NEXT CLUB MEETING: MON JAN 22th

Club meetings are held at 7:30pm on the third Monday of the month, except for legal Monday holidays, at the Pyle Adult Community Center, at the southwest corner of Rural & Southern in Tempe. Contests are held on the second Sunday of every month at Rodeo Park at the southeast corner of Ray & Val Vista Roads in Gilbert.

WingTips is CASL’s monthly newsletter and as such always encourages members to submit articles for publication. All material must be given to the editor no later than the monthly contest. The editor also encourages other clubs to use any material from this newsletter, provided proper credit is given.

CHANNELS #16 & #17 have experienced problems at Rodeo Park. Use at your own risk.

Editor:
Chuck Wehofer 480-777-9733
chuck@wehofer.com

A.M.A. CHARTER #2133
FOUNDED IN 1985

CASL OFFICERS 2000-2001

HANK CAPLE 480-963-7028
ADAM JOHNSON 480-539-0336
VERN POEHL* 480-945-1957
ERICH VAN SANFORD* 480-857-1026
CHUCK WEHOFER* 480-777-9733
STEVE WILLCOX 602-249-6795

INTERNET ADDRESS:
www.casl.net

LSF
P.O. BOX 3028
Muncie, IN  47302-1028

DEC ‘00 EDITION
SAGE Contest Announcement

From our fellow pilots in Tucson this announcement.....

SAGE (Southern Arizona Gliders and Electric's) will be sponsoring an open class (any span and any throwing technique) hand launch glider contest on Saturday 7 April 2001 at the SAGE Avra Valley Field. (Check out Mike Noel's website for directions to the field as well as some neat slope pictures at A-Mountain!

http://sites.netscape.net/amountainaero/homepage

The contest will have both duration and distance tasks. A HL Clinic will take place between 8-9 AM to demonstrate techniques followed by the contest. We have some raffle prizes that will be awarded to contestants.

Odd frequencies are required.

We think that this will be a great way to spend an early spring day in Southern Arizona and be a good chance to get ready for the IHLG Contest at Poway in June.

Also bring a slope plane and catch the late afternoon breeze at A-Mountain for a full day of flying!

If you have any questions please feel free to contact me at this e-mail address.kostuk@ece.arizona.edu

Hope to see you there!
Ray

Hey gang! The SWC '01 is over and all the hard work was well worth it. We had one heck of a contest. I have been checking the comments on the RCSE and all of them are very positive. We had flyers in from as far away as Hawaii and visitors from England. He is hoping to fly next year if he can remember to send in his entry form early enough. The contest was a success because of all the hard work that was done by our CASL volunteers. This type of contest is not possible unless we have a very dedicated group of people helping out. So thanks to all the CASL volunteers. I will be having a recap of the financial side of the contest in next month’s newsletter. I am waiting for a few more bills to come in so I can book them paid. But don’t worry, the contest was very profitable for us. We need to start thinking about some of the things that we want to purchase for improvements.

Dave and I rented a storage locker to relieve the field shed of some equipment that is only pulled out once a year. The sound system will be stored out there, plus most of the launch equipment. If it is used primarily for the SWC it will be at the locker. With the locker we will finally be able to get insurance on our equipment. Anything that is stored at the locker will be covered. We are getting the 100% replacement policy and finally getting piece of mind. So now if the shed does get broken into or goes up in flames our equipment losses will be limited by what was stored only in it. We are splitting our risk.

Just a note on the new scooter. It is quite a bit more powerful than the old one. Please use common sense when riding it. No kids are allowed on it and only club members will be using it. And as always, Ride at your own risk!
### OPEN CLASS

