lost model alarm (very loud even inside the fuselage), it toots if your plane is left on when your TX is off; and it has another neat feature: a glitch counter. While the glitch counter is a neat thing, mostly I have been impressed with its battery monitoring function.

The LED lights are very bright, to the point where I can see them through the canopy of my sailplane (not painted glass canopy), and I can see them in

bright sunlight. If the voltage gets too low, then the alarm will start screaming. Really a nice feature as I have heard it on long slope flights while in the air and when I landed my plane during TD contests. That meant where I would usually wait to check my batteries with a meter before I would go up to launch, the alarm reminds me that I should get a quick charge right away. THE REALLY EXCITING thing about how the BC6 does its monitoring is that it is reading your Ni-Cads (or Nihms) with the load your plane is seeing. That means instead of some random, general load like a meter - it reads the actual voltage of your batteries while working in your system! By the way, it will work with 4 or 5 cell packs!

When I received the BC6, my first impression was that it was pretty huge! But once in my plane, I found it to be perfectly sized for easy mounting in the nose of my sailplane. Hook up is simple. Put it in the battery slot of the RX (works with PCM or PPM RX's) to just monitor voltage and to use the low battery warning beep. Or, hook it into an open channel slot to take advantage of the lost model alarm, and glitch tester (as well as the voltage monitor features).

The voltage range monitored can be set at one of two ranges depending on how you prefer. For instance, you can set the lowest voltage for a 4 cell pack to be 4.15 volts or 4.6 volts (same option for 5 cell packs 5.1v or 5.8v). It sells for $44.95 and can be purchased directly from the web site or by calling Sheldon at YNT Designs.

Here's some excerpts from YNT's web page information about the details on the BC6.

The BC6 Flight Monitor is more than just a simple battery checker... It is a real-time monitor!

The BC6 is a precision device, micro-programmed to enable real-time monitoring of your R/C system battery and Rx. Implemented on a custom PCB, utilizing high-tolerance components to ensure accuracy and reliability, the BC6 Flight Monitor will provide a true indication of not only your battery's status but also any signal interference that may be affecting

your R/C Rx. The BC6 monitors your battery 250 times per second, during actual real-time usage, and records & displays the lowest voltage that occurred during that period of use.

This reading is a much more meaningful indicator of battery status than the readings given by other devices or readings taken with an ESV. Why?... Because true conditions, e.g. true servo loads G-force, temperature, vibration, etc., are all in evidence during the actual data capture and recording.

In addition to Real-Time Monitoring of your battery, the BC6 also incorporates the following features: Glitch Counter, Lost Model Locator, and other safety features... readings all in a single state-of-the-art package.

Operation of the BC6:

When the BC6 is switched on, the jumper position will be read and the LED's will cycle for approximately 5 seconds. NOTE: If you change the jumper position you must cycle the BC6 by powering the Rx off, then on again.

(Gordy note: The "jumper" is a two hole connector which slides onto two of three pins; depending on which two of the three you chose, determines which kind of information you want and used for PCM or PPM glitch counting.)

After a short pause the battery voltage will be displayed. If the alarm sounds for more than 2 seconds this is an indication that no transmission or an invalid transmission is being received by the BC6 through your Rx. After the BC6 has received 2 seconds of valid transmissions the piezo alarm will automatically switch off.

As the battery voltage falls, the LED's will move down from the top Green LED to the bottom Red LED. You must remember that the LOWEST recorded voltage is displayed. If a heavy load is applied to a servo this may consume a large amount of current which will in turn cause a low voltage momentarily. This is the voltage that will be displayed and is, of course, the one that is most important! To display the "actual" or "nominal" pack voltage simply cycle the Rx off then on again. The voltage displayed is the nominal voltage which includes the total load placed on your

battery by your flight system "at rest"! Different components have different power requirements and the power requirements, under actual in-flight conditions, will be much higher!

If any glitches occur and the glitch counter feature is enabled, they will be displayed by the LED flashing, a short pause, and repeating again. FLASH, FLASH, PAUSE, FLASH, FLASH, PAUSE would indicate 2 glitches. Both the frame rate and the pulse width are monitored, the frame rate being 50Hz and the pulse width between 1 and 2ms. Any signal outside of this specification will be considered a glitch. NOTE: It is possible for a glitch to occur but still be considered a valid signal and will therefore not be counted. Remember, the glitch counter feature is disabled for the first 60 seconds to allow time for the engine to be started using glow drivers, electric starters, etc... all of which may cause glitches to be counted.

After each flight you should check the BC6 before shutting off your Tx and Rx. The BC6 will display the LOWEST voltage recorded during your flight and the number of glitches encountered during that flight. If any of the Green LEDs are on it is still safe to fly. If a Yellow LED is on you should consider recharging. If the Red LED is on... DO NOT FLY!

Glitches, what to do about them...

Glitches are difficult to diagnose and correct but with a little patience and a systematic approach you can track them down, isolate, and then correct them by using the BC6 as a diagnostic tool to indicate whether a change has reduced or increased the number of glitches counted.

Specifications

Dimensions: 50mm x 30mm

Weight: 12g

Max. Voltage: +7.5v
Min. Voltage: +2.5v
Current Consumption: < 20ma

Temperature Range: -58F to +212F

Voltage Range Displayed:
4-Cell 5.1v+ to 4.15v+
5-Cell 5.9v+ to 4.95v+

Voltage Switching Points:
4-Cell 5.10+v, 4.95v, 4.75v, 4.60v,
4.45v, 4.30v, 4.20v, 4.15v

5-Cell 6.40+v, 6.25v, 6.00v, 5.80v,
5.60v, 5.35v, 5.20v, 5.10v

The BC6 Flight Monitor has been used by competition RC Heli pilots for years, and in power planes. It has a lot of features that make sense for use in multi-servo sailplanes which fly long cycles (hopefully!) and have high current demands on their batteries.

Hope you enjoyed this trip's 'current' events! See you on your field, soon!

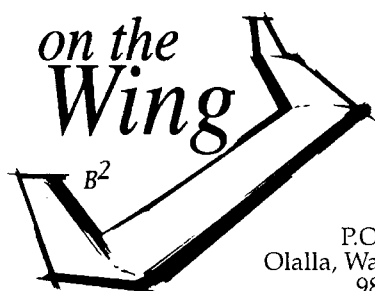You can find out even more detail about the BC6 from its designer, Sheldon, at:

YNT Design
web: www.yntdesign.commail:
smarkest@yntdesign.com
(716) 377-4894

■

on the Wing B²

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

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

Noel Malone's Arrow 60

Noel Malone's Arrow 60 is designed for slope flying on the sand dunes of Rainbow Beach, a couple hours drive north of Brisbane Australia. This well-designed swept wing tailless model receives a lot of positive comments from other Queensland area slope flyers.

