

Radi- C-ntr-ll-ed Soaring Digest

March 2010

Vol. 27, No. 3



March 2010
Vol. 27, No. 3



Front cover: Olivier Bordes ready to launch a Tempus, an F3F sailplane, at "La Madeleine," France, close to the Spanish border. Photo by Pierre Rondel
Canon EOS 10D, ISO 400, 1/750 sec., f9.5, 12mm

3 *RC Soaring Digest* Editorial

4 Building the Mountain Models Scepter

The Scepter is a laser cut 100" span all wood RES 'ship which builds quickly and offers surprisingly good performance. Review by Pete Carr

11 Restoration

Jim Park rebuilds his self-launching 5.2m Nimbus 4DM.

15 8:00'59.2

Chris Lee's Eight Hour Slope Flight

It was cold, but the wind was from the right direction. Can Chris Lee's two meter EPP foamie make the 8-hour LSF slope task? By Ken Trudeau (who made his 2-hour LSF slope task while monitoring Chris' flight).

Tappanappa slope weekend 22

Four scale gliders built by Martin Simons from his own plans were in the air at the one time at this January event. By Greg Potter with background information by Martin Simons, photos by Robert Gunn

Hütter 17, NX17HU 28

Mark Nankivil presents a walk-around of Gerry Wild's open cockpit glider. Additional photos by Gilles Auliard, courtesy of Gerry Wild.

Man-on-Man Contest Spreadsheet 42

A proven Excel spreadsheet for scoring MoM contests. Written by Tony Estep, readily available for downloading from the Mississippi Valley Soaring Association web site.

2010 RAF Hawk Display Color Scheme 44

The Hawk Display team is the public face of Number 4 Flying Training School (4FTS) based at RAF Valley on Anglesey. The 50th Anniversary of 4 FTS at RAF Valley deserves a special paint scheme for the show aircraft. The 4-color scheme is certainly stunning.

Back cover: Two Oceans Slope Soarers PSS Festival 2010, Piet Rheeders' Thulane in XFLR5.

R/C Soaring Digest

Managing Editors, Publishers

B² Kuhlman

Contributors

Pete Carr

Mark Nankivil

Jim Park

Greg Potter

Piet Rheeders

Martin Simons

Ken Trudeau

www.globalaviationresource.com/reports/2010/2010hawkdisplayscheme.php

www.rafhawkdisplay.com

Photographers

Gilles Auliard

Pete Carr

Robert Gunn

Jim Park

Piet Rheeders

Pierre Rondel

Robert Samuels

Contact

rcsdigest@themacisp.net

Web: <http://www.rcsoaringdigest.com>

Yahoo! group: R/CSoaringDigest

AIM screen name: R/CSDigest

Microsoft Messenger: rcsdigest

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 each article is 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.

Copyright © 2010 *R/C Soaring Digest*

Published by B2Streamlines <<http://www.b2streamlines.com>>

P.O. Box 975, Olalla WA 98359

All rights reserved

R/C Soaring Digest is published using Adobe InDesign CS4

In the Air



Our sincere thanks to Mick Freer and Mark Nankivil for making publication of the 2010 RAF Hawk display color scheme possible. The graphics had been making the rounds on some of the European 'boards for a while, and the color scheme was so exciting it just could not be left out of this issue. Make sure you follow the link to the virtual 360°. And we would certainly like to know if someone mimics this paint job on a Hawk sloper.

Pierre Rondel contacted us just a few days before the deadline for this issue and offered a variety of his photos for use within *RCSD*. The front cover of this issue showcases one of Pierre's images. Stay tuned for more examples of Pierre's photography in the future.

The back cover this month is a bit different than the usual in that it consists of two images rather than the usual single, and one of the images is an event announcement poster. Two Oceans Slope Soarers just completed an aerobatic event (coverage of that contest will be in the next issue) and is now looking forward to an event with more of a fun-fly factor. The other back cover image stands out as it depicts a sailplane concept rather than an actual aircraft. Piet forwarded the image without comment, so we're hoping to learn more about the Thulane design and its construction in the future.

Time to build another sailplane!

Building the MOUNTAIN MODELS

SCEPTER

Pete Carr, wb3bqo@yahoo.com



There aren't a lot of balsa sailplane kits on the market, so I was very interested to read the promo for the Scepter on the Mountain Models web site. The details of the 'ship were well thought out and it seemed like an easy build. It also had the

one main feature I was looking for. That was a big radio room so I could change receivers or batteries and do testing of repaired electronics in the air.

The Scepter is a 100 inch span pure sailplane with a skinny nose that would

need major mods to add an electric motor. The wing loading is from 7.7 to 8.4 oz/sq ft and the airfoil is a SA7038. I had not heard of the airfoil before but was pleasantly surprised by its performance.

Mountain Models uses laser cutting to produce their parts. The edges of these parts are burnt brown in color which can be a problem under light color covering.

I had planned on using Insignia Blue Monokote so didn't have to worry about that. The ship is very strong, so lighter, thinner covering would work well. You do need to prepare the wood to remove the laser burns if you go that route.

The various parts fall together so tightly that thin CA glue would work well for construction. I decided to use Elmer's waterproof glue (white glue) instead because it has worked great in the past.

I normally thin the glue 25% and apply it with a small paint brush. I also pre-glue the joints on soft balsa parts to make sure that there is a good layer in the joint. This may seem like a bit of extra work but is worth it. I've recovered 20+ year old sailplanes built this way and marveled at the strength of the frames after all that time..

The Scepter was built exactly as the instructions indicated. I did add a 1/16th shim under the trailing edge of the outer wing panels for washout. That may not be necessary but certainly didn't hurt.

The elevator push rod is a standard plastic type, but I used pull-pull cables on the rudder. The cables are a bit of extra work but make rudder control extremely precise. These were from an old roll of controlline cables. I used small diameter brass tubing to crimp

The ship has rotated to launch angle and is climbing up the line. The slight warp in one outer panel gave it a turn but was controlled with trim.





The tail feathers with a dowel joining the elevator halves. The rudder is of the counterbalanced type so check the clearance between the vertical fin and rudder. The fin is keyed into the horizontal stab but check that it glues in at 90 degrees.

the ends of the cables and some Sullivan clevises in the rear. The whole arrangement is very solid and easily adjusted at the tail. Since there is no flex in the rudder control system I do recommend that the rudder servo use metal gears for reliability.

The radio room hatch of any sailplane can be a challenge to attach. The Scepter has a very nice one that uses a wood tongue on the front that slides under the fuselage front block. The rear edges of the hatch are shaped to be squeezed as the hatch is positioned on the fuselage. You then release the rear of the hatch and it slides sideways into notches in the fuselage sides. The result is a hatch that offers easy access to the



The wing has its spars mounted right at the surface, not covered by sheeting as with some designs. This give extra depth to the spars and greater strength. The shape of the D-tube leading edge is easy to fabricate.