<table>
<thead>
<tr>
<th>NAME</th>
<th>JAN</th>
<th>FEB</th>
<th>MAR</th>
<th>APR</th>
<th>MAY</th>
<th>SEP</th>
<th>OCT</th>
<th>NOV</th>
<th>TOTAL</th>
<th>CLS</th>
<th>PLC</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAI RD, J</td>
<td>966</td>
<td>993</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1959</td>
<td>S</td>
<td>1</td>
</tr>
<tr>
<td>STI DHAM J</td>
<td>994</td>
<td>948</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1942</td>
<td>E</td>
<td>2</td>
</tr>
<tr>
<td>RUSSELL, M</td>
<td>908</td>
<td>926</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1834</td>
<td>S</td>
<td>3</td>
</tr>
<tr>
<td>HI TZEL, J</td>
<td>926</td>
<td>895</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1821</td>
<td>S</td>
<td>4</td>
</tr>
<tr>
<td>RI CHARD, S</td>
<td>691</td>
<td>759</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1450</td>
<td>S</td>
<td>5</td>
</tr>
<tr>
<td>BRI STER, P</td>
<td>339</td>
<td>898</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1237</td>
<td>S</td>
<td>6</td>
</tr>
<tr>
<td>TROUT, C</td>
<td>226</td>
<td>944</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1170</td>
<td>E</td>
<td>7</td>
</tr>
<tr>
<td>ROBERTS, B</td>
<td>355</td>
<td>699</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1054</td>
<td>S</td>
<td>8</td>
</tr>
<tr>
<td>HOFFER, G</td>
<td>384</td>
<td>621</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1005</td>
<td>E</td>
<td>9</td>
</tr>
<tr>
<td>BOTHELL, R</td>
<td>0</td>
<td>1000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1000</td>
<td>E</td>
<td>10</td>
</tr>
<tr>
<td>ROBERTSON, J</td>
<td>1000</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1000</td>
<td>E</td>
<td>11</td>
</tr>
<tr>
<td>BARRI E, D</td>
<td>988</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>988</td>
<td>E</td>
<td>12</td>
</tr>
<tr>
<td>POEHL, V</td>
<td>960</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>960</td>
<td>E</td>
<td>13</td>
</tr>
<tr>
<td>CYR, J</td>
<td>0</td>
<td>944</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>944</td>
<td>S</td>
<td>14</td>
</tr>
<tr>
<td>PLUMMER, S</td>
<td>936</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>936</td>
<td>E</td>
<td>15</td>
</tr>
<tr>
<td>VAN SANFORD, E</td>
<td>0</td>
<td>898</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>898</td>
<td>S</td>
<td>16</td>
</tr>
<tr>
<td>CLARK, D</td>
<td>892</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>892</td>
<td>S</td>
<td>17</td>
</tr>
<tr>
<td>WILLCOX, S</td>
<td>886</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>886</td>
<td>E</td>
<td>18</td>
</tr>
<tr>
<td>ROSEBERRY, B</td>
<td>883</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>883</td>
<td>E</td>
<td>19</td>
</tr>
<tr>
<td>HANSON, G</td>
<td>858</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>858</td>
<td>S</td>
<td>20</td>
</tr>
<tr>
<td>WENZlick, D</td>
<td>687</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>687</td>
<td>E</td>
<td>21</td>
</tr>
<tr>
<td>MOOR, M</td>
<td>395</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>395</td>
<td>S</td>
<td>22</td>
</tr>
</tbody>
</table>

### 2-METER CLASS

<table>
<thead>
<tr>
<th>NAME</th>
<th>JAN</th>
<th>FEB</th>
<th>MAR</th>
<th>APR</th>
<th>MAY</th>
<th>SEP</th>
<th>OCT</th>
<th>NOV</th>
<th>TOTAL</th>
<th>CLS</th>
<th>PLC</th>
</tr>
</thead>
<tbody>
<tr>
<td>STI DHAM J</td>
<td>920</td>
<td>1000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1920</td>
<td>E</td>
<td>1</td>
</tr>
<tr>
<td>HI TZEL, J</td>
<td>632</td>
<td>932</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1564</td>
<td>S</td>
<td>2</td>
</tr>
<tr>
<td>ROSEBERRY, B</td>
<td>470</td>
<td>898</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1368</td>
<td>E</td>
<td>3</td>
</tr>
<tr>
<td>TROUT, C</td>
<td>206</td>
<td>949</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1155</td>
<td>E</td>
<td>4</td>
</tr>
<tr>
<td>ROBERTSON, J</td>
<td>1000</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1000</td>
<td>E</td>
<td>5</td>
</tr>
<tr>
<td>CYR, J</td>
<td>0</td>
<td>940</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>940</td>
<td>S</td>
<td>6</td>
</tr>
<tr>
<td>BOTHELL, R</td>
<td>0</td>
<td>925</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>925</td>
<td>E</td>
<td>7</td>
</tr>
<tr>
<td>VAN SANFORD, E</td>
<td>0</td>
<td>925</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>925</td>
<td>S</td>
<td>8</td>
</tr>
<tr>
<td>BARRI E, D</td>
<td>771</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>771</td>
<td>E</td>
<td>9</td>
</tr>
<tr>
<td>SLEPAK, D</td>
<td>629</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>629</td>
<td>S</td>
<td>10</td>
</tr>
<tr>
<td>HOFFER, G</td>
<td>0</td>
<td>567</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>567</td>
<td>E</td>
<td>11</td>
</tr>
<tr>
<td>POEHL, V</td>
<td>521</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>521</td>
<td>E</td>
<td>12</td>
</tr>
</tbody>
</table>