Noel has been working on the Arrow 60 project for several years. The model has a relatively simple planform with an aspect ratio of about nine. It has a 60 inch span and 23 degrees sweep, seven inch constant chord, and winglets. Construction consists of a foam core wing with a carbon spar system and vacuum bagged carbon fiber skins. The fuselage is of molded fiberglass and has provision for ballast on the center of gravity. Controls are elevons only and the servos are mounted in the wing.

Arrow 60 MK 1

The Mark 1 version of the Arrow 60 served as the test bed for the planform and was constructed several years ago.

The Arrow 60 Mark 1 uses the MH 45 section from root to tip. A carbon fiber spar makes the wing very stiff. The overall weight for this initial version is less than 20 ounces, 6.8 oz/ft². Even at this low weight and resulting wing loading, the wing is fairly quick and nimble. A plug-in tail cone allows access for addition of ballast.

There were some initial stability problems with this wing, but all difficulties were eventually traced to the receiver. The design proved aerodynamically sound and a joy to fly, so it was on to Mark 2.

Arrow 60 MK 2

The Mark 2 version was designed to be a bit faster than the Mark 1. It uses the MH 64 section and 2.2 degrees of twist, computed with the Panknin formula. A more robust structure increased the weight to 24 ounces, so the wing loading is noticeably higher — 8.2 oz/ft².

Surprisingly, Noel says that ballast is required if there is reasonable lift. Still, the basic airframe could be made an ounce or so lighter with more care during construction. JR 331 servos are installed in the wing with direct connections to the elevons. The servos sit against the upper carbon skin and lie flush with the lower surface.

The Mark 2 Arrow 60 is a pleasant aircraft to fly. It's quite quick and, due to the large elevons, is also fairly lively, and always attracts a lot of attention on the slope.

The Mark 2 version has been flown at Laidley, about an hour west of Brisbane, with the Summerholm Sport Slope Soarers club, as well as at Rainbow Beach. Rainbow Beach is a huge area with slopes of blown sand.

Noel added as much ballast as he could, raising the weight to 37 ounces and the wing loading to 13.25 oz/ft². The Arrow 60 remained very nice to fly at this weight, and was quicker than a couple of 60" conventional planes that were at Rainbow Beach.

Everyone who has flown the Arrow 60 seems to be very impressed with it, especially those who have previously not been flying wing fans.

Two meter version

A two meter version of the Arrow, aspect ratio 10, is in the planning stages. This version will be designed for slope and flat land thermal flying and will have a three piece wing. Contrary to previous Arrow versions which utilized twist from root to tip, the two meter version will incorporate twist only in the outer 60 percent of the wing.

We're looking forward to being able to follow Noel's future progress on his Arrow project.

⎯⎯⎯⎯⎯⎯⎯⎯

We're always eager to hear about the tailless designs of *RCSD* readers. If you have a project you'd like to share or a question you'd like to see answered, contact us at P.O. Box 975, Olalla WA

Rainbow Beach

98359-0975, or by e-mail at
<bsquared@appleisp.net>.

References

Coordinates for the MH 45 and MH 64 are available on Martin Hepperle's web site <http://members.tripod.de/MartinHepperle/Airfoils/>.

The Panknin formula and associated computer applications are available on the B²Streamlines web site at <http://www.b2streamlines.com/Panknin.html>.

∎

Taboo

By Bill Kuhl
bkuhl@luminet.net

With names like Secret and Taboo, one might think Oleg Golovidov had much he did not want to share about his sailplane designs. Yet, in my e-mails to Oleg, he was very open to questions I had regarding his planes.

What is a Taboo?

Taboo is Oleg Golovidov's discus launch sailplane, a 2-channel polyhedral. When discus launch plane kits first began to appear, planes were primarily 2-channel poly planes because building a wing with adequate strength and without aileron flutter was difficult. As the popularity of discus launch increased, successful aileron planes were available. Yet, Taboo remains a rudder and elevator only. This appears not to be a handicap in competition as Oleg finished only 8 points behind the top spot at the IHLGF, the most competitive hand launch contest. Personally I like the simplicity of a poly plane and, for most contest pilots, they will do better with a poly plane. I asked Oleg if landing control was the primary reason for using a full-house configuration. This is his reply:

"Landing control is probably the most easily realizable advantage. Some extra speed range can be obtained by using TE camber, but it is much more difficult to realize because it requires high pilot proficiency, lots of attention in flight, and very clean execution of the wing controls."

The Taboo Kit

The first thing I noticed upon receiving my Taboo kit, was how well it was packaged with a generous amount of bubble wrap around major parts. The wings were surrounded with the foam beds. Next is the quality of the components in the kit. One of the first things that anyone mentions about Oleg's kits is the quality of the workmanship. The fiberglass work, the plywood or balsa parts, and the glue joints are perfect.

Construction

Wing: blue foam with fiberglass skin on a bias, carbon spars. Fuselage: molded fiberglass and carbon. Tails: contest balsa vacuum bagged with light fiberglass on a bias.

Building Taboo

All the major construction of Taboo is complete, leaving only putting wing panels together, installing the wing hold down mechanism, attaching the stab, and installing the radio equipment. A feature that was appealing to me was an extra Nyrod inner tube that is installed through the boom for the antenna. Simply push the smallest music wire you can find through the tube as far as possible and solder to a short length of antenna wire coming out of the receiver. For radio equipment I used a JR 610 receiver with HS 55 servos, and a 4-cell 280 mah Nimh pack.

Instructions included with Taboo are completely adequate, but additional pictures of construction can be found on the Taboo web site:
http://olgol.com/taboo.html

Creating Strong Wing Joints

No doubt the most work in building Taboo is with the wing. Because of the stress on the panel joints in a discus launch, follow the instructions care-fully. The wing panels are beveled to the correct angles. Several techniques are used to strengthen the joints between panels. Punching holes in the foam to allow the epoxy to penetrate deeper into the foam. Cutting out a small layer of foam where the spar caps come together so that the epoxy will span between the top and bottom spar caps. And then tiny holes are poked through the skin and spar along the joint line. Finally 3-ounce fiberglass strips are glued over the joints. The instructions called for foam safe CA, but I used finishing resin because that is what I am familiar with.

Flying Taboo

Taboo was my first discus launch plane, although I had done discus launch with an Epsilon hand launch. I began launching without the peg, planning to install the launching peg later to see the difference between methods. Without a gyro, launches were always fairly straight and the altitude was very good.

By far the best flying hand launch plane I have flown was Oleg's Secret. The Secret had a glide that seemed to float forever. When I began flying Taboo, the glide did not seem quite as good, because the glide is faster. I asked Oleg about this and his response was:

"Taboo has about the same rate of descent than Secret, but is capable of flying much faster and will travel 2-3 times greater distances for the same height loss. Mark Drela's airfoils make a big difference. Because you cannot slow down Taboo to a crawl like you can Secret, you get the impression that it goes down very fast, but in fact it goes mostly forward and only a little down."