This is looking down onto the radio room with the servos and receiver installed. The JR R600 receiver is an ease fit while the forward battery compartment will handle just about any battery. The front servo is for elevator while the rear one is connected to the pull-pull system for rudder.



The fuselage and wing roots are shown. The canopy plastic was hard to glue to the frame but was finally attached with foam-safe CA glue. I was very pleased with the hatch attachment mechanics. The large hole in the fuselage sheeting between the wings is to route spoiler wiring and connectors at hookup.

radio, looks great and is dead simple to fabricate.

Those of you that have built Airtronics Aquila sailplanes may remember the very short wing rod that was used in the kit. Well, the Scepter wing rod is nothing like that. The rod is very stiff and long enough to stand up to a full pedal launch. The wing spars are designed to sit right

on the outer skin of the wing with balsa D-tube sheeting fitted around them. The extra space between the spars increases wing strength while making the wing rod tubes easier to install. The SA7038 airfoil is fairly thin so this extra feature is necessary for overall strength.

With 100 inch span the Scepter is very easy to see at altitude and the thin airfoil

handles wind very well. The design, however, doesn't afford access under the wing to install ballast. It would be a good choice as a vehicle for the intermediate LSF tasks since it covers ground fast and is easy and stable to fly. Slope tasks might be a challenge since some extra weight would be needed to help tame the turbulence.



Here all the parts are test fitted and aligned before covering. Since the fuselage is square-sided, covering is very simple. Modelers new to covering would find this ship a good first project.

On some occasions I've been known to flip a sailplane upside down on landing. That puts a lot of stress on the wing polyhedral joints. I added some half ounce fiberglass cloth and resin to these joints on the off chance that I get stupid again.

The spoilers are very effective. I used a servo at each spoiler location with a Y-harness connecting to the throttle channel of the receiver. It would be possible to split the spoilers on separate channels for differential steering but I haven't tried it.

The thin airfoil makes servo installation harder than normal but goes well if you choose the servos carefully.

I started this project in late September with the idea of stretching it out over the winter. The ship is engineered so well and the parts presented so few problems that it was RTC in just over a month!

I ordered the covering and installed the radio and finished the ship just before Thanksgiving.

Now what?

My hometown is in Northwestern Pennsylvania where snow arrives the week before Thanksgiving and continues until June (or so it seems). It was obvious that test flights on the Scepter would call for extreme measures. I called my old flying buddy, Rich Skellen, and outlined the mission. After he questioned my sanity, stopped laughing and considered the prospects, he decided to come out and photograph the adventure.

The high school soccer field I normally use is situated atop a mountain and surrounded with metal fences, playground swings and small trees. It's fine for experienced planes but no place for first flights. We decided to use the Firemans' field in downtown Ridgeway that doubles as a helicopter landing zone for medevac flights. It has trees and some power lines but is better than the soccer field.

I had used the plans as a guide to set the center of gravity and that wasn't far off. The ship rotated well on the winch line and climbed strongly to altitude.

There was a small warp in the starboard outer wing which induced a turn. That was straightened out and the ship flies straight. The only other issue was with the spoilers and the amount of elevator compensation needed to hold the nose up. On the first flight I didn't have enough, popped the spoilers at low altitude, and had to quickly add up elevator to keep the ship from making a one-point landing. The landings were flat and stable after adding additional compensation.

The radio room of the Scepter is large enough so that just about any modern receiver will fit. This was important to me since I wanted to use the ship to range test radios. The four servos and receiver don't draw very much current so battery selection is also not a problem.



The Scepter is covered and ready for flight. The center of gravity turned out to be very close to the plans location but I had to move the tow hook forward about 3/16th inch to get a stable launch.

I didn't have to add much nose weight to balance the ship so battery changes would effect the CG to a large degree.

If you decide to use lighter/smaller batteries then be careful to check the CG to avoid being surprised on the launch.

Obviously the new 2.4 GHz radios would be excellent in the Scepter. There isn't any carbon fiber in the frame and the radio room is more than big enough.

They are lighter as well so would promote even better thermal performance.



I am able to report that the “snow” performance of the Scepter is excellent. The flat bottom of the fuselage lets it slide across the snow with ease. For those other crazy people who fly in these conditions, the Scepter is well suited for fun in the snow.

A good day in the shop is when fine sanding dust coats the lenses of my glasses, assemblies are scattered across the bench with pins sticking out everywhere, and wood scraps litter the floor. It’s fun to sit in the middle of this semi-controlled chaos and think about the return of warm weather, flying with buddies, and chasing the birds. That seems a long way off but will soon be here.

Snow thermals are hard to find so I look forward to Spring and a chance to chase lift with the new ship.

References:

<http://www.elmers.com>

Lists types of glue for various applications.

<http://www.mountainmodels.com>

Lists various models kits and building supplies.

<http://www.silentflight.org>

Site for the League of Silent Flight

For those of you in more temperate climates, this is what winter flying is all about. You need to clear a spot for the winch and foot pedal. You also need to concentrate on flying while snow slowly melts into your shoes.



RESTORATION

Jim Park, ven2s@yahoo.com

If you've been soaring long enough, you will lose a sailplane that you really love, probably a few and hopefully not many. I lost a beautiful 7 meter ASH-25 a few years ago to a simple interference glitch, but its loss opened me up to a wounded bird sitting in the corner, a 5.2 meter Nimbus 4DM.

Two years earlier, this sailplane made a forced landing in a grove of low trees due to a receiver giving up the ghost. I retrieved the wreckage — the canopy was totally lost, the center panels had cracks and various levels of delamination but the outer panels were clean, although, on the right outer panel, an aileron horn had come loose.

The Nimbus is a self-launch with a folding mechanism that retracts in the fuselage just behind the wing roots; the mechanism is almost as expensive as the plane.

In any event, I had some problems with the SLS (Self Launch System) and when the plane crashed, I was done with it.





In the past I would just throw the thing out or sell it... crazy, but by now I had learned that it is best to put a crashed bird in the corner and look in on it at a later date.

Looking in on the Nimbus, three years after the fact and a downturn in the economy, helped me to appreciate it more and begin attacking a refurb project. It was not as tough as I thought it would be and the end result was worth the effort.

Before I worked on the plane itself, I had to look at the electronics, including the SLS and the old receiver. The old radio receiver was thrown out and replaced with a new 10 channel Futaba receiver I purchased for \$50.00 off EBay.

But the SLS proved to be a mouse hunt that turned up loose wiring that caused it to malfunction from time to time.

I soldered the wiring and made sure everything worked correctly on command, and then I proceeded to repair the airframe.