Don’t forget that if you are in need of a key for Rodeo Park just contact Chuck Wehofer and one will be sent you straight away. Also, when you are flying at Rodeo please use your club card on the Frequency Board to indicate that you are a member of the club. If you see anyone just using their AMA card or some other form of identification please invite them to join the club. Guests can use Rodeo for a couple of flying sessions but we need to encourage all the people that come out and fly to become members of the club. There should be extra club forms in the plastic pipe next to the Freq. Board and if that is empty there are extras in the CD bag in the shed.
CENTRAL ARIZONA SOARING LEAGUE MONTHLY CONTESTS

MAR 11, 2001
RODEO PARK
RAY & VAL VISTA RD’s in GILBERT
SUNDAY
TRIATHALON
OPEN & 2 METER
TASK: 21 Min 4 RNDs 7 Min Max
LANDING: Tape - Tape
START TIME 9:00a.m.
ENTRY FEE: $3 FOR ONE $5 FOR BOTH
AMA '01 RULES APPLY
AMA CARD REQUIRED
LAUNCH DEVICES: 12V WINCHES WITH “BIG WHEEL” RETRIEVERS
AWARDS
1st - 3rd
C.D.: JIM STIDHAM
PHONE: 480-545-9750

APR 08, 2001
RODEO PARK
RAY & VAL VISTA RD’s in GILBERT
SUNDAY
PRECISION/DURATION
OPEN & 2 METER
TASK: 3 RNDs 10 MIN MAX
LANDING: BULLS-EYE CIRCLE
START TIME 9:00a.m.
ENTRY FEE: $3 FOR ONE $5 FOR BOTH
AMA '01 RULES APPLY
AMA CARD REQUIRED
LAUNCH DEVICES: 12V WINCHES WITH “BIG WHEEL” RETRIEVERS
AWARDS
1st - 3rd
C.D.: VERN POEHLS
PHONE: 480-945-1957
Cutting Foam Wings
By Mike Glass – a Novice

Part 1 of a 3 part series.

Cutting foam for a wing seems like it would be hard. Even when someone tells you about it or you read about it, it seems complicated and it sounds like you need a lot of expensive equipment. It's just not true! It's easy and inexpensive. It's harder to explain than it is to do.

The first time I actually saw someone cut foam was at the Southwestern Aeromodeling Conference (SWAC) last spring. Two guys from a local club gave a demo of cutting a symmetrical airfoil for a power combat plane. They explained their method and cut a wing in less than 10 minutes - and they did it with a broomstick, some wire and $25 worth of electrical supplies. I was impressed. Their method required two people and was geared to a symmetrical airfoil but it gave me the idea that it was doable.

I then ventured on to the web. There is lots of information in cyberspace - so much that it can be confusing. I downloaded page after page of information and plans for automatic foam cutters, all slightly different. I also talked to a couple of our club members, Dale King and Gerry Walton. They explained their methods (slightly different) and I went over to Gerry's shop to watch him cut some foam. Armed (and confused) with all of this information, I decided it was time to jump in and build something.

What I deduced from my information gathering is that there are lots of methods to cut foam but they're all very similar. The basic method is to stretch a wire in a "bow", hook up a power source to the wire (heat it up) and pull it through the foam guided by templates of the airfoil you want to produce. I will endeavor to explain how I accomplished this task. My first project was the "Terminator" built from plans generously supplied on the web by the Charles River Radio Controllers (www.charlesriverrc.org). This is a polyhedral hand launch glider.