So far my thermal flying has been under what normally would be poor conditions: winter flying in Minnesota over cold, wet ground. Yet Taboo easily climbs in lift time after time. On a couple of occasions it was close to sunset over snow-covered ground, yet Taboo was easily climbing in lift.

Ordering the Taboo

When ordering a Taboo it is best to check the web page for prices and options. For an additional charge,

Close-up of Taboo Tail Surfaces.

there is an option for a detachable stab and also materials for building a ballast compartment. Demand for Taboo has been so great lately, that a price increase was necessary. ■

R/C SOARING DIGEST
Radio controlled

THE JOURNAL FOR R/C SOARING ENTHUSIASTS

A MONTHLY LOOK INTO THE WORLD OF SAILPLANE ENTHUSIASTS EVERYWHERE

R/C Soaring Digest (RCSD) is a reader-written monthly publication for the R/C sailplane enthusiast. Published since 1984, *RCSD* is dedicated to the sharing of technical and educational information related to R/C soaring.

RCSD encourages new ideas, thereby creating a forum where modelers can exchange concepts and share findings, from theory to practical application. Article topics include design and construction of RC sailplanes, kit reviews, airfoil data, sources of hard to find items, and discussions of various flying techniques, to name just a few. Photos and illustrations are always in abundance.

There are *RCSD* subscribers worldwide.

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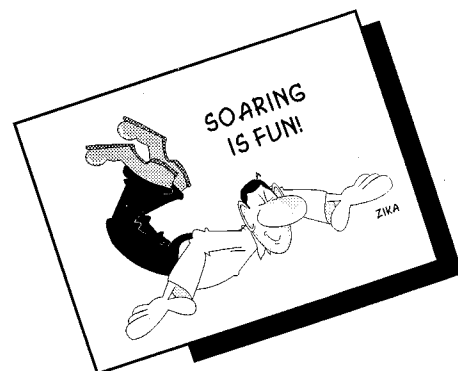
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Michigan's own Dave Hauch shows off the covering jobs on his JWs. Did they still look that nice after 4 days of DSing Dave? Photo: Greg Smith.
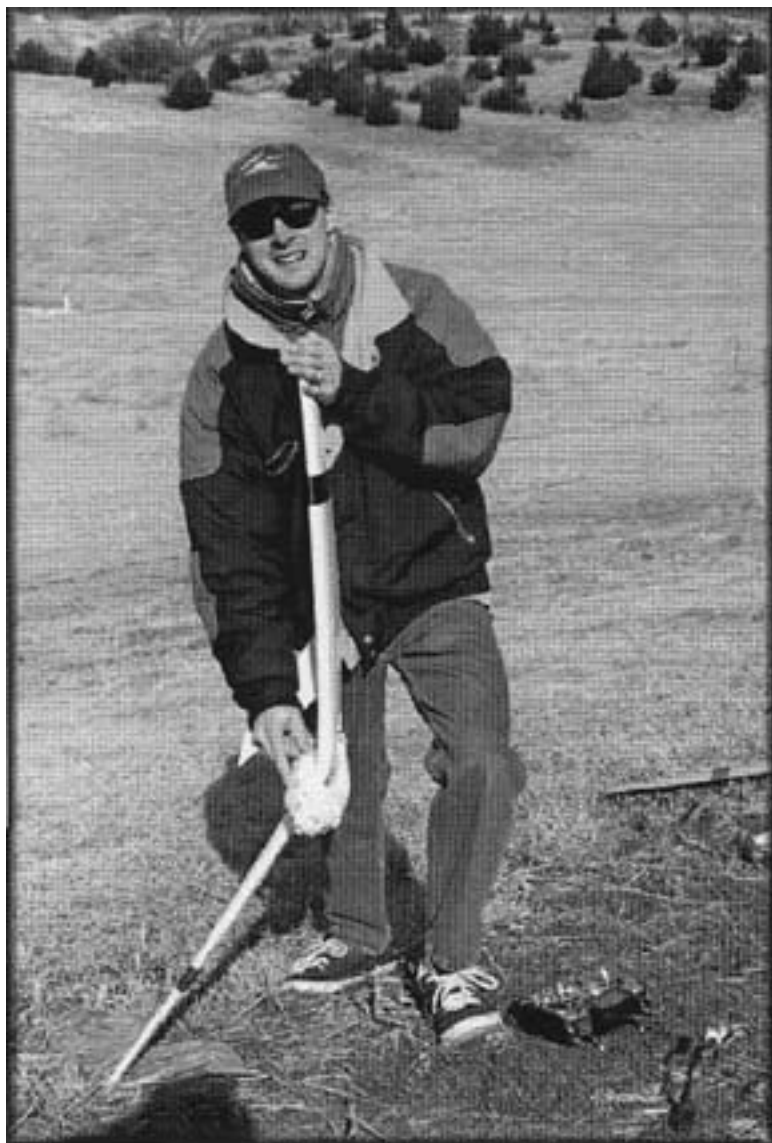
Mike Bailey demonstrates what his wing looked like after a spar failure while DSing the dam at Wilson Lake, Kansas. Photo: Tim Hoff.

"The Sloper's Resource"

By Greg Smith of slopeflyer.com
greg@slopeflyer.com
http://www.slopeflyer.com

Kansas Slope Fun & F3F

Kansas in March is a crap-shoot as far as weather is concerned and so it was when Tim Hoff and I headed out on a soaring adventure to meet up with Mike Bailey and Pat McCleave from Wichita, Dave Hauch from Michigan, Rob Hurd from South Dakota and several other pilots from the Midwest for some DSing, the first F3F event in the US outside California and 4 days of general slope fun March 7th to 10th.

All week before our trip the weather from several "reliable sources" had predicted strong South winds and 60-degree temperatures. Guess what? Didn't happen that way. We were greeted with foggy, misty, rainy days on Thursday and most of Friday. No biggie though, we were at Wilson Lake, site of the May Midwest Slope Challenge, and ready to slope!

When we arrived on Thursday about noon we met up with Rob, Dave and Vicky at the main slope that faces generally South on the shores of Wilson Lake. It is about 180 feet above the lake and can produce really good lift. On this day what it produced mostly was a thick fog and a light southerly breeze. We flew some light ships, talked planes, watched Rob do a DLG impression with his JW and generally had fun in spite of the weather.