Firstly I ordered the most expensive part of the repair, the canopy. The Nimbus canopy is a work of art with two working vent windows, integral hinge points, and a locking mechanism seamlessly matched to the fuselage.

When the new canopy arrived in the mail, packed extremely well by Etienne at Icare, and reattached to the body, the plane came back to life; now the game was on!

Using slow cure epoxy on everything, I reattached the upper glass and gelcoat back to the balsa underneath and repaired any cracks and weaknesses in wings. I also replaced the steel wing rod with the second high price item, a carbon fiber one that, with some sanding, fit nicely in the refinished fuse and wings. The fuselage had a major crack just under the rear left side of the cockpit area. The crack was reinforced, cleaned, epoxied, and sanded.

Allowing time for wings and fuselage to cure with time produced a strong airframe.

But cosmetically, there were obvious scars, so I went on YouTube and found a lot of videos on repairing gelcoat. One that stood out was a simple two-part video by Tap Plastics Inc., on Gelcoat Repair.

Now the guy on the video is a professional because it took me a number of coats of their product for me



The 7 meter ASH-25 SL. Lost, but an impetus to restore the 5.2 meter Nimbus 4DM and fly it again.

to cover up the cosmetic cracks in the inner panels and fuselage.

Although not perfect, the end result is quite beautiful. As you can see from the photo progression, except for the lack of decals, and some new paint on fuse and inner panels, you can hardly tell the plane was ever in a crash.

If you have a bird that you recently crashed, don't give up on it. Even if it has been sitting in a corner for a few months or years, you might be surprised that with a little effort you might be able to get it airworthy again.



The 5.2 meter Nimbus 4DM, ready for the finishing touches.

8:00'59.2

Chris Lee's Eight Hour Slope Flight

Text by Ken Trudeau, trudeaukgsj@aol.com with photos by Robert Samuels, ransamuels@hotmail.com

Before I left for Eagle Cliff on Sunday morning January 24th, I had heard Chris was going to attempt his LSF V slope flight possibly on Monday.

With the St. Louis area having over 48 hours of strong consistent westerly winds, an 8-hour flight could be

attempted. This has been Chris Lee's goal now for over a year.

Chris e-mailed me, wanting to know if I could be an LSF witness, if something should happen with Tony or Robert.

On Sunday I enjoyed the five hours on the hill flying several of my slopers.

When I returned home I had another e-mail from Chris that Tony could not make it. I knew I would need to charge my slopers as Chris reminded me I could complete my LSF III, 2-hour task. We would meet at 8:00 am.



It's 4:30 am and I am awakened by snow pellets hitting my bedroom window. By 7:30 I get my son off to school and call into work that I could not make it in today, explaining "I needed to help a friend out today" and left it at that.

I arrived at Eagle Cliff by 8:00 am, Chris is right behind me. We both dressed for a long day in our warmest winter attire. We begin getting our things set up at the hill front. Robert arrives with a grin on his face, the kind of grin that says "Chris is crazy." Freezing cold, high winds, snow flurries, eight hours...."He's crazy."

Let me take this chance to explain a little about this hill. Eagle Cliff is a hill new to Mississippi Valley Soaring Association (MVSA) since the Fall of 2009. Eagle Cliff as we call it, is Eagle Cliff / Miles Cemetery. Eagle Cliff / Miles Cemetery was established in 1806. In 1858 Mr. Miles had a Vault/ Mausoleum erected made of marble. The Vault was brought to America from Italy. Over the years maintenance of the cemetery was left to family and friends. In 1994, a group of volunteers was formed for the purpose of restoring and maintaining the cemetery. Sad, but much of the damage done to the cemetery is due to vandalism these days.

MVSA was given the privilege to fly our sailplanes from the hill, with each active member making a donation or volunteering a helping hand to the cemetery. My thanks go to Joe Beshar



with AMA who aided in helping us with the information needed to help obtain the site, and the patience and kindness that was given from AMA ILona Maine (Insurance and Safety).

It's 8:40 am and Chris has his 2-meter Crossover ready to go for the 8-hour flight. Chris launches his plane at 8:45 am and the clocks are set. The Crossover is a well built 2-Meter EPP slope kit made by Leading Edge Gliders. During the Spring of 2009 Chris decided to build the Crossover.

I decide to launch my 36", 10.25 oz, Slope Monkey to see how it would fly in 20 mph winds. Robert began the clock for my two hour flight for level III.

Keeping a good distance from Chris the whole time I was up, Chris couldn't resist coming down and joining me in some passes across the front of the hill. Chris and I began to feel the sharp winter bite of the forceful cold winds, and I decided to put on my face mask and goggles. Chris retreated into the vacant Vault and settled in for the other seven hours.

Opposite page: Chris at the start of the eight hour task. Ken's readying his Slope Monkey for the two hour LSF task.

This page: Chris moved into the cemetery vault to get out of the cold wind. Didn't fall asleep and did manage to come back out in time to land.





Above: Ken concentrates on flying his Slope Monkey.

Right: Yes, Chris is actually flying his Crossover!

The winds started to pick up and a hint of snow flurries in the air. Controlling the Slope Monkey was a full time job keeping the nose into the wind and keeping the speed. Having two servos in the wing I was able to quickly adjust the camber of the wing, and would rise vertically several hundred feet, my “up button.” At 1 1/2 hours of my flight I realized I could not get myself out of my snowmobile suit to relieve myself at the edge of the woods, with my hands in a transmitter glove. I would try several times but each attempt my plane was all over the place. I was now pacing and dancing in front of the hill. UGH! Half hour to go!

Robert was keeping me informed of my time left on the clock and checking up on Chris. Robert decided to get out his TL-50 Ritewing wing and take to the sky. We were all three up and enjoying the moment. Chris came shooting down from above to join us. But we shouted at him to get back up there, away from us. We didn't want to see his chance of eight hours end over horseplay. Chris was doing great.

Yes! Time's up for me, I land abruptly and dash away to take care of personal business. I come back to the hill to find Chris asleep. Nope, he was all laid back in his lawn chair bundled up working the lift. He has worked with his camber and

now is feeling more comfortable flying his Crossover.

Around noon club members are calling Chris on his cell to see how he is doing or they are calling Robert for an update. Chris has lunch, he accomplishes this task as easy as a circus clown attempts to please a crowd riding his unicycle and juggling all at the same time. Chris doesn't miss a beat.

