Radio Controlled Soaring Digest

August 2012 Vol. 29, No. 8

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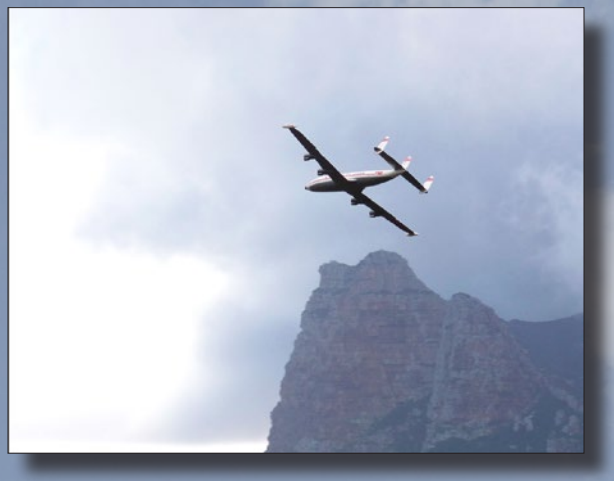

Front cover: Kevin Farr's Constellation Super G flying at the Three Oceans Slope Soarers 3rd annual Black Eagle Trophy PSS Festival 2012, Cape Town, South Africa. Build photos and commentary will appear in a future issue of *RCSD*.
Photo by Schalk Human
Kodak Easyshare Z1012 IS, ISO 200, 1/500 sec., f5.0

Back cover: Rocky Stone captured his Dream-Flight Weasel and Alula in this 12,280' elevation pastoral setting on June 23rd at Glacier Ridge, Colorado.
Panasonic DMC-ZS6, ISO 80, 1/00 sec., f5.6

R/C Soaring Digest

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Managing Editors, Publishers B² Kuhlman

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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 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.

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In the Air

Contemporary digital cameras create images that are at least double the size (four times the number of pixels) of what is presented in *RCSD* on a full page. For this reason we've sometimes received requests from individual readers for original full size JPGs. Want a full size copy of a photo in this issue? Simply drop an email message to us at <rcsdigest@centurytel.net>.

FAI has received the following Class F (Model Aircraft) World record claim:

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Claim number : 16573
Sub-class : F3 Open (Radio Control Flight)
Category : Glider
Type of record : Distance to goal and return: 158
Course/location : Boulder, CO (USA)
Performance : 46 km
Pilot : Skip Miller (USA)
Members : Remington Cody (USA) operated by
Date : 01.07.2012
Current record : 39.1 km (16.04.2005 - Gary B. Fogel, USA)

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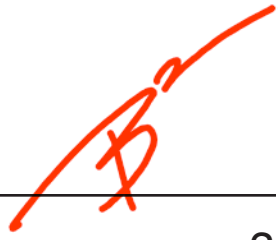
The details shown above are provisional. When all the evidence required has been received and checked, the exact figures will be established and the record ratified (if appropriate).

Time to build another sailplane!



THE BLACK EAGLE TROPHY F3B FESTIVAL 2012

Hosted by Two Oceans Slope Soarers
Cape Town, South Africa

Text by Kevin Farr, kevin@fvdv.co.za
Photos by Schalk Human, Andy Imrie, Malcolm Riley and Kevin Farr

For a third year running, the Black Eagle PSS Festival was once more hosted by Two Oceans Slope Soarers at the Chapmans Peak site.

With a field of 23 entries, all signed up and paid up, we were once again hopeful that mother nature would bless the event with stunning wind as this year we were really intent on hosting a festival of flight, from the humble Combat Class right through to the Expert Class.

There were to be two scratch-built entries in the Expert Class and for these beasts to fly we would require some sort of decent wind to say the least.

Roll on the Saturday morning of the 23rd June and light wind with clouds started the day out, but as the wind increased the clouds cleared and the day turned peachy. With Jeff Steffen as Competition Director, Bill Dewey as the flight line and safety officer, we were all set to go!

There are four classes in total should one want to have a competitive edge to the format other than a fly-in festival.

Up to 55 aircraft in the pits. Photo by Malcolm Riley

Opposite page: Warbirds in front of Sentinal. Photo by Andy Imrie

Combat Class is designed around getting anything of foam and correx on the table and trying to get as close as possible to the real thing.

The next is Sportsman's Light class for planes under and around the 20 ounce wing loading, hence lighter scale kit planes.

The next is the Sportsman's Heavy class, for those that have a 35 ounce wing loading and require just that bit more of a puff to stay in the air.

The final class is the Expert Class. Designed around stimulating scratch building as part of gliding, we have limited this class to only scratch-built aircraft of any size and of PSS nature. All this is intended to inspire and nurture scratch building well into the future, and seems to be doing just that, inspiring!

A full days judging for the static side started at 9 AM with the Combat Class first up in front of the two judges. Herbie Newton and Nic van Rensburg took their time for each of the models and great credit to them for the serious nature that they approached the entire judging process from class to class. Following this the contestants had a two minute expression session in front of flight judge Kurt Macrill, just to finalise those important positions.

Next up was the Sportsman's Light Class which Dave Greer, all the way from Durban, was only too happy to enter with his newly acquired foamy ME 109.

Then onto the Sportsman's Heavy Class with all the ARF kits and heavy hitters as well as a very well presented foam Blue Angels balsa jet kit, compliments of Ryan Matchett, showing that balsa can indeed be a very successful building tool. There's actually no reason that a foam scratch-build cannot in fact enter the Expert Class next year, which I have heard may well happen.

Finally, Expert Class was hauled in front of the judges and this year the class contained two scratch-built entries. A two meter 7 kilogram Hawker Hunter built by Hans van Kamp and a 2.3 meter 5 kilogram Super Constellation airliner built by Kevin Farr. Both these had stunning presence and took an incredibly large effort to build by the two entrants. With all the relevant documentation in place the judges had a good scan of the two beauties.

All the while the flying rounds took place in the background, as well as general flying slots that saw up to 17 foamy fighters airborne at the same time, resulting in a few tangles, a few tumbles, and a few fetches from the thick fynbos. All the while fun and laughter rolled through the slope as slope camaraderie ruled supreme, even if it involved a long fetch or two. Andy Emerie was all the while taking those important photos of those classic moments throughout the day.

There was a presentation done to the Percy Fitzpatrick Fund of R 2000-00, as our involvement in the protection of the Black Eagle is part and parcel of the slope scene here in the Cape, and is part of the initial reason for the creation of the event.

In the end the conditions never did get strong enough for the Expert Class to fly, so the day ended and all and sundry headed to Dixies Restaurant for an evening meal.

Sunday dawned windy and wet as predicted. For the first few hours the rain held off, but eventually it moved in and rained out the event, as is likely here in the Cape in the dark of winter. The entire crew retired to an eatery establishment in Hout Bay and the prize giving took place.

Christo Le Roux took the Foamy Class with a well presented P-51D Mustang, followed by Dave Greer and his Me-109, and third position to Tim Watkins Baker and the K61 Hein.

Sportsman's Light was won by Dave Greer with the Me-109, second Anton Benning and his Impala MB 326 and followed in third by Bruce Southwood and his Sabre F-86.

Sportsman's Heavy class was won by a happy Christo Le Roux and his P-40 Warhawk, followed by an ecstatic Ryan

Matchett and his foam A4 Skyhawk and third Malcolm Riley with the impressive and heavy D-C3 Dakota.

Expert Class was won by Kevin Farr and the Constellation Super G with Hans van Kamp and the excellent Hawker Hunter in second place. Once again a huge thank you has to go out to the more than generous sponsors who allowed us to offer an incredible range of prizes to each and every entrant in the festival.

Thanks to the following fantastic sponsors:

AB Models
AMT
Aerontec
Chris Leal
Dixie's Restaurant
Hobby Warehouse
InterMet Africa
Kevin Farr
Proficient Packaging
RC Hobby Shop
Southern Hobbies
Traplet Publications

After the presentations most headed home, but for a band of six slopeheads who could simply not get enough and ventured once more up the hill, stood for 45 minutes in the rain drawing up plans in the ever increasing mud, and waited for a break in the weather. Finally the rain let up, the skies opened a fraction, and the wind just plain howled.

Three maiden flights lay on hand...

Steve Meusel was first in the air with the 6 kilogram Bearcat kit that once it had a good head of speed flew beautiful and steady. Kevin Farr's 5kg Constellation flew next, which after a somewhat hairy launch, very quickly settled into a surprising pace that crossed the sky somewhat quicker than one would want a scale airliner to do. Then finally to wrap up the day Malcolm Riley put out the 9 kilogram DC-3 Dakota and boy was that a treat for all to see as this magnificent beast took to the air as sturdy as the real thing.

In the end it was the perfect way to cap off the the Black Eagle Trophy PSS Festival 2012. Well done to one and all for a fantastic and memorable experience of slope soaring excellence, to the judges for their time, to the caterers for their sustenance, and to the sponsors who helped to make the event such a success.