In addition to main slope shenanigans we went down to the dam and got in some light air DSing with a couple of JWs and a Steve Drake Gulp. It is cool how in air just barely good enough to fly the frontside you can have a blast on the backside. I'd guess that the dam site we were flying gives a 4x or 5x multiplier to the prevailing wind if the DS circuit is flown cleanly. Only thing is the clean circuit is between 5 feet and 30 or 40 feet above the jagged rocks of the dam face! Foam is where it is at, at least for a relative newbie like me and sites like this. (I'm going to plant two words in your mind about DSing, South Dakota! More on that in a future column.)

On Friday we spent most of the day DSing at the dam and generally trying to pound our planes into submission. Loren and his son showed up, as did Todd and Joe from Topeka. In the afternoon Tim and I took a trip around the lake to Minooka Park where we would probably be flying on Saturday due to the predicted Northwest wind.

While steak dinner Friday night at the Bunker Hill Café was superb, the 45-
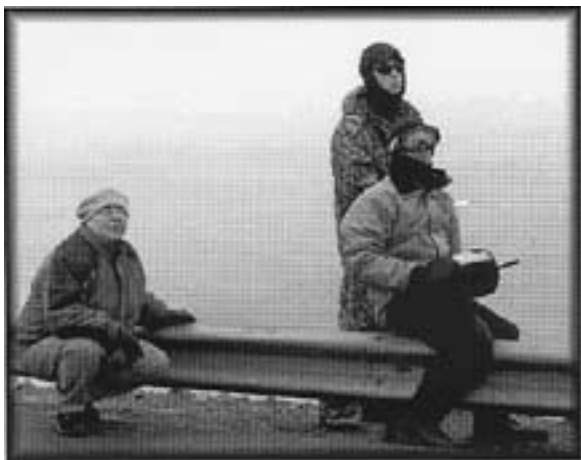
Rob, Dave doing some DSing while Vicky looks on. Place: The dam at Wilson Lake, Kansas. Photo: Tim Hoff.

(Above) Rob Hurd tries a new flying style while waiting for the fog to lift at Wilson Lake, Kansas. Photo: Tim Hoff.

Greg's SH-50 did a lawn dart imitation after the wing broke in 40 plus winds while DSing the dam at Wilson Lake, Kansas. Greg was later heard to mutter, "Good thing we use spars in all current SH-50 wings!" Photo: Tim Hoff.

mile trip back to Lincoln and our home for the next few days, The Post Rock Motel, was not. The weather turned a bit nasty and the freezing rain made for treacherous driving conditions. One of our group spun out on the freeway and had to plow through the median to get back on the freeway. He was luckier than many, as we saw about a dozen cars in 20 miles in the ditch or median. Spring in the Midwest! You gotta love it.

Saturday started at the K-19 café in Lucas. We were there no less that 5 times over the weekend; good food, nice people and reasonable prices, plus they let you bring in planes to show around and the parking lot is big enough to demo the Cyberdyne DLG. The weather brought clear skies and about 35 degrees in the AM but it got to 50 or 55 by noon, all around not a bad day. The wind was Northwest so we flew at Minooka Park on the shore of Wilson Lake.

In the morning we all got out several planes that needed test flights. I had a Wizard Compact and an Acacia II that both only had a couple of previous flights on them. Dave had a Tragi looking for its maiden voyage and a Hammerhead with only a few flights on it. Rob had a JW XL and a Hammerhead. Looks like the Midwest boys have been busy over the winter. Meanwhile, Loren and his son did some flying as did Roger Brining from Great Bend.

Around noon Mike Bailey set up the poles and signal system for the F3F course and several of us got in some practice runs. Running a fast F3F time is not as easy as it looks on the videos! Mike, Tim, Dave, Rob and I all took a couple of practice runs hoping to get a bit of an advantage for tomorrow's race. None of us had ever done F3F before and any practice was welcome.

For me the highlight of Saturday was limboing under the string that supported the F3F sighting poles. They were about 52 inches wide and my plane has a 50 inch span. It seemed doable and it was! Several of us spent a good

amount of time cruising through the poles, most of the time whacking one or the other, but every once in awhile making a clean pass.

F3F practice

Sunday the wind was really kickin'! Dave's wind meter said 25-39. I say it was at least 40! The wind direction was mostly right up the face of the main slope early with it tending to go right as the morning progressed. Only about 6 of us had planes that could really handle the big wind and several of the foamy fliers basically got blown out. Too bad, it was great fun blasting around the F3F course with 3 pounds in the Wizard! I wish everyone could have tried it! Well one guy did get to. Pat McCleave had his NYX and was having some very erratic flights with it. He found the cause was a loose pushrod/bellcrank connection. (This is now a known problem on early versions of this plane and a fix is available. Check yours if you have one!) Anyway, since Pat is a decent stick and he had a Wizard before, I thought I'd let him fly mine. Of course, he put up his brand new Tragi 702 as collateral, just in case!

The actual race was good fun but we only got in a couple of rounds with yours truly taking top honors, Dave Hauch came in second and Pat just

edged out Rob for third. I am looking forward to more F3F races in the Midwest. It is a great format and easier on spendy planes than unlimited man-on-man.

Roger Brining, Tim Hoff and I all got video and still picture coverage of the event. I have been hacking together a video of the event and while it won't give Lift Ticket or Endless Lift a run for the money, I think it will give those who were there a bunch of good memories of 4 days of sloping fun in March in Kansas! Bring on May!

Wow, four days of flying and only 1200 words to describe it! I left out a bunch like the cool micro-brew pub in Lincoln, KS called Biggie Biggs. The proprietor is a soaring fan and had spent quite a bit of time with a Gentle Lady and who recently saw some of the Wichita boys DSing the dam and all the other really nice folks in that part of the world. If someone says, "Hey, let's go to Kansas and slope!" I say, "Go For It!"

Don't know what next month will bring yet, but I can assure you it will be about sloping.

■

ZIKA

Spring Fling
June 22nd & 23rd 2002
2 DAYS OF THERMAL DURATION~~AT LEAST 3 CHANCES FOR A WIN!

Location: SVSS flying site in Davis.............See www.SVSS.org for map & more info.

Schedule: Pilot check in Friday afternoon.
Check in Saturday-Sunday 7:00 A.M. Pilots meeting both days at 8:00 A.M.

Tasks: Saturday: 5 Rounds-4, 6, 8, 10 & 12 minutes in any order.
Sunday: 4 Rounds-3, 5, 7 & 9 minutes in any order.
All times will be normalized to 1000.
Landings will be a painted Bulls-eye, 10 ft. dia. 50, 75 & 100 points.

Awards: 1 award will be given for 1st place in each category (Open, RES & Grey Cup) on Saturday & Sunday.
Overall (Saturday & Sunday combined) awards will be given 1st-5th place for Open, 1st-3rd for RES & 1st-3rd for Grey Cup (60 & over).

Food: Available all day Sat. & Sun. provided by Sacramento Police Officers Association

Raffle: Tickets will be sold at the contest and the raffle will be held on Sunday.