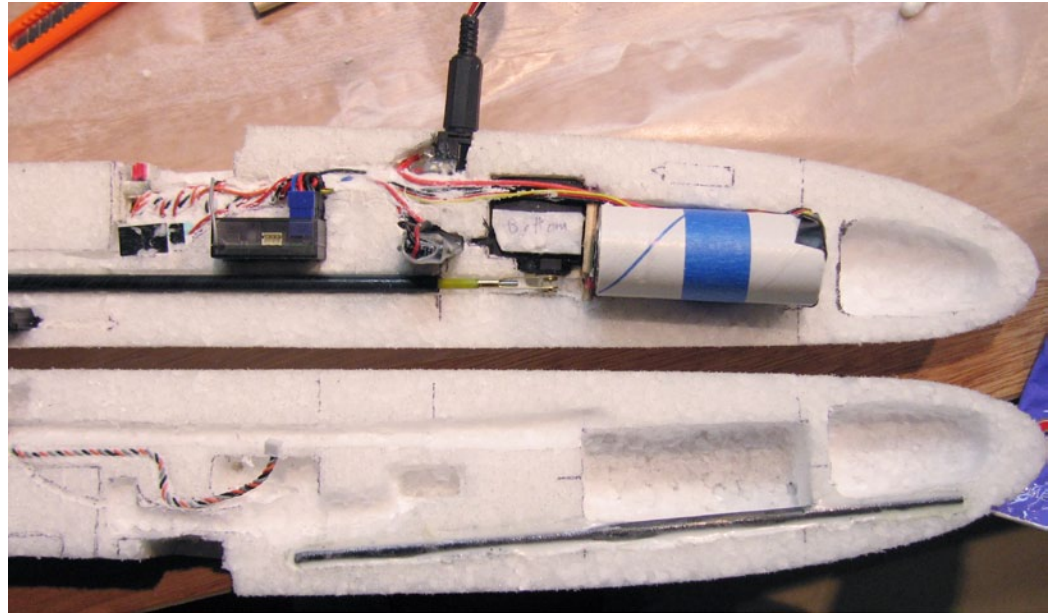
Robert and I take the opportunity to fly as much as possible. I break out the Ritewing IYF-44 and the TL-50 wings. Landings become the biggest challenge of the day due to the high winds and the rotors at the top of the hill with trees



Landing in the rocks at 8:00'59.2

lining three sides of the hill. Every time we did a traditional landing coming in from behind us the plane got caught in rotors and pushed us back into the trees or the Vault. Robert was starting to count the carnage, from snagging a tree branch or literally slamming into a tree... mostly me.

Thank goodness for EPP! Robert and I put away the wings and brought out our T-tail planes. We started to work with our spoilers. I dialed in spoilerons with my Thunder Storm. Robert dialed in more flaperons with his plane.



By 3 pm Robert was landing his plane safely within a couple feet of himself. I was still coming in too hot. Whatever we were doing was making us all laugh at our attempts. There were times I thought Chris had forgotten his plane was up. For Robert and me the day had gone in fast forward and it was almost over with. Chris was now down to his last hour.

Robert and I begin to pack things up. One of my planes would not be going home with me. IYF-44 stuck in a tree some 40' high. We tried but the plane wasn't coming down today. I would come back when the winds would change direction to help free it up.

Chris is down to his last 10 minutes and he is very high in front of the hill. We're

thinking how nice it's going to be to go home in a heated car. We talked of how others had landed just short of the 8 hours, Chris kept the height to the last minute. How would Chris land, he has not practiced, I was thinking.

Robert and I have the timers in our hand we're looking up at Chris's plane. He made it! That's all Chris had to hear and he pulled down on his throttle stick and his flaps were deployed, knowing Chris I'm sure he had crow programmed in. The nose was down, but the plane was moving fast. Chris started to circle over us. In the blink of an eye Chris corkscrewed it in right in front of the Vault, as we were running from Chris's side. We were all laughing hard by now.

Chris made his eight hour flight, with a landing to remember. Ya! Hoo!

What a great day I had with two buddies. Congratulations, Chris.

Crossover:

<http://www.leadingedgegliders.com/eppGliders_2M/2M_epp_Crossover.php>

Slope Monkey:

<<http://wyowindworks.com/slopemonkey.html>>

IYF-44 and TL-50:

<<http://ritewingrc.com/>>

Thunder Storm:

<<http://eatonairrc.com/home/thunderStorm.php>>

Opposite page —

Left: *The Crossover* in flight.

Right: Interior of the *Crossover*. Chris built the plane with ballast capability and shaped the space to fit an identical 2s A123 LiFe battery with the potential for this flight in mind.

Chris' Leading Edge Gliders *Crossover*

Ken Trudeau, Robert Samuels and Chris Lee at Eagle Cliff.



Tappanappa slope weekend

January 23-26 2010



Greg Potter, mrgregpotter@hotmail.com

Photos by Robert Gunn

January each year sees a large group of slope fliers converge on the Tappanappa slope south of Adelaide, in the Deep Creek Conservation Park. When there is a Southerly or South Easterly wind here there is nothing to disturb it between the slope and the Antarctic!

A special treat this year was to have four scale gliders built by Martin Simons from his own plans in the air at the one time. In Martin's own words the four models concerned were:

"A 1/4 scale Kirby Kite, first built and flown in 1983, several different owners and repairs since then but still essentially my model, with a few patches. Span 3.55 m, weight after completion was 3.38 kg. The wing loading was 4 kg.sq m. but it must be a bit heavier now than it used to be. This model is owned by Robert Gunn but was being flown by Greg Potter.

"A 1/4 scale PWS 101, first flown in 1989, won first prize at Constellation Club Scale Day in 1990, where it was also damaged in a mid air collision with a powered aircraft, but remained under control and landed safely. Also won at Waikerie Scale Model Meeting, 1991. Had a few adventures and repairs, now owned and flown by Chris Carpenter, extensive repairs and rebuild by Geoff Burfield. Span 4.75 m, weight on completion a fraction under 7 kg.



Martin preparing the PWS 102

The four pilots. Left to right: Greg Potter, Chris Carpenter, Martin Simons and Alexis Scott

“A 1/4 scale Condor 3, (my second model of this type), first flown in 1996. Now owned and flown by Alexis Scott. Span 4.31 m, no record of weight.

“A 1/4 scale PWS 102, (my second model of this type), first flown in 2009 after many delays. The flight last Sunday was only the second, previous was aero tow at Barossa Club, with ‘incident’ but only slight damage. It is slightly over the 7 kg limit but I have no other details at present. It needs some more work. Span 4.75 m.”

Martin also flew his recently completed 1/3rd scale Minimoa built from a kit supplied by CNC Modelbau.

Again in Martin’s words:

“It took me almost a full year of spare time to build, even though all the wooden ribs and frames, etc. were beautifully cut by computer-controlled router from 3mm poplar plywood. The metal parts in steel and light alloy were also supplied and absolutely precise, with every bolt and nut also supplied (metric threads of course). All the parts fitted together perfectly, as would be expected.