Andrew Simmons accepts the Percy Fitzpatrick donation. Photo by Andy Imrie

Above: Awaiting judging. Photo by Kevin Farr

Right: Herbie Newton and Nic van Rensburg doing the static judging. Photo by Andy Imrie

Dave Greer and his Me-109. Photos by Andy Imrie

Steve Meusel and his Bearcat. Photo below by Malcolm Riley, others by Kevin Farr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Above: Fevin Farr and his scratch-built Constellation Super G. Photo by Andy Imrie

Opposite page: Steve Meusel's Bearcat sits next to one of the several Impala models present. Photo by Andy Imrie

Above: Kevin Farr's Constellation Super G ready for launch. Photo by Malcolm Riley

Right: Drinks are served! Photo by Kevin Farr


TRANS WORLD AIRLINES
TWA

Hans van Kamp and his scratch-built Hawker Hunter. Photos by and Photo by Andy Imrie


J-4102

A P-51 Mustang makes a pass in front of the crowd. Photo by Andy Imrie

One of the Imapalas comes in for a close pass. Photo by Andy Imrie

An Impala in the air and being retreived.
Photos by Andy Imrie

Above: Two of the warbids line up for a run. Photo by Andy Imrie

Opposite page: Malcolm Riley Flies his DC-3 down the valley. Photo by Kevin Farr

Above: A gaggle of warbirds tighten up the formation. Photo by Andy Imrie

Opposite page: What a place to hold a PSS Festival! Photo by Kevin Farr

Product Review

Winged Shadow Systems

Sky Limit altitude limiter/timer

Larry Dunn, ledunn@centurytel.net

I was fortunate enough to be asked to do a review on the new Sky Limit altitude limiter from Winged Shadow Systems. <http://www.wingedshadow.com/skylimit.html>

The basic purpose of the Sky Limit is to limit the altitude that an RC model will reach on launch. It does this by monitoring the models altitude and/or the motor run time. Once the model reaches the programmed altitude or the end of the run time you have selected, it will cut the motor power to the level you have pre-selected during the setup.

Those of us flying electric models will likely want the throttle to be cut to zero, but the Sky Limit allows for the throttle to be re-set to any level you want once the altitude or run time is reached. That means it can also be used on glow powered models where you would want the motor to be set to idle rather than cut off completely. That's just one example of the flexibility the Sky Limit offers which allows it to be used in many different ways. Anything from ALES and F5J competitions to sport flying to inventing new contest formats.

The Sky Limit consists of two separate parts, the airborne unit and a programmer. You don't need a PC to program the Sky Limit but you do need the programmer. It cannot be programmed, as some other limiters are, by moving the transmitter sticks or with a PC. However, one programmer can be used with any number of airborne units. So for example, a club could order as many airborne units as desired and just one or two programmers to share between the club members.

One of the things I like best about the Sky Limit is that the programmer can be used in the field to get an immediate read out of the launch altitude and maximum altitude of your last flight as well as to verify or change settings.

One note on Launch Altitude - the Sky Limit records your launch altitude at a point 10 seconds after the motor cutoff. This is to allow time for any zoom to be included in the reported launch altitude. If you're flying a low powered, light weight model like my Mirage that has essentially no zoom, the recorded launch altitude may be off to one degree or another depending on how well you handle the motor cutoff. For example, if you stall the model when the motor cuts off, the recorded launch altitude may be lower than your actual peak launch altitude if it takes you more than 10 seconds to regain any altitude lost in the stall. On the other hand, if you launch into some serious lift, the reported launch altitude may be a good bit higher than the actual motor cutoff point. For the vast majority of people this won't be an issue.

I'll list some of the main programming options and briefly go over each one.

Altitude limit – adjustable from 50 ft to 9999 ft or 15 meters to 3050 meters AGL. You can select a read out in feet or meters. Note that the cut off altitude is AGL. At my field, I set up my model, power it on, and then climb a shallow hill to get to the launch point. The Sky Limit sets its zero point when its first powered on, so in my case the cut off altitude is relative to the place where you power the unit on and not the place you launch from.

Time limit – adjustable from 5 to 9999 seconds. Not much more to say about that except that you have the option to use the altitude limit or the time limit or

both together. For example, in an ALES contest you would set both, typically 200 M for altitude and 30 seconds of motor run time. For an F5J type contest you might only use the altitude limit. For some other LMR type events you might only use the time limit.

Motor Restart on/off and Safety Restart on/off. You have the option of allowing motor re-starts or not. If you allow restarts, the motor can be restarted any time the model is below the preset altitude cut off point. As an added safety feature, if you turn restarts OFF, the programmer will give you the option of selecting an additional safety restart option. This safety restart is only available when the model is below 50 feet or 15 meters. You have the option of turning this safety restart off or on. This allows you to totally eliminate any possibility of restarting the motor. A feature that may be important to some pilots in certain contest formats.

Anti-zoom feature. This is another optional setting designed to prevent your model from zooming significantly beyond the preset altitude limit. Many modern, hi powered sailplanes are capable of zooming well beyond the altitude cut off point. This feature is intended to prevent that from happening. In essence, it will cut off the motor before the model reaches the programmed altitude. You can program exactly when this early cut

off occurs allowing you to fine tune the final altitude the model reaches.

This will typically require you to fly several test flights trying different settings on the anti-zoom. You can use the programmer after each flight to get a read out of the launch height and increase or decrease the anti-zoom factor as needed until you are getting the desired launch height. I did my test flights in a relatively low powered Mirage. I doubt my zoom is more than a few feet at most. Never the less, I was able to play with the anti-zoom settings to lower the launch height as desired. Of course, you could also just set the target launch height lower and achieve the same effect.

Installation and setup of the Sky Limit is easy and very straight forward. You simply plug the Sky Limit in between your ESC and receiver. Then plug the blue plug into the programmer and you're ready to adjust the settings to fit your needs. The Sky Limit is small enough to easily fit into even very tight fuse spaces. It's light enough to be no problem as far as weight and balance.

When I first received the Sky Limit, I decided to see how difficult it was going to be to use the programmer. To that end, like any "real man" I decided to put off reading the instructions other than checking to be sure which plug went where. The blue plug goes to the programmer. The Sky Limit circuit board

Final screen with anti-zoom off

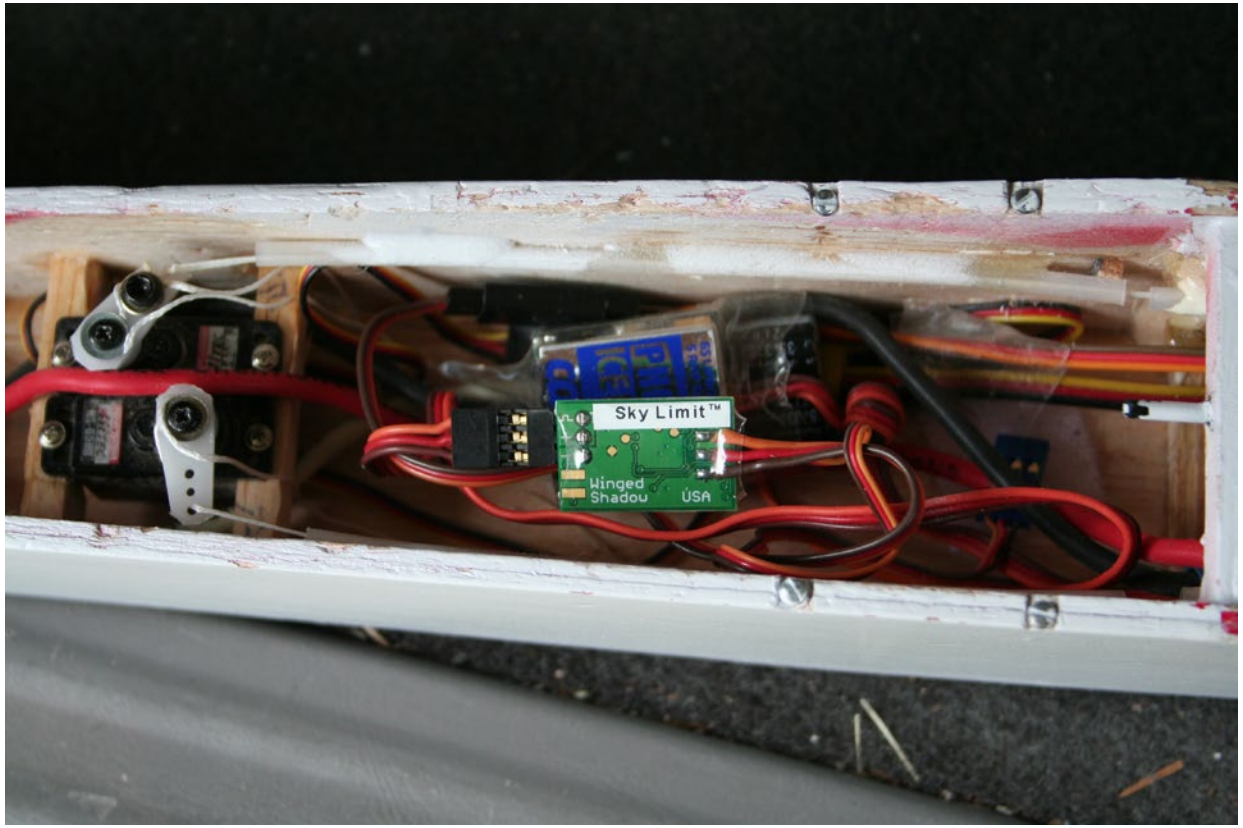
Final screen with anti-zoom on

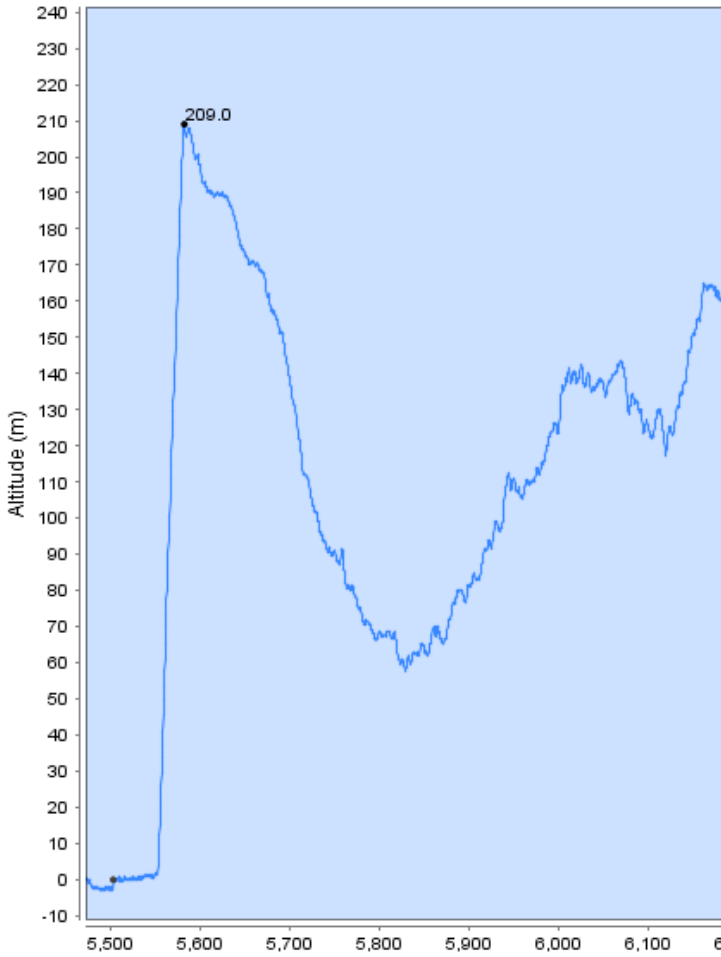
Setup with Throttle to Idle turned on

has male ends which plug into the esc receiver lead and a standard servo plug which goes to the receiver.