CD: Jim Thompson   530 662-7268

Motels: Motel 6   530 753-3777 $39.99 1 Bed & $45.99 2 Beds
Howard Johnson   530 792-0800 $79.00 1 Bed & $89.00 2 Beds
Holiday Inn Express   530 758-2600 $99.00
Camping is permitted at the flying site. There are no hook ups & fires are not allowed.
ALL ENTRIES SHOULD BE IN BY JUNE 15TH~~Confirmation by e-mail

- -

Please make your check payable to "SVSS" and mail entry to:
Cheryl Thompson   530 662-7268
23464 County Road 102   gsdsvr@earthlink.net
Woodland, Ca 95776

Name:_____Phone:_____

Address:_____City:_____State:____Zip:_____

E-Mail_____Club:_____AGE (60 & over):_____

Classes: Open_____Channel 1st_____2nd_____3rd_____ Limited to 5 Planes per channel

RES_____Channel 1st_____2nd_____3rd_____

Entry Fee: Both days $30.00 for one class, $40.00 for two.   _____
One day $20.00 for one class, $25.00 for two.   _____

Which days will you be there? Sat.____Sun.____Both_____

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Signature
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"SHORT CUTS"
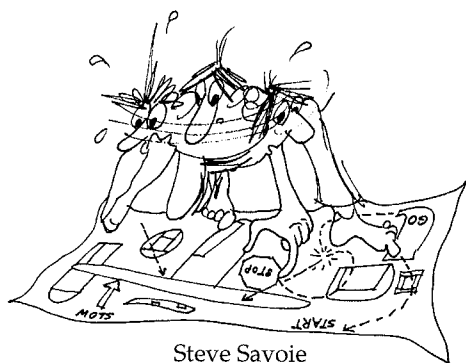
Steve Savoie
8 Spear Drive
Bowdoinham, Maine 04008
mainerinvt@yahoo.com

My New Workshop

Well, as you all know, "*SHORT CUTS*" has been missing from *RCSD* for quite some time now.

Part of the reason for this lapse has been my relocation back to Maine, starting a new job, and the lack of a workshop at my temporary residence. I've still been doing a fair amount of flying as well as the occasional repair job, but nothing worth writing about. Well, as it so happens, I *do* have a workshop, something around 10,000 sq. ft., but it's not at home, it's at work. As some may know, I'm now working for a small composites company

(Maine Composites) in Richmond, Maine and our primary contract is to fabricate the composite panels for and complete partial assembly of a six-passenger, all composite seaplane. The contract is for the 1st of a series of prototypes that will be used as flying demonstrators as well as for the certification process. The plane is called the Centaur and is the design of James Labouchere, the Chief Engineer and President of Warrior (Aero-Marine) Inc.

The role of Maine Composites is to develop the prototype composite tooling (molds) and to fabricate the carbon fiber components that will comprise the aircraft. Latest count had the total number of composite parts at 171, but that is subject to design refinement. These include cored wing-

skins, ribs, spars, fuselage, internal structural members, the planning hull, etc... These components will be bonded together at our facility and the entire plane will be shipped out in two 40' ISO shipping containers. The assembly groups will consist of but not limited to: fuselage, two wings, tail group and sponsons.

This program will require a fair amount of R&D to develop cost effective tooling and to utilize creative molding schemes which make sense for the parts being fabricated. Most all of the aircraft parts will be fabricated from prepreg carbon fiber but there may be some components made with alternative materials (Spectra/Kevlar/Glass) for the planning hull, and some parts could be made via a variety of resin infusion processes. All the

detailed part design is taking place over in the UK and transferred electronically to Maine Composites via electronic 3D models. Well, enough about the organization, let's talk about the aircraft.

This aircraft has some very unique and innovative features. The best of two worlds are blended together in the innovative design of the Centaur. The hull planning surface looks much more like that of a fine-tuned racing catamaran than would be associated with a seaplane. This design features a displacement hull that transitions to a true planning hull with just a little bit of back-stick. Not to be forgotten is the versatile stub wing which serves as a loading platform facilitating entrance into the aircraft for both passengers and cargo. Did I mention the interior can be configured to carry 55-gallon drums as well as a slew of cargo?

The stub wing also supports the two outer hull sponsons which are used for stability and additional buoyancy, but it's most impressive contribution to the aircraft design is by providing additional lift, during takeoff, by ground effect. This significantly reduces the power needed to break the water surface during take off and allows the weight savings to enhance other aspects of the aircraft's performance and design. The additional drag induced by the stub wing is reduced to a minimum once the aircraft is trimmed for normal flight.

Other innovative design features of the Centaur include a center section fowler flap that can be reflexed, allowing the wings to be folded back thus allowing the plane to dock in the space normally reserved for a 40' pleasure craft. This feature allows Centaur to conveniently load passengers and cargo at ease. To help the Centaur maneuver in close is a small onboard power unit that drives a small wet-jet unit similar to that of a jet ski but refined and powered to the
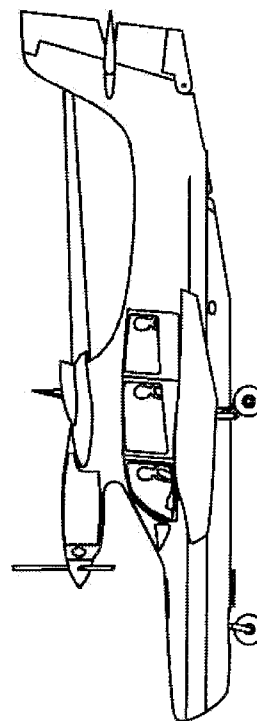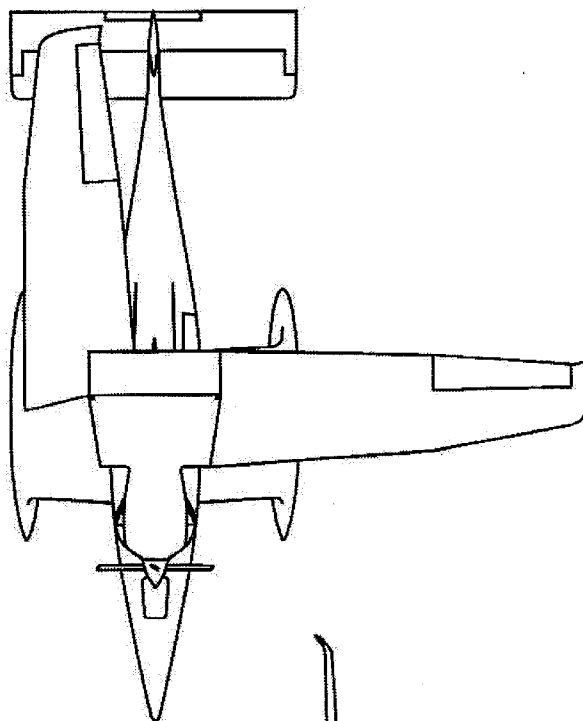
size of the aircraft's waterborne requirements. The plane is also fitted with conventional landing gear for hard surface landings. The current configuration for the tail group is comprised of a mid tail full flying horizontal stabilizer and standard rudder that includes a waterborne member for water steerage.