“In flight the Minimoa is very good, stable and easy to fly. The kit booklet gives a finished weight of 12 kg upwards. Mine scales 12.5 kg, so it’s not far off. The span is $17/3 = 5.666$ metres. Wing area is 214 sq dm, aspect ratio is 15.2. The wing profiles are Quabeck 3.5/14 and 3.5/15.”

The PWS 101, flown by Chris Carpenter, turns away from the slope



The PWS 101



Greg Potter flying the Kirby Kite



*Condor (top) flown by Alexis Scott and
PWS 101 flown by Chris Carpenter.*

The Kirby Kite





The Condor being flown by Alexis Scott.





Hütter 17

NX17HU

Gerry Wild, owner

Walk-around by Mark Nankivil, nankivil@covad.net

The Hütter 17 was the first sailplane designed by Wolfgang and Ulrich Hütter in 1934. As college students, the goal was to build a small and manueverable sailplane to be flown in the Alps near Salzburg, Austria, where they were going to school at the time.

The design goal was for a 17:1 glide ratio (hence the design's name) and the overall design is similar to other sailplanes of that era such as the Grunau Baby, Schempp-Hirth Wolf and a number of others and used a high, strut braced wing pylon mounted onto a hexagonal box cross section fuselage.

The airfoil was the commonly used Göttingen 535, a fairly thick (16%), high cambered (5.75%) airfoil, which was also used on the Grunau Baby and Wolf.

Performance was found to be quite good and the brothers went onto sell plans with many Hü 17s being built throughout Europe.

Photo by Gilles Auliard

Interestingly, a Google search will find photos and references in just about every country in Europe. Not long afterwards, the Hütter brothers went to Germany and worked for Schempp-Hirth, having a part in the design of the Göppingen 5 (a further development of the Hü 17 with a main wheel and windscreen) of which five were built, the Minimoa, Govier, the Hü 28 and later Hü 30, both continuing with the small, light and maneuverable design criteria.

After World War II, the updated Hütter 17b was developed and plans sold. This version had an enclosed cockpit and slightly greater wingspan/area.

The sailplane that this walk-around covers is owned by Gerry Wild and was photographed at the 2009 International Vintage Sailplane Meet held at Harris Hill in Elmira, New York.

In Gerry's own words....

"My particular Hü 17 was built by John Lee of the UK. It's kind of a complicated story, but I was planning on building one myself, and I obtained drawings from Chris Wills, the president of the VGC in England. Chris recommended that I contact John Lee, as he had recently built two examples of it. I called John, and we talked for quite awhile. He gave me many recommendations, and some good advice. He told me that a friend named William Stoney had commissioned John to build one for him, and John decided to just build two of

them and keep one for himself. William Stoney was an Irishman, a commercial pilot living in Italy. He built them in 1990, apparently completing both of them in one year!

"Anyway, several months later I saw an ad on Wings and Wheels for an Hü 17, and the contact info was an email address in Italy. Out of curiosity I contacted the seller, and it was William Stoney, who informed me that he wasn't selling his, but his friend's who had suddenly passed away. John Lee died of stomach cancer, and went rather quickly. William told me a lot about John. He was a rather eccentric individual, with a great reputation for his work. He had designed about seven of his own ultralight gliders, built the two Hütters, restored a few Olympias, and then built the wings for the Colditz Cock replica and did the test flying of it. (If you are not familiar with that story, you would find it very interesting). We talked about it, and after seeing several pictures of it, and talking with John's widow Bev, I decided to just buy John's glider instead of building my own.

"As you can see, John was an accomplished builder. It's a beautiful little ship, and it's very interesting to fly. It's built of Hemlock and Birch plywood. As light as it is, I have learned that I feel much more comfortable flying it only on calm days. When it is too turbulent, it gets tossed around like a leaf, making

it not too much fun! But when the conditions are right, with good lift and calm winds, it's a blast! It climbs like crazy. Since it flies at 35mph, you can really get into the core of a thermal.

"At IVSM 2005, I was consistently at the top of every gaggle of gliders. Nobody could climb as high as me. Of course when we got to the top, everyone else just left me behind. The glide ratio is probably only about 14:1, not the 17:1 that the Hütters hoped for. With the old Gö 535 airfoil, which is high lift, but high drag, you lose a LOT of performance when you increase speed. It's pretty much a one speed glider, 35 mph!

"I've seen old articles that say it's safe to aerotow up to 75 mph, but that seems high to me. I don't like to go more than 65 on tow, and slower is even better. It feels a little "frantic" at high tow speeds. Another article stated that it was stressed to 11 g's!! Not sure if I believe that, but it was supposedly capable of aerobatics, and I have talked to several people that have looped them. I've done a lot of wingovers in mine, but there's no way I could fit into it with a parachute, so I haven't tried to loop it. Shame... I'd love to do it.

"Let's see.... what else? Being an old design, there are a few little quirks that you wouldn't find in a modern glider. "Nothing serious, though. The rudder is effective, but there is little feel to it, probably because of its short coupled