So with everything connected, I applied power and began randomly pushing buttons. It took me a good 15 minutes of fumbling around before I started to get a handle on how the two buttons work together to move through the various menu options, make changes and select options. Finally, with a mildly bruised ego, I read through the instructions – which are very clearly written - and discovered that it was actually fairly simple to operate the programmer once you knew how to do it correctly! After less than a day of using it in the field, trying various options and playing with different settings, it was very easy. It takes just seconds to change the target altitude or time limits or to get a readout of the launch height and max altitude for the previous flight.

In order to test the accuracy of the Sky Limit, I did a number of back to back flights alternating between the Sky Limit and a CAM altitude limiter from Soaring Circuits. I used an Open Altimeter installed in the Mirage to record the launch heights of the two limiters. Over about two dozen launches, the average launch altitude recorded was approximately 210 meters for the Sky Limit and 211 meters for the CAM. The highest launch with the Sky Limit





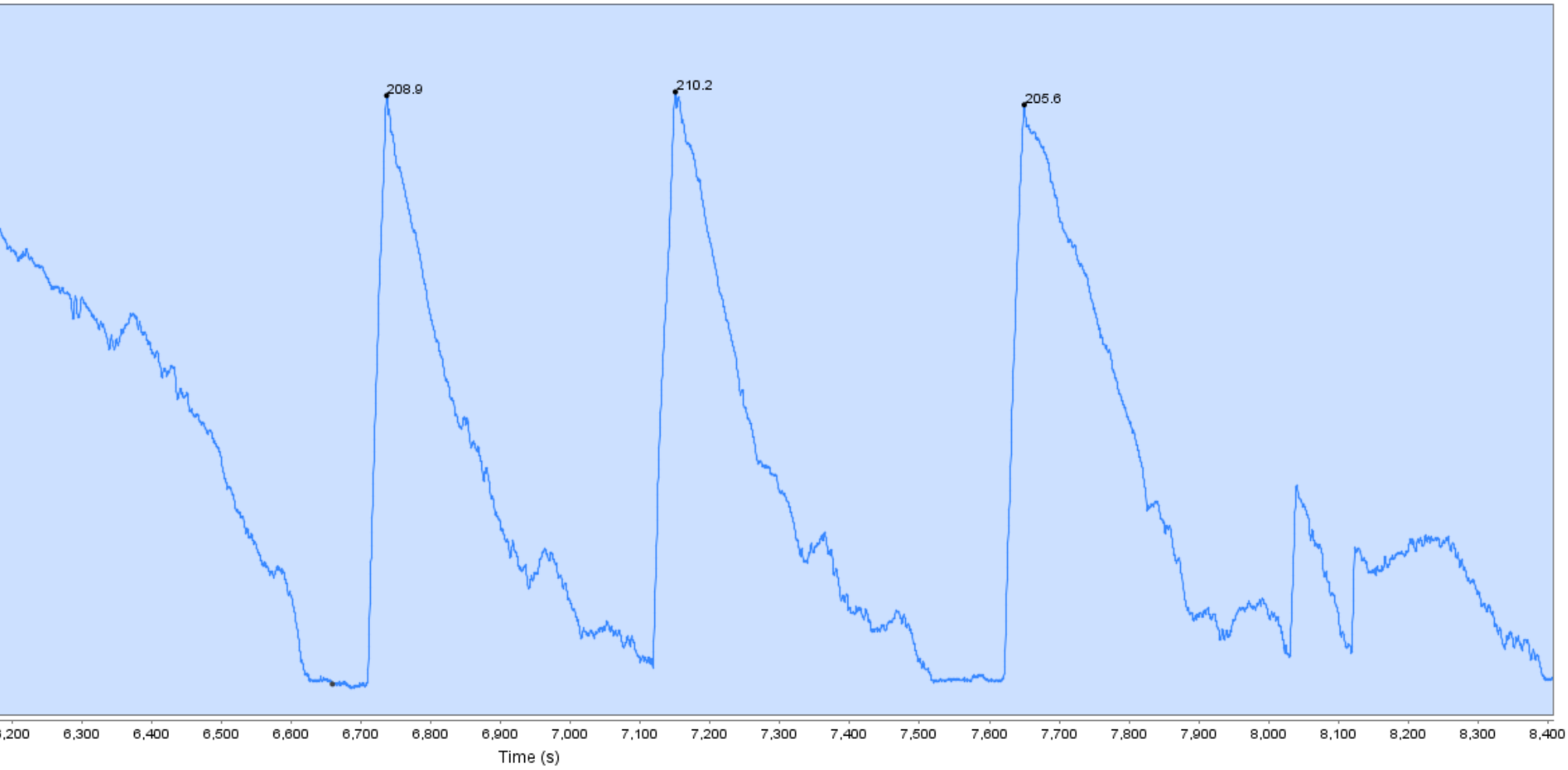
was 218 meters and for the CAM 216 meters. The lowest launch for the Sky Limit was 197 meters and the CAM was 195 meters. I compared the motor run times to the time recorded by a Castle Creations ICE Lite 50 ESC. Both the Sky Limit and the CAM were dead on for motor run time as reported by the logger on the ICE. In other words, both units give the same launch height and run time for all practical purposes within the limits of my testing ability.

I've been flying with the Sky Limit now for several weeks. I've used it in one ALES contest so far and I am very impressed with its flexibility and ease of use. It might take you a little while to master the programming (RTFM for sure!), but the flexibility and options it offers more than make up for that. The ability to get immediate readouts of launch and max altitudes in the field is especially nice for those who don't have a recording altimeter in their models already. If you are in the market for an altitude limiter for ALES contests I highly recommend you give the SKY Limit serious consideration.

A note from Winged Shadow Systems:

ALES -- The Sky Limit is approved for League of Silent Flight LSF/AMA Altitude-Limited Electric Soaring (ALES) contests.

F5J -- The CAIM/FAI F5J Working Group recently created a detailed specification



for F5J altimeter/timer devices. Once formally adopted, only devices meeting this specification will be allowed in official FAI competitions. An important requirement in the specification is that devices have no configurable settings or adjustments. This means that the device cannot have any other capabilities or features. The Sky Limit is designed to be useful in a wide variety of applications and has many features and adjustments. Therefore, while the Sky Limit can be used in casual F5J-type contests and practice, it will not be approved for future FAI-listed events.

Winged Shadow Systems
<http://www.wingedshadow.com/skylimit.html>

Sky Limit and Programmer	$54.90
Sky Limit Airborne	$39.90
Sky Limit Programmer	$24.90

Reducing the cost of flying sailplanes
Research Project - Part 2

An open source option

Ed Anderson, aeajr@optonline.net

Last month I did an article about upgrading 72 MHz sailplane radios to 2.4 GHz. This offers an option for people who are happy with their current sailplane radio to stay with it while moving to 2.4 GHz. It also offers a potentially lower cost entry point for new pilots buying their first sailplane radio. If you missed it, download the July issue of *RCSD* from <http://www.rcsoaringdigest.com/pdfs/RCSD-2012/RCSD-2012-07.pdf >. Or take a look at the April edition of the LISF Newsletter, the April ESL Newsletter or the Radios forum of the Eastern Soaring League Website.

ESL Newsletters
http://www.flyesl.org/forums/forum.asp?FORUM_ID=2

If you are still learning about sailplanes and sailplane radios, this article on the Eastern Soaring League web site might be of interest. It may help you understand what I consider the elements of a sailplane radio.

Selecting a sailplane Radio – What to consider
http://www.flyesl.org/forums/topic.asp?TOPIC_ID=223

It has been common for our newer members to purchase an entry level radio, like a Spektrum DX6i for its lower cost only to spend again for a sailplane radio. Sailplane radios, like the JR9503, Hitec Aurora 9, Futaba 8FG Super or the Airtronics SD-10G cost between $400 and $600 and the receivers that go with these systems run $70 to $150 each. There is no question that these are excellent sailplane radios, each with its own strengths. However I wanted to see if there was a lower cost option.

If we can find a workable sailplane radio at entry level prices we could save people a lot of money and help them advance more rapidly into the fun of thermal soaring with more complex planes. I may have found a path to that objective based on a new approach to RC radio systems — open source.

The FlySky TH9X radio came onto the market several years ago. You can find the same radio under the Turnigy, Eurgle and iMAX brands, but it is exactly the same hardware. The typical price runs from $60 to $100, depending on source and packaging. That usually includes an 8-channel receiver.

Initially it had a poor reputation for quality. The original 72 MHz version of

this radio was OK but the early software was buggy. When they moved to 2.4 GHz the first RF system was not very robust. But things have evolved a lot since then. Today this radio is being used by giant scale pilots, glider pilots as well as parkflyer pilots, and the reports are good.