The primary material used for the aircraft's construction is an epoxy/carbon fiber laminate. It's used primarily for its weight to strength attributes and its resistance to corrosion, which is a never-ending concern for any waterborne aircraft. Warrior-Marine has a very informative web site that describes the Centaur Seaplane in much detail:
[http://www.centaurseaplane.com]

The folks are Warrior-Marine do not have plans available for modelers, so don't even ask, but they may be willing to discuss sale of a full size aircraft if you wish. I'm hoping to have some pictures of the masters which
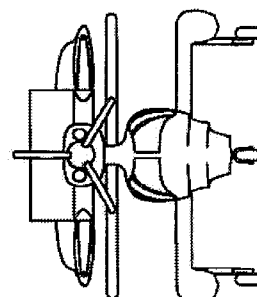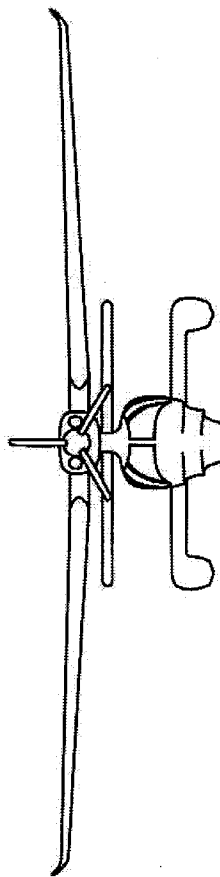
will be used to develop the composite tooling/molds as well as a brief overview of the 30' plus modular oven we are building to cure the composite panels.

'Til then.

∎

TECH TOPICS

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USING AN EXCEL SPREADSHEET TO RUN YOUR CONTEST

This is the second part of a column that we started last Fall interrupted by a hiatus into DLG exploration. Sorry for the delay, but it's time to complete the discussion about scoring routines that can make running a contest a lot easier for you.

We started by developing a scoring formula that could be used in an Excel spreadsheet to calculate time and landing scores for a T1 task. We developed that formula using Excel worksheet functions that could be entered directly into the scoring cell.

That approach works fine but can become awkward if more complex scoring functions (such as Max-Man) are needed. So, let's pick up with the scoring equation we developed for T1 and convert it to a user defined function to accomplish the same result. That provides a stepping off point for discussing Macros (a sequence of predefined spreadsheet commands) to help automate many of the tasks a CD or Scorekeeper must run to accurately administer a contest.

The T1 scoring formula requires the following:
1) 1 point/second score up to the target time,
2) 1 point/second loss beyond the target time,
3) No time points if the target time is exceeded by one minute,
4) Maximum of 100 point landing (by whatever means is used for that contest).

In the earlier column, I mentioned a simple way to enter time scores for each contestant. I've found this very convenient over the years and I recommend you give it a try. Instead of using Min:Sec formatting, or putting together separate columns for the minutes and seconds, I enter the time as a simple number.

For instance, a time of 6 minutes and 57 seconds would be entered as:
$$657$$
I then use the scoring routine to parse and sort it out. The computer doesn't mind doing the extra work and it's a lot less hassle (and less prone to error) for me.

To parse this entry into minutes and seconds, you can use a couple of spreadsheet functions (variants of which can also be used in user defined functions and macros). The result you really want to reach is the total number of seconds (417 in this example). A spreadsheet function to do that is (using the above example):
$$= 60 * INT(657/100) + MOD(657,100)$$

The INT function returns the integer value of the argument (6 in this case) while the MOD function returns the remainder (57) of the number (657) after the number is divided by the divisor (100).

Once the time value is parsed, the target time and actual time are compared to calculate the time score. The

---

Screenshot 1 — Excel: LastFling2002.xls — 2Meter-DataEntry

Cell I2: =Score(G2,F$2,H2)

	Last Name	First Name	S/E	Freq	Total	Rnd 1	Time	Landing	Total Score	Rnd 2	Time	Landing
1	Last Name	First Name	S/E	Freq	Total	Rnd 1	Time	Landing	Total Score	Rnd 2	Time	Landing
2	Jones	Joe	E	15	814	5	455	58	353	7	601	100
3	Landing	Spot	E	45	750		325	45	250		705	85
4	Line	Tow	S	27	782		502	66	364		556	62
5	N'Burn	Crash	E	16	869		512	98	386		715	78
6	Skid	Landon	E	12	857		437	83	360		643	94
7	Slope	Levi	E	19	894		500	75	375		700	99
8	Smith	Sam	E	23	756		502	99	397		559	0
9	Soren	Ben	E	9	853		457	82	379		702	56
10	Spann	Wing	E	22	555		212	51	183		547	25
11	Thermil	Slim	E	8	765		444	0	284		650	71
12					0				0			
13					0				0			
14					0				0			
15					0				0			
16					0				0			
17					0				0			
18					0				0			
19					0				0			

Sheet tabs: 2Meter-DataEntry / 2Meter-Summary / Entries / Scoring / Macros / Module1

Ready   Sum=353   NUM

Screenshot 2 — Excel: LastFling2002.xls — 2Meter-Summary

Cell A3: 1

TULSOAR'S LAST FLING OF SUMMER: 2-METER SUMMARY: 9/16/01

	Place	Last Name	First Name	Class	Total Score	Rnd 1	Rnd 2	Rnd 3	Rnd 4	Rnd 5	Rnd 6
3	1	Slope	Levi	E	894	375	519	0	0	0	0
4	2	N'Burn	Crash	E	869	386	483	0	0	0	0
5	3	Skid	Landon	E	857	360	497	0	0	0	0
6	4	Soren	Ben	E	853	379	474	0	0	0	0
7	5	Jones	Joe	E	814	353	461	0	0	0	0
8	6	Line	Tow	S	782	364	418	0	0	0	0
9	7	Thermil	Slim	E	765	284	481	0	0	0	0
10	8	Smith	Sam	E	756	397	359	0	0	0	0
11	9	Landing	Spot	E	750	250	500	0	0	0	0
12	10	Spann	Wing	E	555	183	372	0	0	0	0
13	11				0	0	0	0	0	0	0
14	12				0	0	0	0	0	0	0
15	13				0	0	0	0	0	0	0
16	14				0	0	0	0	0	0	0
17	15				0	0	0	0	0	0	0
18	16				0	0	0	0	0	0	0
19	17				0	0	0	0	0	0	0
20	18				0	0	0	0	0	0	0
21	19				0	0	0	0	0	0	0
22	20				0	0	0	0	0	0	0

Sheet tabs: 2Meter-DataEntry / 2Meter-Summary / Entries / Scoring / Macros / Module1

Ready   Sum=1   NUM

---

spreadsheet function we developed earlier to do this calculation in a single cell is given in Table 1. In this example, the formula would be entered in a column of cells for each contestant (and each round).