The Bow
This is the easiest part. Look at the illustration below. The parts you'll need are a length of 1x4 wood, a 36” long by 1/4” diameter music wire rod, and a cutting wire. The length of the 1x4 will determine the maximum size of foam you can cut. The biggest "Terminator" panel is 21" so I used a 24” long 1x4.

People use many different types of wire for the cutting wire. I use .018" braided stainless steel wire normally used for control line airplanes. You can use stainless steel fishing line or you can buy wire from companies that make foam-cutting machines. It just needs to be strong, about .018" in diameter and not stretch too much when it's heated.

To build the bow, cut the 1/4” rod in half. These pieces will be the "legs" for your bow. Drill a hole in each end of the 1x4 to accept the 1/4” rod such that the "legs" angle out about 20 degrees (not critical). At the end of each "leg" cut a little notch with a Dremel tool or file to hold the cutting wire. Glue the "legs" into the 1x4.

Next, measure the distance between the ends of the "legs". Make your cutting wire about 6" shorter than that distance. Make loops on the ends of the wire. I do this by running the wire through a short piece of small diameter copper tubing, looping it back through then crimping it in a vice.

That's it! When you get ready to use it, string the bow by putting one end on the workbench and applying some pressure to the other.

The Power Supply
Every web site that talks about power supplies includes a warning that goes something like this:

If you do not have at least a master's degree in electrical engineering, don't even attempt to build this. Doing so will cause immediate death by electrocution. And if you do kill yourself, it's not our fault - we warned you.

While I don't want to minimize the dangers of 120V power, this is not rocket science. However, if the idea of changing a light switch in your house makes you break out in a sweat, let somebody else do this part for you. One safety suggestion I would like to make is that you should always use Ground Fault Circuit Interrupter (GFCI) protected outlets in the shop. They really can save your bacon.
On with the building. The items you’ll need are:

- Standard dimmer switch $5
- Doorbell transformer - 16 volt $15
- A power cord $2
- Wire nuts
- 14-18 gauge wire
- Alligator clips
- A box to put these things in

In addition, you may want:
- An indicator lamp switch
- Banana plugs and jacks

Build the power supply using the following diagram as a guide into some sort of box. I built a small box out of plywood. Double-check all of you connections before you plug it in and check the output with a voltmeter.

![Diagram of power supply](image)

My power supply. Note the indicator switch and banana plus and jacks

The Templates
This is the hardest part of the process. It’s not really hard but it takes some time on your initial attempt. First, you’ll need a template pattern. For the “Terminator”, one is available at the Charles River web site in Acrobat format. You can also draw patterns by hand (fat chance) or there are several computer programs that generate patterns. Compufoil is the most well known program. It’s very good and several club members have copies and will be glad to generate some patterns for you.

You can make templates out of many materials. I used Formica. You need to make several templates. For the “Terminator” you need 6 templates - a top and bottom template for each side of the center section and a top and bottom for the tip. To make the templates, make six Formica blanks about 9” long by 2” wide. Attach two of them together with double-sided tape for the center section tops. Attach another two together for the center section bottoms. Spray the patterns with 3M Super 77 and glue them to the Formica blanks. Cut the patterns out using a band saw or jigsaw. Think before you cut. Remember you need a top template and a bottom. You need to follow the right line on the pattern. Don’t try to cut right to the line, just get close. Next, sand and file down to the line using whatever you’ve got (Dremel tool, sanding center etc.). This is the tedious bit. Take your time and do a good job. Get them as smooth as you can. If the templates are not accurate, you can’t cut an accurate wing.

Next, you need to drill some indexing holes. Attach the bottom and top center templates together using double-sided tape (four pieces will be stuck together). Also join the two tip templates together. Take care to line up the leading edges. Now mark for three holes along the length of the template about ¼” from the bottom of the template. Drill 3/32” holes (the size of 5d nails) through the stack of templates.

Now you can take everything apart. It a good idea to glue patterns to all sides of the templates. It will help with the confusion later.

![Top and bottom templates](image)

Next Month... the foam cutting process.

Airfoil Pattern Software Sources
- Foils 4.2 - FREE - http://web.onyxnet.co.uk/Hunt.
- Family-onyxnet.co.uk/foils.htm
- Airfoil Plot 8 from Chuck Anderson - mentioned in RCSD September 2000 Page 12.