As discussed in the first article of the series, RC computer radios are made up of two components. The part that we think of as the radio is the box with the sticks and dials and the main circuit board which includes a processor that runs the program that displays the menus. Thus we call these computer radios. This same processor runs the software that translates stick and switch input into signals that are sent to the radio frequency section, RF, of the radio to be transmitted to the receiver in the plane. Some systems are one way and some systems are two way to enable telemetry back to the ground.

Since the practice of changing 72 MHz channel modules was eliminated with 2.4 GHz, most new 2.4 GHz radios have the RF section built in so you cannot easily change it. Others, like the FlySky TH9X and the Hitec Aurora 9 have a modular RF system that can be easily removed and changed so you can use 72 MHz, 35 MHz, 50 MHz or a variety of 2.4 GHz systems. The photo shows the RF module in a Turnigy 9X which is HobbyKing's version of the FlySky TH9X. The label is different but the RF system is the same as the FlySky TH9X.

From this point on I will refer to all the various branded version of this radio as the 9X. The 9X typically comes with the FlySky RF module and an 8 channel FlySky receiver. Additional receivers are about $10. The radio has three dials, six switches and one 3-way switch. There are no side sliders and no controls on the rear of the radio. Battery and charger are not included. It comes with a battery holder for alkaline batteries.

The system provides 9 channels in FM PCM mode on 72 MHz or 8 channels in PPM mode which is what is used with the 2.4 GHz modules. This is exactly how my Futaba 9C works. So, this is an 8 channel radio on 2.4 GHz.

The standard set-up provides eight model memories. The standard software is more than capable for airplanes, helis and basic glider functions. In fact the basic interface looks a lot like my Futaba 9C. You can see a video here that shows the user interface and some of the standard features.

Setting up the FlySky TH9X, Turnigy 9X, Imax9 or the Eurgle 9X <http://www.youtube.com/watch?v=893rdC0i-TU&feature=fvst>

What really makes this radio system interesting, aside from the low price, is that the software is based on an open source model. That means that users can get into the code to add or enhance features and then give back their changes to the community in the spirit of openness and sharing.

Those of us from the computer industry are quite familiar with such things. Linux is one of the open source community's shining stars. It is a freely available operating system alternative to UNIX or Windows. For many companies it has replaced

Graphic provided by
<http://www.alofthobbies.com>,
USA based FrSky Distributor

high priced UNIX systems as well as the Windows Server operating system. And major companies are moving their mission critical applications to Linux, a free operating system.

The FlySky TH9X is going through the same type of evolution. It offers the user a far less expensive radio system that is useable right out of the box. However, it can be modified in hardware and software so you can load the available updates created by others. You can also change the RF system, as mentioned above.

Many users say they have no need to change the hardware or the software as the standard system suits them just fine. The 9X can certainly do more, with the standard software, than a Spektrum DX6i, and it costs $100 to $130 less than the DX6i.

If you want to rev-up the software, you can buy an add-in board, $45, which lets you load new, free software. There are several alternate software offerings, but ER9X software seems to be the most popular.
<http://code.google.com/p/er9x/>

With ER9X software it becomes a mixing powerhouse and it can also store 12 to 16 models depending on the complexity of your set-up. You can download and upload models to your computer so you can have as many set-ups as you like. Just load the 12-16 you want to use today.

Owners who fly larger, more costly aircraft tend to replace the standard FlySky RF module and receiver with one from FrSky for its greater receiver selection, dual antenna diversity and telemetry system. Will a 9X with the FrSky RF system match a JR 9503, JR 11X, Futaba 8FG, Airtronics SD10G or a Hitec Aurora 9 for sailplanes? Perhaps, and perhaps not, but the people I have spoken to on the forums say it is great for their Jets, 40% giant scale planes, thermal and slope gliders as well as their gas and glow planes. They say it can do almost anything. When I posted the list of mixes and flight conditions I use on my 9C Super, the response was that 9X, with the ER9X software, could recreate this set-up.

Based on reports from high end users, the FrSky system is rock solid and will match any of the name brand systems for the reliability of the link, but it does so at a fraction of the cost. Adding a FrSky

RF module and 8-channel receiver to the 9X costs about $45. By comparison, an 8-channel Futaba FASST module, with an 8-channel receiver for my Futaba 9C costs $300. FrSky receivers run $12 to $35, or about one quarter to one half the price of comparable Spektrum, Futaba, Hitec, JR or Airtronics receivers.

The link below goes to a discussion on the Flying Giants forum. It includes several posts by XJet, Bruce Johnson. You may know him from the review videos he does as RCModelReviews. His comments are quite revealing and typical of the reports I have read.
<http://www.flyinggiants.com/forums/showthread.php?t=62466>

Here is a discussion about the 9X among some glider pilots
<http://www.rcgroups.com/forums/showthread.php?t=1606788>

This user posted his set-up template for DLGs. They can be downloaded.
<http://www.rcgroups.com/forums/showthread.php?t=1428583#post18049473>

Of course, if you read the forums you will find negative posts, too. And while most are from pre-2010 you will find a few people who bought the current model and were not happy. But you can say the same for JR, Futaba, Hitec, Airtronics or Spektrum. The forums are full of those who swear by one of these top brands and those who trash them. However, for the major brands, and the 9X, the positive reports far outweigh the negatives

So, what do you give up when you go to this low cost system? Customer service is poor and warranty repairs may be a challenge. HobbyPartz and HobbyKing probably provide the best support, but even these may not be especially good. Don't expect to get on the phone line and have someone hold your hand while you try to set-up crow for your sailplane. For these things you turn to the user community.

XJet said that when he dropped and broke his 9X he just threw it away and got another one. Fixing it would cost as much as a new one. There have been a few reports of the FlySky receivers not binding, but I don't see us really all that interested in the FlySky RF system anyway. It should be great for parkflyers and the receivers are only $8-12. But as a sailplane radio it should be upgraded to the FrSky system and that one gets great reports.

While the overall manufacturing of the radio and main board gets good grades, people suggest you check the solder joints on the wires inside the radio. Occasionally something is not up to good workmanship standards, so you might have to resolder a wire. In the early days this was a big problem, today not so much.

In the open source world the community is the support mechanism and there is plenty of that. There are forums dedicated to this radio, under the various brands, and people are developing software and hardware enhancements.

Clearly this is not the radio of choice for everyone. If you only buy RTFs because ARFs are too much trouble, this is not the sailplane radio for you. If setting up flapperons on a DX6i seems too daunting, this radio may not be for you.

But if you can take the time to read and understand things, will take some personal initiative, then this could be an option that could save you hundreds and perhaps thousands of dollars. So, for some, this may be an excellent option.

I believe the 9X, with the FrSky RF system and one of the upgraded software offerings can be set-up to at least match the features and mixes I use on the 9C Super. Considering the 9C Super cost $430 when new, that would make this radio a pretty capable sailplane radio at a fraction of the price.

There may be members of the club who are in the market for a sailplane radio and are not pleased about the cost. Perhaps one or more might wish to embark upon a project to work with this radio system. The radio can be purchased for $60 to $100. The standard software and RF system should be fine for small electric planes and probably 2M gliders. Add

the smartparts board for $45 and you can load ER9X or one of the other advanced SW systems. The upgrade software is free. Now you have invested $105 to $145.

If you like it then you might want to rev up the RF system to take advantage of the high end features of the FrSky RF system, the module with 8-channel receiver is about $45. With all the upgrades done you are in for about $150 to $190, which is less than the price of a Spektrum DX6i. That should put you into a highly capable sailplane radio with two RF systems and two receivers. That would be less than half the price of a Hitec Aurora 9, Futaba 9FG or an Airtronics SD-10G. And it would be about than 1/3 the price of a JR 9503.

The FrSky receivers are about one quarter to one half the price of the comparable Hitec, Spektrum, Futaba and JR receivers. To illustrate what this means, if you put up five gliders using Futaba R617 FASST 7-channel receivers or Spektrum AR7110 receivers you will spend $400 or more in receivers. Using FrSky 8 channel receivers, you would spend about $150, saving $250 in receivers. That is enough for a second 9X for your summer house, car or as a back-up radio, with enough left over for a few more receivers. It might be worth a look.

I have a lot more information in the form of informational links, videos, and places to buy. There are also support forums for these systems. If you are interested, send me a note and I will forward what I have and share what I have learned. I would be interested in working with you on the project.

Also note that at our April LISF meeting one of our members did a rather extensive presentation on the FrSky telemetry system. There are a variety of modules available for things like battery voltage, altitude, motor temperature, air speed and GPS features.

SUMMARY

The goal of this discussion was to identify a lower cost path to a good sailplane radio. The FlySky TH9X may offer such a path. Hopefully those who are interested and comfortable with this open source approach will give the 9X a try.

Will the 9X take over the RC world? Probably not, but it offers the possibility of providing a highly featured sailplane radio system for less than 50% of the cost of the big name brands.

Clear Skies and Safe Flying!