Another (and perhaps simpler) way to do this would be to write the scoring program in a user defined function that each cell could call. This allows more room to write the scoring function, incorporate the landing score and check to see if some condition (such as max time) is exceeded.

In Table 2 you'll find a user-defined function that calculates the T1 score (including landing) exactly the same as Table 1. In this example, all I have to do is call this function in the Score columns of the spreadsheet for each contestant and each round. Calling this function would look like:

= Score(G2, F$2, H2)

where cell G2 contains the contestants actual time, F$2 contains the target time for that round and H2 contains the landing score (Example in Figure 1).

So, where does this function reside in an Excel spreadsheet? Each version of Excel is a little bit different so you'll have to refer to your HELP menu. But generally it can be placed in a Visual Basic module or can be added to a Macro module. These are additional resources within the program that allow you to write or record code. In Excel 2000, for instance, you open the Visual Basic Editor under the Tools => Macros menu. You then add a module under the Insert menu once the Visual Basic editor is opened.

You can give this module a name to make it easier to organize things. You might, for instance, create a module for Scoring Functions. This module can contain things like the scoring program as well as the macros you'll use for organizing your contest.

An example of the flexibility you can incorporate in a user defined scoring function is given in Table 3. Here we've listed the scoring formula for the Max-Man task as originally published in RCSD in 1995. The formula has a number of breaks (represented by the IF functions in Table 3) that make it very hard to program in a one-line spreadsheet code. However, once the code is correctly written, your PC could care less whether it's simple

TABLE 1: Excel Spreadsheet Function for T1 Scoring

=IF(MOD(H2,100)<60,60*G$1-ABS(60*(G$1-INT(H2/100))-MOD(H2,100)),"Sec>60")

(Cell H2 contains the actual time. Cell G$1 contains the target time)

TABLE 2: User Defined Function for T1 Scoring (With Landing)

```
Function Score(Tm, TmMax, ScLand)
'
'  T1 Scoring Routine
'  First check for valid entry
'
    If Tm Mod 100 >= 60 Or Tm < 0 Then
      Beep
      Score = 0
      MsgBox "Input Data Error:  " & ActiveCell.Value
      Exit Function
    End If
    Score = 60 * TmMax - Abs(60 * (TmMax - Int(Tm / 100)) - Tm Mod 100)
    If Int(Tm / 100) - TmMax <= 0 Then Score = Score + ScLand
    If Int(Tm / 100) > TmMax Then
      Beep
      Score = ScLand
      MsgBox "Time > Max+60: " & Tm & ", " & TmMax
    End If
End Function
```

TABLE 3: User Defined Function for Max-Man Scoring

```
Function TimeScore(Tm)
'
'  Function to return the score for a Max-Man time
'  First parse the input field into minutes and seconds
'  Check the result for a valid time entry.
'  Then calculate the total number of elapsed seconds.
'
    If Tm Mod 100 > 60 Or Tm < 0 Then
      Beep
      MsgBox "Input Data Error:  " & ActiveCell.Value
      Exit Function
    End If
    Nt = 60 * Int(Tm / 100) + Tm Mod 100
'
'  Now use 'IF' conditions to calculate scores
'
    If Nt < 51 Or Nt >= 571 Then TimeScore = 0#
    If Nt >= 51 And Nt < 301 Then TimeScore = (Nt - 50) * 3
    If Nt >= 301 And Nt < 353 Then TimeScore = 750 - (Nt - 300) * 3
    If Nt = 353 Then TimeScore = 599
    If Nt > 353 And Nt < 421 Then TimeScore = 599 + (Nt - 353) * 3
    If Nt >= 421 And Nt < 473 Then TimeScore = 800 - (Nt - 420) * 3
    If Nt = 473 Then TimeScore = 649
    If Nt > 473 And Nt < 541 Then TimeScore = 649 + (Nt - 473) * 3
    If Nt >= 541 And Nt < 571 Then TimeScore = 850 - (Nt - 540) * 3
End Function
```

TABLE 4: Excel Macro To Rank Scores For The 2 Meter T1 Contest

```
' Sort2MScores Macro
' Macro recorded 2/27/2002 by David F. Register
'
Sub Sort2MScores()
    Sheets("2Meter-DataEntry").Select
    Range("A2:C41,E2:E41,I2:I41,M2:M41,Q2:Q41,U2:U41,Y2:Y41,AC2:AC41").Select
    Selection.Copy
    Range("A2").Select
    Sheets("2Meter-Summary").Select
    Range("B3").Select
    Selection.PasteSpecial Paste:=xlValues, Operation:=xlNone, _
        SkipBlanks:=False, Transpose:=False
    Application.CutCopyMode = False
    Selection.Sort Key1:=Range("E3"), Order1:=xlDescending, Header:= _
        xlGuess, OrderCustom:=1, MatchCase:=False, Orientation:= _
        xlTopToBottom
    Range("A3").Select
End Sub
```

(Table 2) or complex (Table 3).

Another feature you can incorporate in your scoring function is sending warning messages to the Scorekeeper. Note the use of the MsgBox function in two places in Table 2. This is to alert the user to a possible incorrect entry, something all too easy to encounter during the hustle of running a contest.

MACROS

At this point we've almost written a macro in Tables 2 & 3. About the only difference between the scoring function and a macro is the extent of the worksheet instructions issued by the routine. In a macro, we turn on a recording section within the program and let it record a series of steps we want to execute. Once those steps have been recorded, calling the macro then executes exactly those same steps in exactly the way we told the program to execute them.

Once the macro has been recorded, you can also go into that section of code and edit it some more. You can add messages to yourself, dialog boxes for entering or presenting data, etc. For today's example, we'll highlight the technique by developing a macro to rank the scores at the end of each round of a T1 type contest.

In Figure 1 I've captured a screen image of a 2-Meter data entry spreadsheet. I've used the scoring program noted above (Table 2) to score each entrant for each round. At the end of each round (and the end of the contest) I'd like to rank the scores so contestants can quickly see where they stand.

To do this, I've created a second spreadsheet (within the same workbook), which I've called 2 Meter Summary. What I'll do is copy the information from the 2 Meter Data Entry spreadsheet to the summary sheet and then use the sort command to rank the scores.