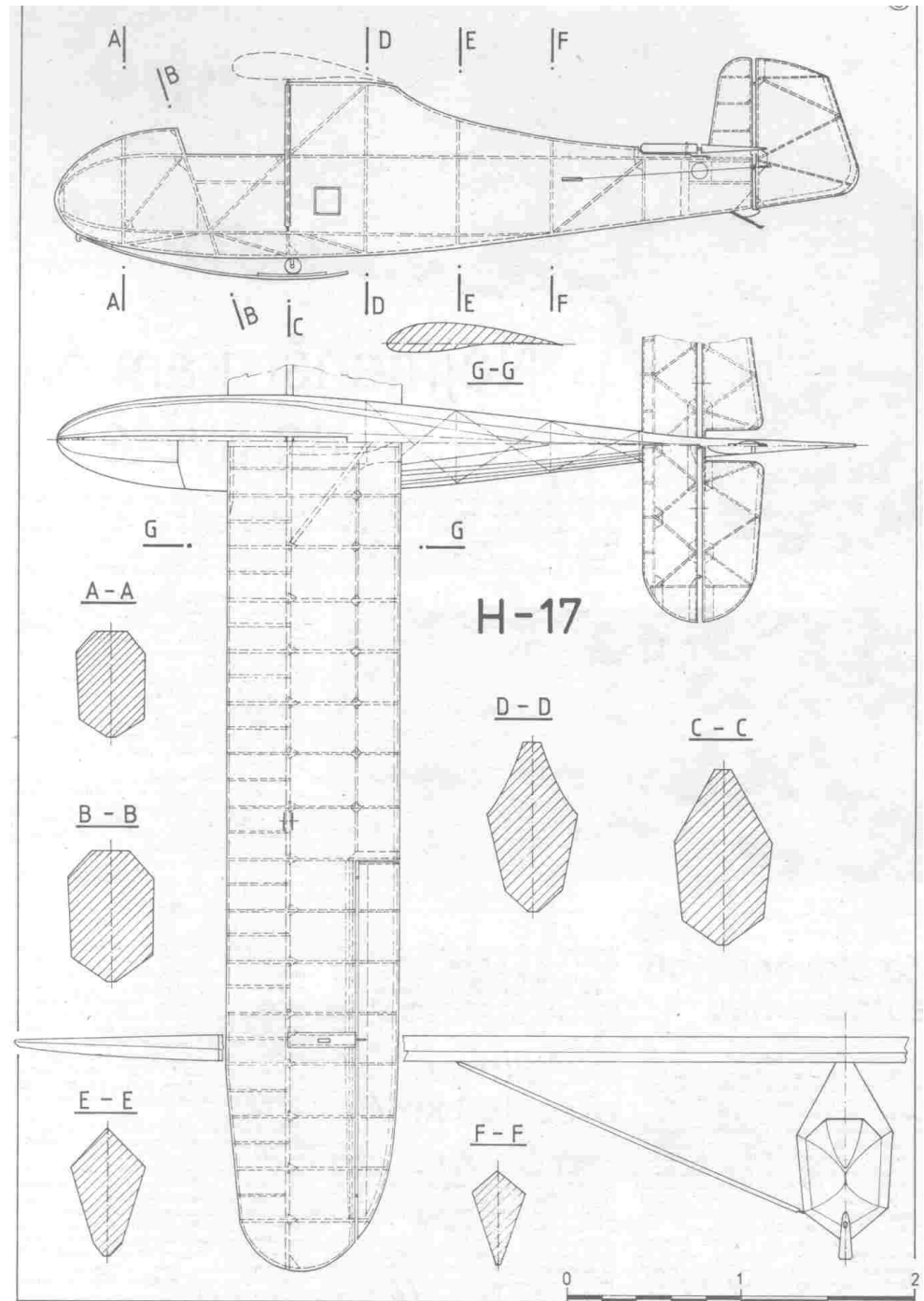
nature, and the slow flying speed. The coordination seems a little strange at times, but mostly in turbulence. Again, being so small and light, and open cockpit, I think one feels every little gust in thermals, and it affects the glider more than others.

“I guess the thing I am most proud of is a Silver Distance flight I made in it back in 2005. I did a 40 mile cross country flight in it, using only thermals. It took me just under two hours. I felt better about that than my 300K Diamond Goal flight in a modern glider. To complete a Silver Distance in a low performance 1934 design was a thrill.”

1/3rd scale plans for the Hütter 17 are available from the Cliff Charlesworth series and the full scale plans are even available from the Vintage Sailplane Association. As you'll notice in Gerry's narrative and in the photos, the Hütter 17 can be a rather snug fit for us bigger guys! Another source for plans that one could scratchbuild a model from is the Scale Soaring UK website - take a look at:

<http://www.scalesoaring.co.uk/VINTAGE/Documentation/Hutter-17/Hutter-17_documentation.html>

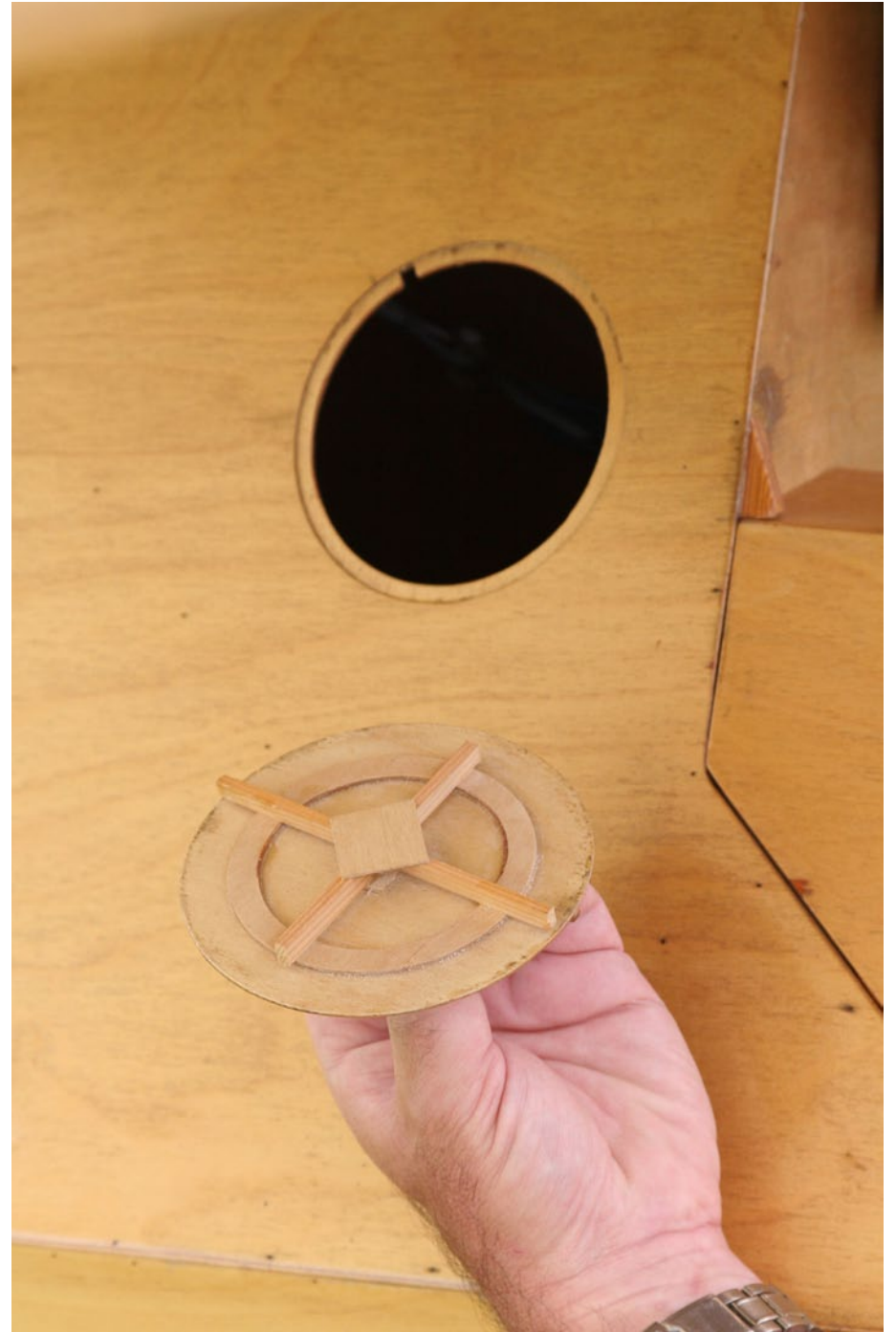
Wingspan - 31.8 ft./9.70 meters
 Wing Area - 99 sq. ft./9.20 sq. meters
 Aspect Ratio - 10:1
 Fuselage Length - 15.2 ft./4.63 meters
 Max. flying Weight - 348 lbs/158 kilograms
 Minimum Airspeed - 54 km/h
 Airfoil - Göttingen 535,
 see <<http://www.ae.illinois.edu/m-selig/ads/afplots/goe535.gif>>
 Glide Ratio - 17:1 (Actual is closer to 14:1)