Resources:

9X - FlySky/iMax/Turnigy/Eurgle FOR DUMMIES <http://www.rcgroups.com/forums/showthread.php?t=1616229#post21068397>

Leader Hobby – Fly Sky TH9X FlySky makes the radio. 2.4GHz RF module shown below. <http://leaderhobby.com/list.asp?type=categories&categories=70>

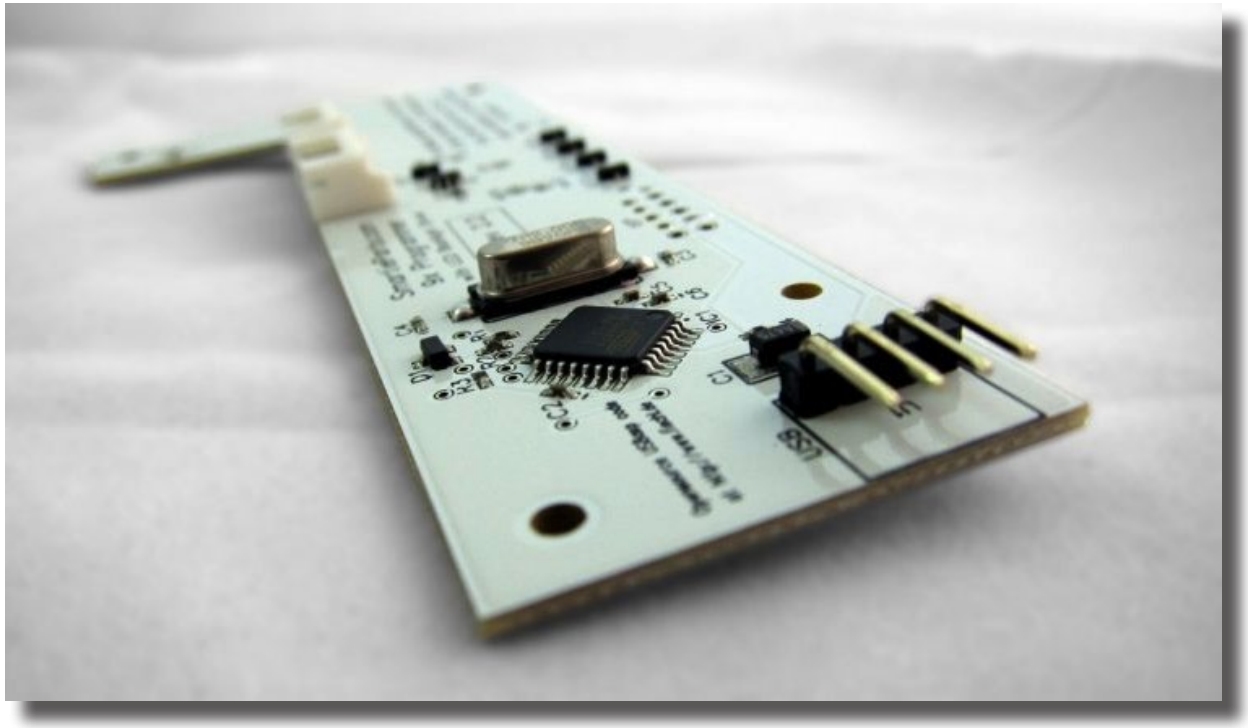
Hobbypartz <http://www.hobbypartz.com/79p-th9x-r9b-9channel-radio.html>

Turnigy 9X – Hobbyking – USA warehouse – <http://www.hobbyking.com/hobbyking/store/uh_viewItem.asp?idProduct=19673>

FlySky – wowRC — FlySky FS-TH9B FS-TH9X-B 2.4G 9CH Radio System (TX+ RX) RC Transmitter Set --Mode 2. Shown at right. <http://www.wowrcmodel.com/rc-accessories/radio-system/flysky-fs-th9b-fs-th9x-b-2-4g-9ch-radio-system-tx-rx-rc-transmitter-set-mode-2.html>

Smartie Parts Programming Board – allows firmware updates and provides backlight for display, shown at right. <http://www.smartieparts.com/shop/index.php?main_page=product_info&cPath=3&products_id=331>

Parkflyer RC – TH9X and optional er9x upgrade kit which includes Smartie Parts Programming Board (allows firmware updates and provides backlight for display) shown at right, CNC milled thumb sticks, etc. <http://parkeflyer.com/transmitters/fs-th9x.html?virtuemart_product_id=16&virtuemart_category_id=7>



SLOPE REPORTS

FAKE

GoteWAMS Fake October Fools Bogus Slope Reports, with a dead Native American and a Temporal Splitter named Granny, who looks like an old vacuum cleaner

Submitted by Philip Randolph, amphioxus.philip@gmail.com

(Humor, except from the perspective of the Gote, who initially didn't find it at all humorous.)

Herein: An unfortunately believable fake slope report as practical joke, for the benefit of Monsieur Gote. Gullibility. Philip's foot in it. Anti-Gullibility: A second, blatantly fake slope report, that borders on Sci-Fi. Drunken champagne flutes jumping through wheat fields while Mike Z. blasts at them with a Glock. The dead Native American paddling across wheat fields. Persons in two places at once. Marvmentum.

It was early October, 2011. Intrepid Slope Explorer Gote, of GoteWAMS (Gote-ish Wild Arsed Mountain Slopers) was going stir-crazy. Cabin fever. Stuck down in a remote scenic setting in Southern Washington. A house of walls with Gote prints, from the Gote bouncing off, of. And mini GoteWhelp prints, from his four-year-old kid, GoteWhelp, bouncing off, of. So first: Das Gote tries (and fails, bother) to get his GoteWAMS to head for a ridge near Kiona, which is east of Yakíma, which out-of-staters pronounce with emphasis on the second syllable (so wrong). The Horse Heaven Hills are these things with only one side. They're some kind of geologic sheer, well worn, so they look like hills from the north, and block the Yakima river from running south. That means the frustrated Yakima has to run east for about fifty miles just to get to where it can join a Columbia with enough brains to run downhill, which is toward the Pacific. Which the Yakíma finds discouraging, and retrograde, so in its easterly meandering, it just lollygags along.

The south side of the Horse Heaven Hills is wheat fields, rolling plain, plateau. The north side has lots of good slope experiences. If the wind is from the North.

Well, with an AMA card and twenty bucks for the Mid Columbia Soarers, one can use world famous Eagle Butte's southern exposure, by Kennewick, which would make sense, but since when have GoteWAMS made sense?

Unfortunately, forecasts are not polite:

Philip: What's the deal with conflicting forecasts?

Gote: One is to keep Phillip from showing up, the other to get everyone else to go. The mistake was letting Philip see the second one.

Sanders: Looking at WeatherUnderground, Air Sports Net, and NWS, you're getting very divergent forecast models…for Sunday especially… demonstrating that the air mass for that day is not providing a stable prevailing wind suitable for slopin'. Whenever Air Sports Net wind arrows are pointing willy-nilly, you are taking the roll of the die when heading out counting on strong prevailings. Go fishing instead. Or get a motor and propeller.

Lackluster response and weather kill that slope trip. But the scene is set to further frustrate Das Gote, who tries again.

Slope trip attempt # 2:

This time Gote is trying to get us all up to 5500', in October, to camp with a bunch of NWHikers.net persons. Location: A spur road, beneath Bethel Ridge, which is about fifteen mile East of Mount Rainier. And it's near Timberwolf Mountain, a ridge with some of the most dependable slope lift in the Cascades. But the last time we slopers got together for an October 'Teeth of Larch' with the NW Hikers, the weather at 5500' hit 6°F.

Philip (9/30/11): I will go if it isn't too damned cold. Otherwise let's go to lower ovulations.

Bill (10/11/11): Trip still on?

Philip (10/11/11): I'm in the 9th day of a narsty cold…Total energy drain. So if it doesn't get better fast, I'm not going anywhere.

Gote (10/2/11): Oh it's on one way or another. I need to get the hell out of the house and I'm dying to camp. There has been some interest at NW hikers and some folks are coming. I'm in. May move it down the hill if snowline is too low, but it's on.

Philip (10/13/11): I'm ¾ better but… It's not so likely I'll be gud enough to go.

Gote (10/13/11): You need some fresh mountain air to clear that crud out. The forecast is looking pretty decent really. I will be rather annoyed if this is the second time this year I am flying Timberwolf by myself.

The rest of GoteWAMS all beg off.

Philip to Gote (10/13/11): How what might not be happening: My guess is… WAMS are waiting for someone to say, 'Hay, Let's all go to lower, less cold places, like Saddle or Kiona.' Which isn't going to happen because the excuse of bad weather doesn't quite exist, for Timberwolf. Me, I've got all the energy of a salted slug on a sidewalk. ~Philip

Long and short: Fortunately, Marvin and a few NWHikers showed up at Bethel. But: No GoteWAMS attended. Just Gote, and four-year-old GoteWhelp.

Gote, post trip report: (Sunday, 10/16): Today was spectacular except for being woken up in the near dark.... 'daddy it's wakeup time'…A light coating of frost, gone when the sun touched it, and deep blue skies. I pulled out the Herring to check it over and found I had no epoxy, no superglue, and a busted off control horn. So this sucked of course because hawks and crows had been rising up into site and then over head into the blue after about 10AM and I knew TW would be thumping. But again it was a nice day in camp.

So then Philip gets the dumb idea that Gote could use a little attention, so why not get his Gote with a fake trip report? Not really attending were Bill, Rick, Stephen, Dave, Mike D., Mike Z., Philip, Sanders, Erik & 8-year-old Riley.

Fake trip report uno, emailed to all GoteWAMS by Philip:

Well, as most of you know, Friday, Ryan called up and said, Hay, Philip, you well enough to go camp at Kiona? I said, "Sure. Don't think I could take the cold

up in the mountains, but..." So then Erik said, "Well, that's not too far." So we called a few who were surprisingly ready to rock. Spontaneous, great!

Summary: Balmy weather both days, winds curling around NW, worked great in bowls near Kiona. Steve's Prodi-J zipped. Ryan managed some DS just behind the lip. Camping in the flat behind Kiona. If the wind stayed up, we were going to camp in the gravel pit there.

Quotes, Friday:

"I got a trailer just sitting here, with a huge cookstove." --Bill H.

"I figured Philip needed a ride, so he could sleep all the way over, as usual." --Stephen

"Kiona is a beep of a lot closer than Naches. I'm in." Rick

"I miss Marvin, asking Philip and me scientific questions." –Stephen [Note: Fake Stephen is recalling that time down at Grayback, when Marvin kept repeating to Ph.D. Stephen and aerodynamics nerd Philip, no matter what their explanations, 'But doesn't ice melt just a little, when it breaks apart?']

"I was lying about catching Philip's phlu, because Philip said to fib off an excuse for not going up where it's cold and wet." --Mike D.

Followed by two more days of blah blah blah, and made-up quotes (not included). You know, the stuff guys talk about, on slope trips.