Under the Tools, Macro, Record New Macro menu (in Excel 2000), I name a macro and then start recording a series of instructions. I'll call this macro Sort2MScores.

The first thing I want to do is tell the macro which sheet I'm using. I do that by mouse clicking on the 2 Meter Data Entry tab at the bottom of the screen. I

then highlight the Entrant name (Last and 1st), Class (E/S) and the Final Score.

These selections can be highlighted by going to the top of each of the desired columns and dragging the mouse cursor to the end of the entry list while holding the CTRL key down. Move to the next column (keeping the CTRL key depressed all the while) and repeat until you have all the data you want. Once you've highlighted all the information, then click on the Edit menu and click Copy. After I've copied all the data, I'll mouse click on cell A2 to remove the highlight colors so I don't have to do that when I enter more scores later in the contest.

Now I want to open the 2 Meter Summary and put the summary data over there. To do this, click on the 2 Meter Summary tab at the bottom of the screen. Next I'll mouse click on Cell B3 (see Figure 2), then go to the Edit, Paste Special menu. On the Paste Special dialog box I'll click the Values button and then OK. The data (but not the formulae) from the 2 Meter Data Entry sheet is now in 2nd through 5th columns of the summary sheet.

Note that the columns you've pasted are highlighted (light lettering on dark background). At this point you can sort the highlighted data by clicking on the Data, Sort menu. At this point, a dialog box for the sort comes up. Be sure you set the No Header button and then the Sort By box to column E (should be the total score if all has gone according to plan) and the sort should be done in Descending order. Then give it an OK.

After the sort is complete you might want to click on a cell (B2, for example) to clear the highlighted area. Then stop recording the macro. In Excel 2000 there will be a macro button on the screen to do this. In earlier versions you'll have to go to the Tools, Macro, Stop Recording menu.

At this point your data should look like Figure 2. Note that we entered the data starting at B3 so we wouldn't mess up the place order in column A or the titleholders in Rows 1 and 2. If the instructions for the macro were correctly recorded, you can run this macro at any time during the contest and your 2 meter scores are sorted out for you.

If you ran through this exercise with me, the resulting Macro should look like the code in Table 4. If you want to add some bells and whistles, you can go in and add a few lines here and there to send yourself messages (MsgBox type functions) or continue recording an instruction to print the results, etc. I usually save printing for a separate menu command just in case a printer isn't available at the field.

This isn't a complete tutorial on the subject but I hope it plants a few ideas among those in your club that are comfortable with programming in Excel. From experience I can guarantee the effort to set up the programming is well worth the time savings at the field.

I have a T1 spreadsheet (in Excel 95 format) that scores a 2M and Unlimited T1 contest, sorts out the scores for each event and then combines them for an overall result (something I sadly messed up at our Last Fling, 2001). E-mail me a note if you'd like a copy by way of example.

I'd also encourage you to take a look at a new discussion group on Yahoo that Tom Clarkson recently sponsored. It's primarily directed at HLG scoring but contains files pertinent to other events. That address is:

http://groups.yahoo.com/group/RCGliderScoring/

If someone in your club has a laptop with Excel, please give these methods a try. After awhile you'll wonder how you ever ran a contest without them.

■

SPRING TIME! ZIKA
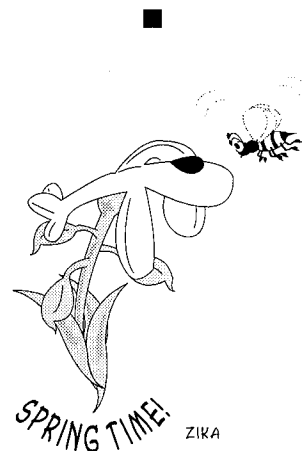
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Reference Material

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.

International Scale Soaring Association

There is a growing interest in scale soaring in the U.S. We are dedicated to all aspects of scale soaring. Scale soaring festivals and competitions all year. Source for information on plans, kits, accessories and other people interested in scale. For more information:

web site: www.soaringissa.org

Books by Martin Simons: "World's Vintage Sailplanes, 1908-45", "Slingsby Sailplanes", "German Air Attaché", "Sailplanes by Schweizer". Send inquiries to: Raul Blacksten, P.O. Box 307, Maywood, CA 90270, <raulb@earthlink.net>. To view summary of book info.: http://home.earthlink.net/~raulb

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T.W.I.T.T.

(The Wing Is The Thing)

T.W.I.T.T. is a non-profit organization whose membership seeks to promote the research and development of flying wings and other tailless aircraft by providing a forum for the exchange of ideas and experiences on an international basis. T.W.I.T.T. is affiliated with The Hunsaker Foundation which is dedicated to furthering education and research in a variety of disciplines. Full information package including one back issue of newsletter is $2.50 US ($3.00 foreign). Subscription rates are $20.00 (US) or $30.00. (Foreign) per year for 12 issues.

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A Division of the Soaring Society of America

The purpose of the Sailplane Homebuilders Association is to stimulate interest in full-size sailplane design and construction by homebuilders. To establish classes, standards, categories, where applicable. To desiminate information relating to construction techniques, materials, theory and related topics. To give recognition for noteworthy designs and accomplishments.

SHA publishes the bi-monthly *Sailplane Builder* newsletter. Membership cost: $15 U.S. Student (3rd Class Mail), $21 U.S. Regular Membership (3rd Class Mail), $30 U.S. Regular Membership (1st Class Mail), $29 for All Other Countries (Surface Mail).

Sailplane Homebuilders Association
Dan Armstrong, Sec./Treas.
21100 Angel Street
Tehachapi, CA 93561 U.S.A.

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Vintage Sailplane Association
1709 Baron Court
Daytona, FL 32124 USA

The Eastern Soaring League (ESL) is a confederation of Soaring Clubs, spread across the Mid-Atlantic and New England areas, committed to high-quality R/C Soaring competition.

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.

Typical ESL competition weekends feature 7, or more, rounds per day with separate contests on Saturday and Sunday. Year-end champions are crowned in a two-class pilot skill structure providing competition opportunities for a large spectrum of pilots. Additionally, the ESL offers a Rookie Of The Year program for introduction of new flyers to the joys of R/C Soaring competition.

Continuing with the 20+ year tradition of extremely enjoyable flying, the 1999 season will include 14 weekend competitions in HLG, 2-M, F3J, F3B, and Unlimited soaring events. Come on out and try the ESL, make some new friends and enjoy camaraderie that can only be found amongst R/C Soaring enthusiasts!

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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INTERNATIONAL SLOPE RACING

Send entry fee, full name, AMA number, contact info, primary and alternative frequencies to:

Barry Baskin c/o ISR Race
941 Walnut Avenue
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for more info
email Craig Toutolmin:
craig@thehelix.com
or go to:
www.sloperacing.com/isr2002.htm