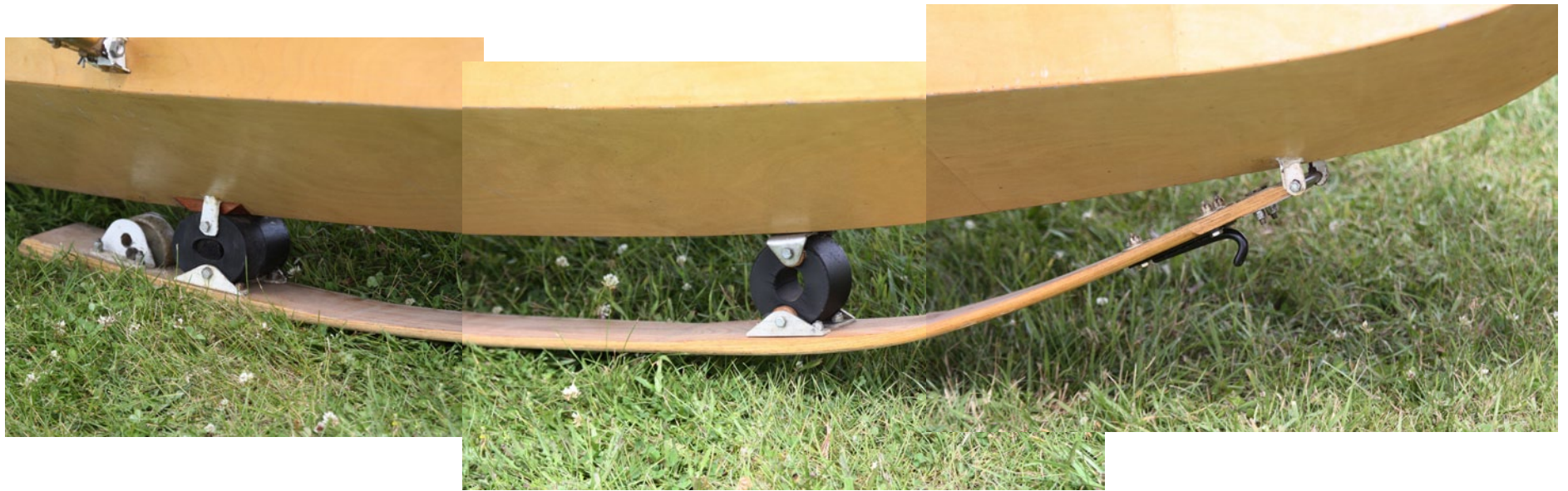
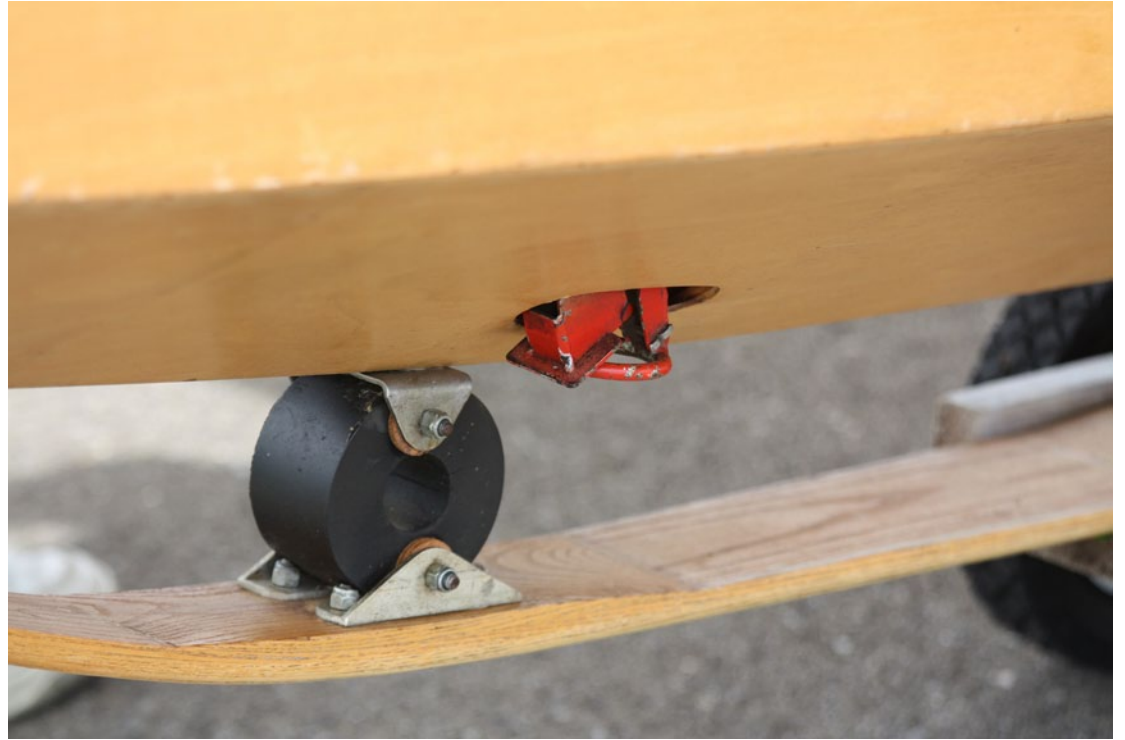






March 2010











Gilles Auliard





RC
SD

Man-on-Man Contest Spreadsheet

Tony Estep, tonyestep@yahoo.com
Mississippi Valley Soaring Association
<http://mvsaclub.com/mvsa/docs/mom/MOM_MVSA.xls>

This spreadsheet will manage a complete seeded-MOM contest.

It contains no macros, database lookups, executable code, or specially-defined functions.

It has been used for 50-man contests, but the sheet provided here is stripped down to minimal size so you can figure it out more easily.

It computes as the times and landing scores are entered. When all flyers have completed a round, it normalizes their scores and ranks them. (As delivered, it adds the landing score before normalizing. If you want to change that, modify the formulas in columns F and G.) It maintains a ranked list of pilots at all times, self-updating and self-sorting. This list forms the basis for the determination of flight groups for the upcoming round.