Real email responses, to the group:

Among the real email responses, to GoteWAMS, was Ryan's: Phil, who was that 'lady' you brought along? She kinda reminded me of The Creature From The Black Lagoon. Or Mothra. [Okay, Ryan, I changed this slightly, to keep it polite.] Musta kept ya warm huh? [Ryan later sends a picture that would scare The Incredible Hulk.]

An ominous silence from Gote.

The thing is, I figured I had long established a credibility gap, so that Gote would quickly figure, "Oh, that's just Philip messing with my head." But it seems he did think I brought along the tentacled woman from Star Trek who sucked all the salt out of disposable ensign's bodies. Bother. So at a suggestion that wasn't really from Stephen, I wrote a trip report fake enough so that everyone would know it was fake. But still. Bother.

Fake slope report deux: The dead injun paddles the temporal splitter, email subject:

Enough of the Fibs. Gote Made it to Kiona with the rest of us, last weekend. The real trip report

So we're all flying our toys at what we call Kiona, up above the geologic sheer of the Horse Heaven Hills, southwest of Kennewick, on Saturday about noon. And it's all fun, till Mike Zanol, on the stick of Rick's EZ Glider, doing loops, [This is an in-joke, and the first clue of falsity. We've never been able to get Mike Z. to touch a transmitter.]—Mike Z. says, "But it's just not the same without Gote. Too bad he's off at Bethel with the NW Hikers." And Bill Henley says, "I have a champagne flute, with his name on it."

And then it's Sunday, and Monday, and Stephen doesn't really say, "Philip, as long as you were going to wax creative, why didn't you write Gote into our trip?" And Philip doesn't really say, "I write the truth, the holy truth, and only the truth, so helpeth me to more…Gawrd, what the hell is that? "

It seems it is again Saturday noon. Philip points, southwest, across the rolling, green, newly planted winter wheat. Those with planes in the air land them, to watch. At first it looks like a birch-bark canoe, being paddled upstream through the wheatgrass, wind blown ripples seeming to make the wheatgrass flow by, as if downstream, by a rather stereotypical dead Native American brave, with two feathers in his hair, and a bunch of beads, and a paddle, and not much else, except further forward in the canoe, in the position where one might expect a second paddler, or a passenger, the top of something pokes up, that looks like it might be a rather rectangular vacuum cleaner. But these

are just impressions. It's too far to tell. As it gets closer, it appears that it is indeed a birchbark canoe, being paddled upstream through the wheatgrass, wind blown ripples seeming to make the wheatgrass flow by, as if downstream, by a rather stereotypical dead Native American brave, with two feathers in his hair, and a bunch of beads, and a paddle, and not much else, except the top of something that looks like it might be a rather rectangular vacuum cleaner, further forward in the canoe, in the position where one might expect a second paddler, or a passenger, the cut and paste function making the repetition of that description easier.

Looking west along the Horse Haeven Hills from Chandler Butte, near Kiona, WA, USA

The Native American steps out of his canoe into the wheat grass, and hauls it up onto wheat grass, as if onto a shore. It's actually fiberglass, painted to look like birch bark, but we don't say anything. They didn't use birch bark canoes in this part of the country, so he's probably being authentic. He turns to the vacuum cleaner, picks it up, places it before us, all in a circle now, and makes a few sign gestures, "Hi. Smooth. The world is indeed a large and open place." He says something, but it's indecipherable, maybe Cayuse, Yakima, or Walla Walla, or Nez Pierce, if he were from around here. Bill says, "How about a champagne flute, of Boones Farm Strawberry Hill Citrus Flavored Wine. He says, "Ugh," maintaining his stereotype, so we arrange a circle of folding chairs, on this hill that drops off so sharply to the north, above the Yakima River, rolling wheat to the south. After. The dead Native dude, he has again picked up the rectangular looking old vacuum cleaner, or whatever it is, and put it on a folding chair, in the circle, and has signed to Bill that he should put a champagne flute of Boones Farm Strawberry Hill Citrus Flavored Wine in the chair's cup holder. Which Bill does, of course, not being discriminatory, against vacuum cleaners. We all sit around in folding chairs with champagne

flutes, introducing each other. And oddly, there are two extra chairs.

Ryan says, “I’m Ryan.” He puts a thumb to his chest, which , as we’ll find out shortly, in Cayuse is a dirty gesture, which may be why our dead indigene cracks a half smile that’s almost a laugh, but we don’t understand yet. The rest of us do the same, with the same dirty gesture, but with our own names. Our dead feathered fellow puts a thumb to his chest, and says, “Azh-a-in.” Then he turns to the vacuum cleaner looking thing, bows slightly, and says, “Granny.” Ryan, always having a way with women, says, “Hi, Granny. Pleased to meet you.” The rest of us follow suit. There is a dignified silence, of a few seconds, and a gray, metal plate, about six inches wide and four inches high, set at a sloping angle near her top, flashes with blue letters, in typeface like off an old Remington typewriter, “The circle is not complete. The circle is complete.”

Over the next half hour, Granny, via the flashing blue lettering on her metal plate—it looks like tarnished aluminum, with discoloration as if from heat—explains to us that Azh-a-in is paddling upstream, returning to his origins, and that she hitched a ride, for the hell of it.

Gote asks, and none of us quite notice that he shouldn’t be here, “Your friend found something amusing?” Granny’s plate lights up, “Inlands plains sign language, thumb is Freud’s cigar. Thumb-p on chest means, “I self-stimulator.” Ryan says, “Yes, we are all self-stimulators. I presume. I have not observed directly.” Philip says, “The truth is always in poor taste.” Azh-a-in says, “Huh, huh, huh.”

Azh-a-in gestures in a complicated manner, which we somehow understand, that this hill, and the expanse around it, and the sky, are a sacred place. He has observed us making our war shields flash through the sky in sacred chaos. How much do they cost? What is the effective range of the radio frequency receivers, before glitches? Do they come back? Can I try?”

Granny’s plate again flashes, “The circle was incomplete.” Erik says, “Yeah, Gote and his kid tried to get us up in the Cascades, near Bethel ridge, in the Naches, with a bunch of NWHikers, but it sounded too cold, so we ditched him, and came out here, where it’s warmer. Though I thought I stayed home, till I read Philip’s trip report. And I thought Philip and Mike Daily were sick, and I thought Damian had his mother’s birthday party, and everyone else just didn’t want to go anywhere. Last we heard he was mad at us for not showing. And here we are, according to Philip’s trip report, the first one, which he’ll write sometime tomorrow, and I’m a bit confused.” Granny’s plate flashes, “Temporal splits addle small minds.” Philip grins, almost as if he is the dead Injun feller. Bill says, “Granny, Azh-a-in, care for some more Boone’s Farm Strawberry Hill Citrus Flavored Wine? Mike Zanol brought a whole case!” Refills all around.

Then Erik, being technically minded, or addled, or something, asks, “Ms. Granny, what did you mean by, ‘temporal splits?’” Granny’s plate is blank gray. Azh-a-in gestures in a circle, to our circle of chairs, and the two empty ones, one smaller, or maybe three, though it’s hard to tell where the third one is. Azh-a-in points down the ridge, where we see a cloud of dust, a bit of dirty yellow, and a bit of blue. He gestures to Granny, and makes a gesture of two hands, coming apart. He extends his arms toward the vacuum cleaner, palms up. Granny’s plate flashes, “I am temporal splitter, splitter, splitter. Blown head gasket, but some splits, still. Azh-a-in wishes full circle in his spiritual place this. Your friend and his child are still at Bethel ridge. He is also. Your other friend was more difficult, as you can know his position or his Marvmentum, but not both at the same time.”

We hear a honking, and turn to see a beat-up, yellowish Datsun station wagon barreling toward us on the ridge road, followed in a dust cloud by a rather sad-looking, Navy Blue Saturn, with a 2x6 front bumper. They pull up. First out is GoteWhelp, Gote’s four-year-old, moving so fast he seems in all places at once. Then Gote. Then Marv, though when

we look his direction, our vision seems to skip between seeing a vague blur of motion with only the most general of position, and a sort of fifty-two-card-pickup of snapshots, stills, indicating where he once might have been, or not.

GoteWhelp runs up and says, “Granny, Granny! as he slaps her top. Gote says, “Hi, Granny. Hi, Azh-a-in. Hi, the rest of you boogerheads, who ditched me, and wouldn’t come to Bethel, even with two weeks notice.”

Sanders says, “You know these two? You ditched the NWHikers?”

Gote says, “Naw, weren’t you listening. I was sitting here with you guys while she explained she is a temporal splitter, though I hadn’t arrived yet. I’m still back below Bethel, also, with GoteWhelp, and Marvin may be there, also, though one can’t know.”

Damian says, “Yeah, we heard that, but we didn’t quite get an explanation.”

Gote says, “Well, this morning, on the spur road beneath Bethel ridge, Azh-a-in here paddled up out of the larches in his canoe, with Granny. Pretty much like the scene here, except that it kind of freaked out Geohiker, Kbatku, and Kite, who just started snarfing down the dregs of any bottle left around the campfire. I guess they weren’t used to the kind of stuff that always happens on GoteWAMS trips. So Granny prints out, ‘The circle is complete so you must be part of.’ I said, ‘What?’ Well, she snitched on you boogerheads going on a fake trip report without telling me, and said, ‘Go Stay Here Take Leave Kid Marv.’ And I’m scratching my head, but then I get this odd sense, and I watch myself say, ‘Yeah, get on the road. I’ll hang with the NW Hikers.’ And it seems there are two of me, and GoteWhelp, who is playing with himself—no, not like that, Gawrd, Philip, he’s only four—he and himself are running around Granny and Azh-a-in and he playing tag with himself, or the other way around, till he touches base, which is Granny. And the double questionable Marvin is asking Granny, ‘Didn’t I melt, just a little, when I

The Yakima river, reluctantly going east when it wants to go west.

split apart?' And there are two Datsuns and two Saturns. So we packed up and drove here, and watched us drive away, only I was here before I got here, as you might have bothered noticing, buttheads."

Mike Daily says, "This is almost as strange as that other time."

So Damian and Rick and Gote spend the afternoon teaching Azh-a-in how to fly toy airplanes. Mike Zanol takes potshots with Bill Henley's Glock, at the champagne flutes, who have generally run away from the case of Boones Farm Strawberry Hill, and are leaping through the wheat grass, little drunks every one. When evening comes, we all camp here on this one-sided ridge. The winds die down. We're in a circle around a fair-sized bonfire, which is only Ryan's double-headed propane heater when you stare straight at it and count or say the alphabet or stop swilling Hill from the flutes, who got tired and came back to again get drunk (from), Mike Zanol having mostly missed. Outside, almost as flames in the dark, or like gold painted on Mexican velvet art that you'd find in a roadside stand, half-outlined hints of horses, perhaps those who once roamed these Horse Heaven Hills, and also, shadows of Azh-a-in's ancestors.

Of course, Sunday afternoon comes too soon. We all drive, or paddle, in our separate directions, Philip and Mike Daily back to Seattle, where they have spent the weekend being sick, and where Philip will have regrets about not initially including Gote in the trip (report) to Kiona. Where Erik will email, "You had me going for a bit. Gote will be pissed." And where Philip writes back, "Yeah, but at some point I'll point out that all the guys who weren't really there were affectionate toward him in the things they didn't really say because they weren't there. Or I'll eventually say that any attention is good attention. It's when they start forgetting you exist that you have to watch out. I didn't want him to fade. Yeah, could be." (And hence this revision, thanks to Granny, who got him, and GoteWhelp, and Marvmentum along with the rest of us.)

Rick, Ryan, Damian, and Erik head back to where they have spent the weekend with their families. Mike Zanol to Wenatchee, where he had taken in a rock concert, and drank too much beer (not Boone's Farm etc. blah blah, from drunken flutes). Steve back to Bellevue, where he spent the whole weekend preparing Computational Fluid Dynamics of turbine blades for a customer he had to meet Monday. Gote and GoteWhelp back to merge with themselves, as they drive home from Bethel. Granny and Azh-a-in paddling east through the wheat grass, heading for origins. And, well, one can't observe position and Marvmentum at the same time, but we remember him, at the campfire, or the propane heater, asking Ph.D. Steve, "Won't [I and I] melt, just a little, when I come back together?"

Aftermath:

Gote (10/19/11): I am still confused. Are you saying you guys did not go to Kiona?...Your fake trip report was so convincing because your trip reports and what we actually wind up saying and doing are so weird that it read as real. Although, Phillip bringing a woman stuck out, LOL.

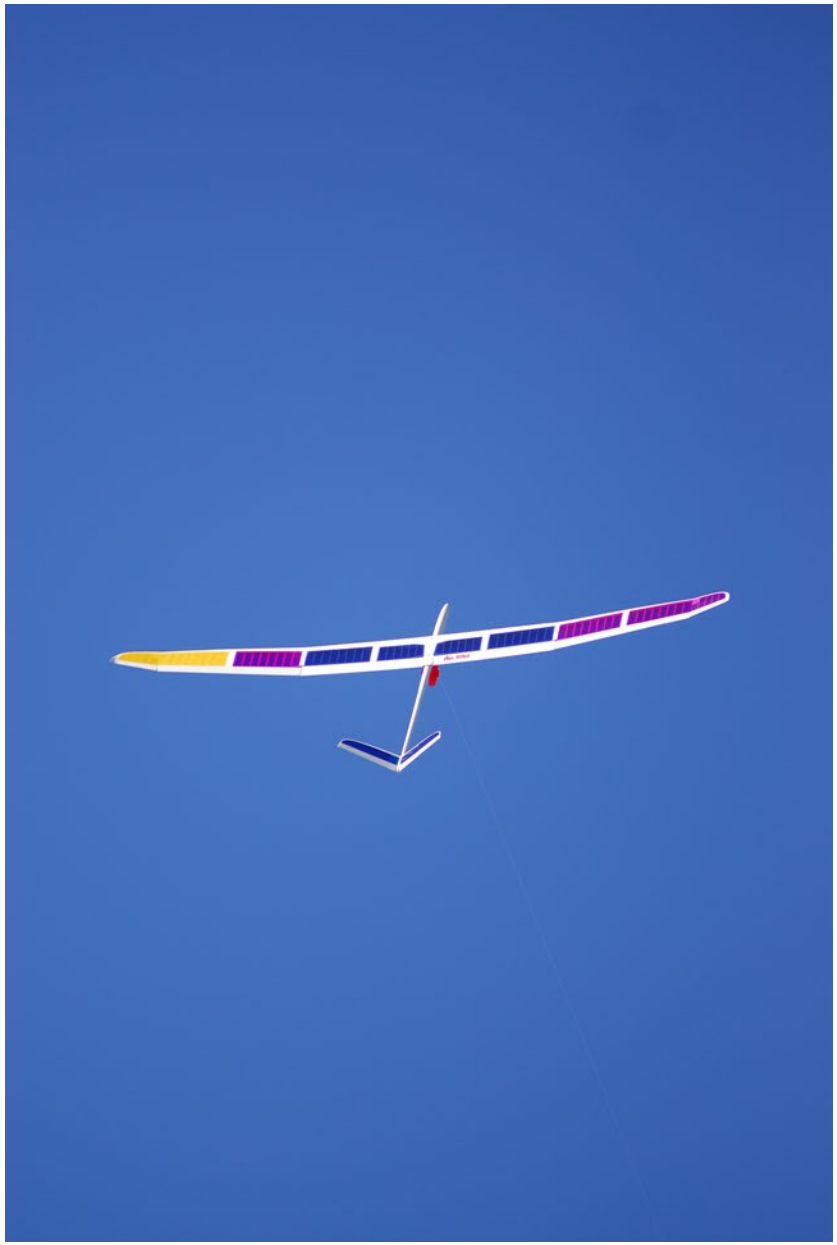
Woops. But it bloweth over, and finally channels itself into an amused Gote: "Well I had to smile as that's quite a write-up."

Damian: I was reluctantly believing it until the story had me showing up.

Mike Z. (10/19/): After catching up on the e-mail, I almost forgot that I wasn't at either place with any of you guys. I ended up going kayak-camping, or at least that's what I seem to remember. Maybe I was in some kind of quantum entanglement and was in multiple locations. I don't remember seeing Marv, but I have noticed that he is often only observable if you don't look directly at him (although he never is observable in a mirror). Sorry to have missed the events which may/may not have taken place, unless I didn't. Now where the hell did I set down my flute of Boone's Farm.....


Photo Album
Jerilderie
2012
Andy MacDonald, admacdo@gmail.com


STANLEY




Xplorer
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Red Bull
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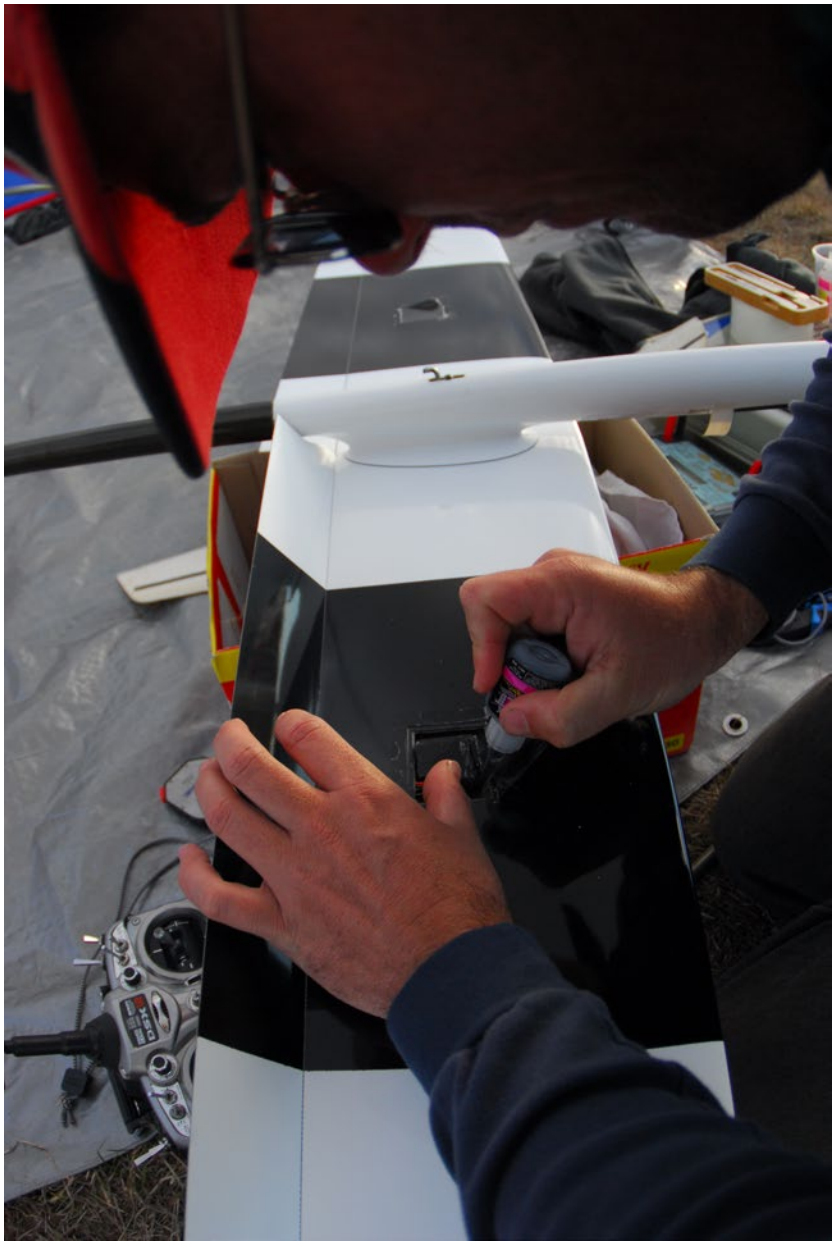
Pike Perfect