In order to use the spreadsheet, you must have some knowledge of Excel. Here's what you need to know:

To have more than two flight groups, you have to know how to copy cells.

To have more than three rounds in a contest, you'll have to know how to copy sheets.

To have more than seven flyers in a flight group, you'll need to understand how the

spreadsheet works so you can add some extra rows between flight groups.

To figure out how the spreadsheet works, start on the Round 1 page and follow the contest through to the end.

Normalized scores are created in column N. Then flyers are ranked by normalized score in column O. Those standings are then used to create flight groups for the next round.

The spreadsheet has no provision for frequency conflicts; if certain flyers can not be in the same group due to conflicts, manual intervention will be necessary.

Now move on to Round 2. The names and scores of the flyers have been picked up from the previous page (columns A and B). As the round is flown, times and landings are entered, and the process is repeated.

Round 3 is the same as Round 2, except that the contest ends after 3 rounds and the normalized final scores are in Column P.

To set up flight groups of up to 7 flyers, just add more names and a starting score of 0 on the Round 1 page, and copy the formulas from the filled-in rows. Then (VERY IMPORTANT) put the

numbers 1,2,3,4...n in Column M! If you leave out this step, the sheet won't work.

You can also add flight groups by copying formulas down from the two existing groups. Remember to fill in Column M for the new groups too!

Once Round 1 looks okay, copy the formulas down on other pages to fill in the needed rows.

To add more rounds, make a copy one of the sheets; you'll have to change the formulas in Columns A and B to refer to the correct previous round.

The only other setup needed is the Target Time (Column D, Cell D2, D12, etc.). In the sheet supplied, this is 9.00 (9 minutes).

When entering times, enter minutes, seconds. In other words, 9 minutes 4 seconds is 9.04; 9 minutes 53 seconds is 9.53 etc.

This spreadsheet DOES work, and it WILL work if you input the names, times and landings as described and copy the formulas correctly when adding rows. It is supplied as-is with NO support and NO warranty.

Take the time to understand it, and it will make your MOM contest management a breeze! Good luck!

Excel File Edit View Insert Format Tools Data Window Help														Sheets		Charts		SmartArt Graphics		WordArt	
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T		
FLIGHT GROUP A				0.1	UNLIMITED																
		ROUND 1	7.00																		
Score	Name	Time	Landing	Name	Points	Norm	Cum	Seconds	Place												
0	A	7.03	93	A	417	1093	1093	423	1	1	1	1093	A								
0	B	6.55	82	B	415	1077	1077	415	5	21	2	1091	G								
0	C	6.20	91	C	380	1002	1002	380	7	12	3	1089	E								
FLIGHT GROUP B				0.01																	
		ROUND 1	7.00																		
		Time	Landing	Name	Points				Seconds												
0	D	0.53	66	D	53	193	193	53	9	23	4	1082	I								
0	E	7.01	89	E	419	1089	1089	421	3	2	5	1077	B								
0	F	6.55	86	F	415	1076	1076	415	6	13	6	1076	F								
FLIGHT GROUP C				0.001																	
		ROUND 1	7.00																		
		Time	Landing	Name	Points				Seconds												
0	G	6.59	91	G	419	1091	1091	419	2	3	7	1002	C								
0	H	6.51	0	H	411	981	981	411	8	22	8	981	H								
0	I	6.55	92	I	415	1082	1082	415	4	11	9	193	D								

MOM Spreadsheet by Tony Estep 2005-2007
 tonyestep@yahoo.com
 314-603-8270

This spreadsheet may be freely distributed
 provided credit is given to Tony Estep and
 Mississippi Valley Soaring Association



2010 RAF HAWK DISPLAY SCHEME

<<http://www.globalaviationresource.com/reports/2010/2010hawkdisplayscheme.php>>

Global Aviation Resource is delighted to exclusively reveal the chosen colour scheme for the 2010 RAF Hawk display aircraft.

After months of planning, design and consultation with colleagues and aviation enthusiasts, Flt Lt Tom Saunders has given GAR the green-light to publish the paint scheme that he has chosen to adorn his 2010 display airframes. The scheme has been approved by senior commanders at RAF Valley and subject to some final administration, the paint shop will start work on the two jets within the next few weeks.

A variation on those which have been the subject of lively debate on the internet for the past few weeks, the scheme commemorates the 50th Anniversary of 4 FTS (Flying Training School) at RAF Valley. Special display schemes have become a long-standing tradition for the solo Hawk display and some older readers may even recall the Union Jack tailed jets which displayed on the airshow circuit as far back as 1986. There

have been many variations over the years but the Union Jack itself has featured on many of the Hawk's display schemes and that chosen for 2010 is no exception.

Speaking exclusively to Global Aviation Resource, display pilot Flt Lt Tom Saunders said:

"I'm delighted to finally confirm the proposed colour scheme for the aircraft and I'm confident that the finished product is certain to turn heads this season.

"The 50th anniversary of 4 FTS is a hugely significant one for everyone at RAF Valley and my job now is to ensure that my display shows the artwork in its best light and also pays a suitable tribute to everyone involved with 4 FTS over the past half century. It's a big responsibility but one that I am looking forward to meeting.

"It's a very special privilege to be able to design your own paint scheme and it has been very difficult to find something original that lives up to the schemes we

have seen in previous years - especially Matt Barker's 2009 scheme.

"I wanted my design to echo the red white and blue that was seen on the 1970s and 1980s Hawks whilst remaining modern and exciting. I was keen to ensure that there was something special to look at from every angle and you will also notice a tribute to the unofficial emblem of 208 Squadron - the 'Eye of Horus' or 'Flying Shufti.' It is a shame to lose the logo of the RAFBF this year but we will continue to dedicate our fund raising effort to the worthy charity."

Global Aviation Resource recently published a lengthy feature on a day in the life of 208 Squadron at RAF Valley after a visit to the Station in December; a feature which took a close look at Tom's 'day job,' namely that of an instructor on the RAF's training programme for future fast jet pilots. We're now looking forward to following Tom's progress throughout the 2010 airshow season and wish him and the members of his team all the best for a successful year.



Global Aviation Resource would like to thank Flt Lt Tom Saunders and Tom would like to thank Jo Gough, design consultant for her ideas and Computer Aided Design imagery.

Please visit the Hawk Display website at <http://www.rafhawkdisplay.com> for more news and pictures.



Virtual 360° at <http://rafhawkdisplay.com/downloads/hawk.mov>



Above: Piet Rheeders sent us this XFLR5 screen shot of the "Thulane" F3X design. A few years back Evan Shaw had named his own design F3J 'ship Emoyeni. The two designs are namesakes of Thulane and Emoyeni, a mating pair of Black Eagles at Roodekrans, Krugersdorp, South Africa.