Xplorer

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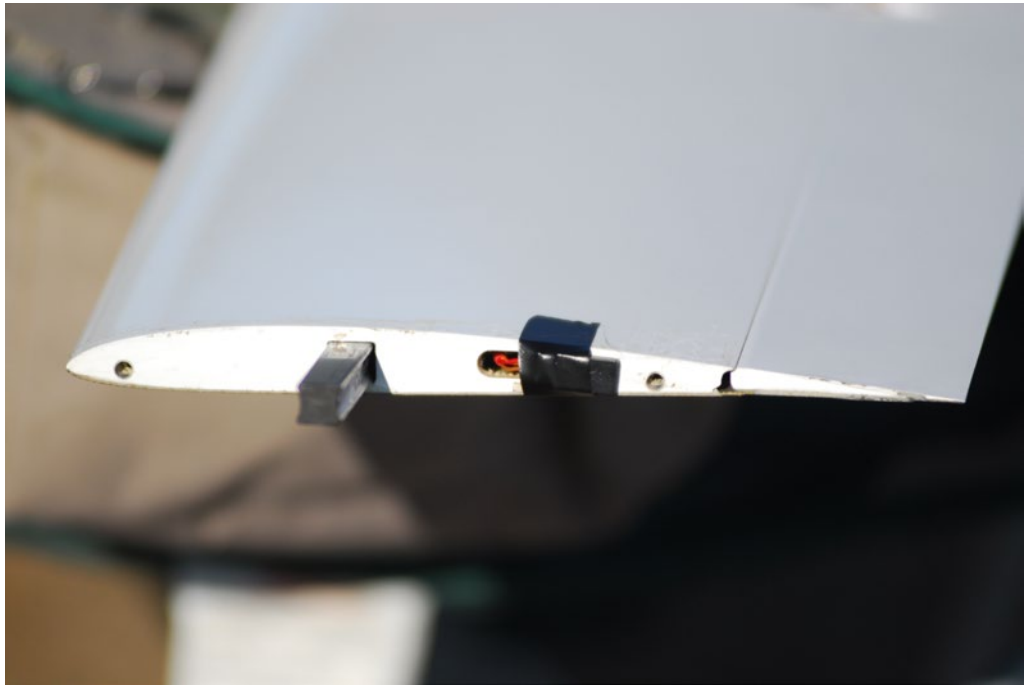


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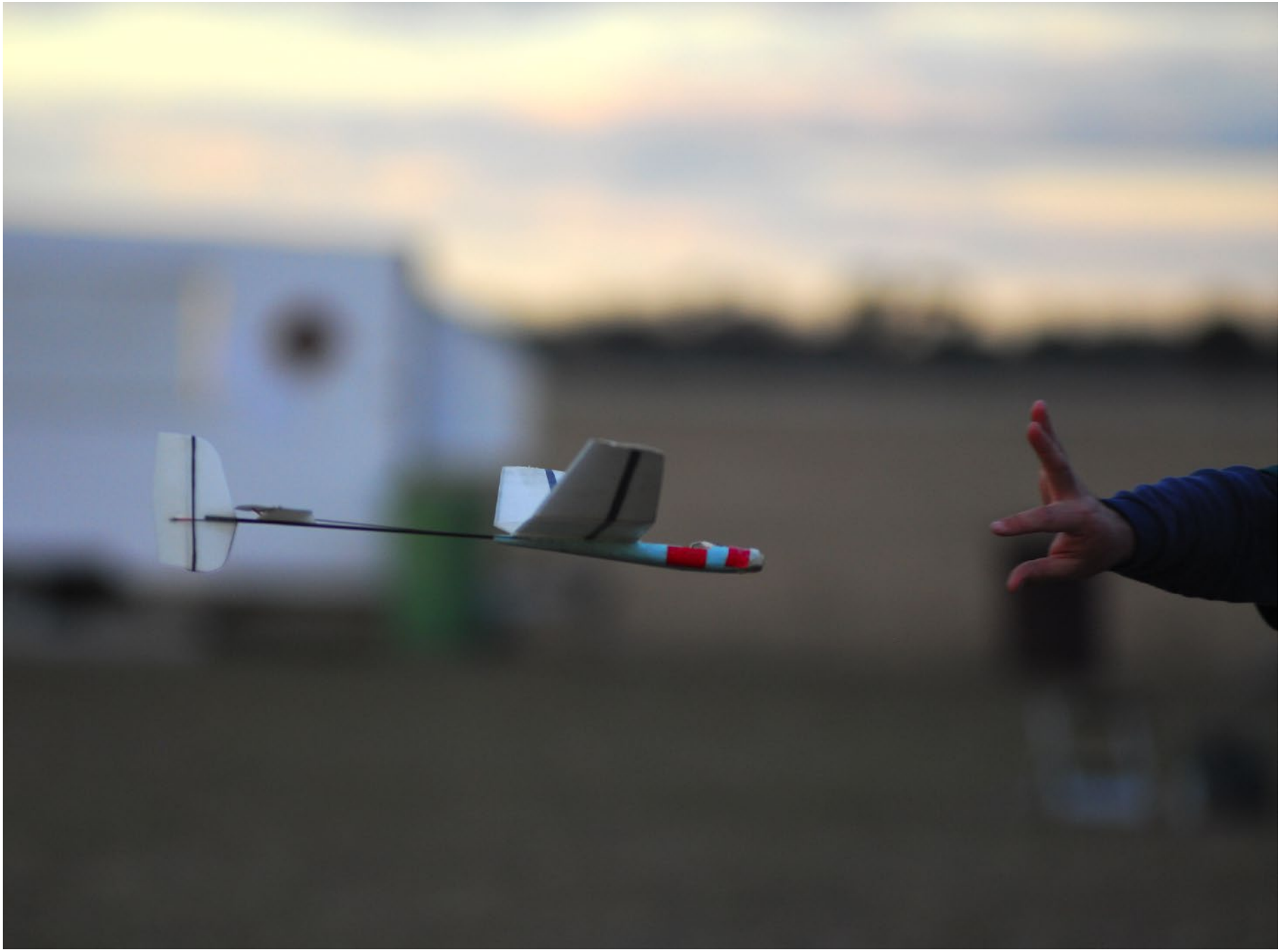


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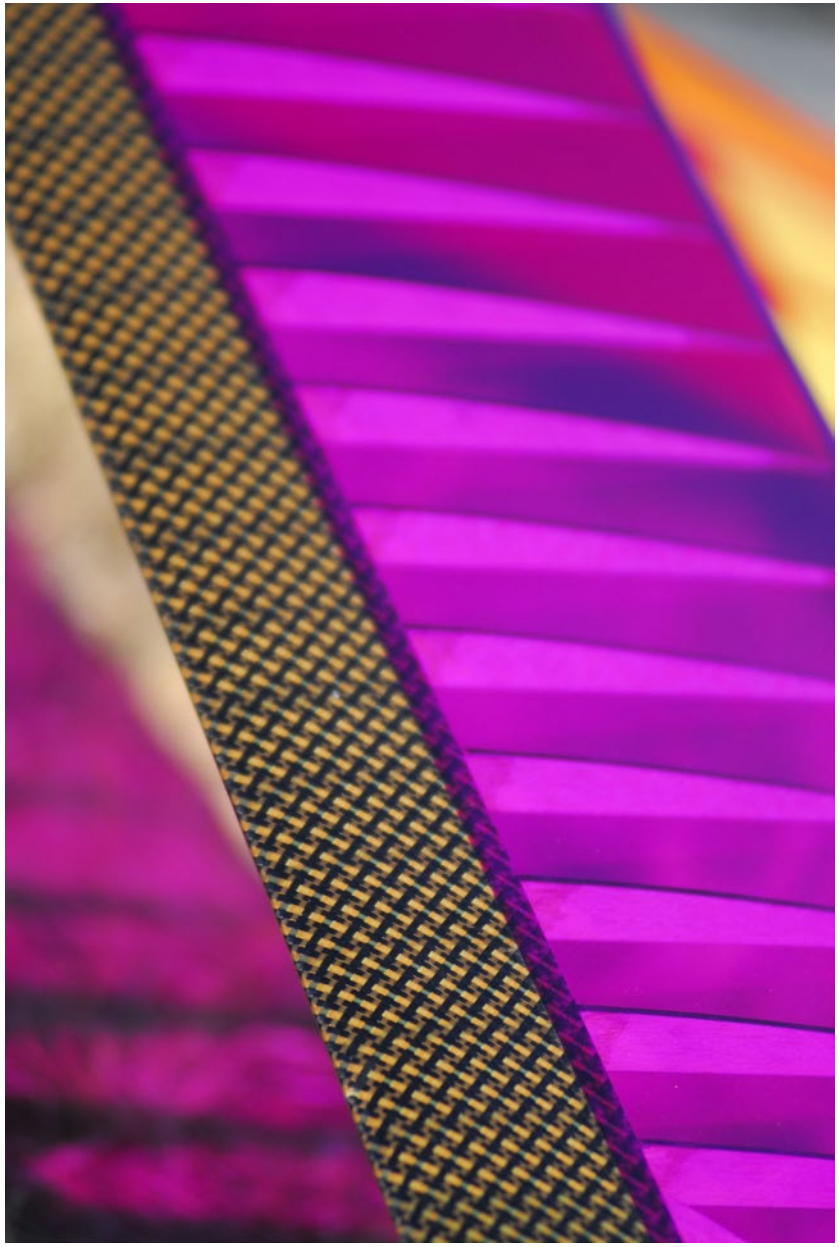


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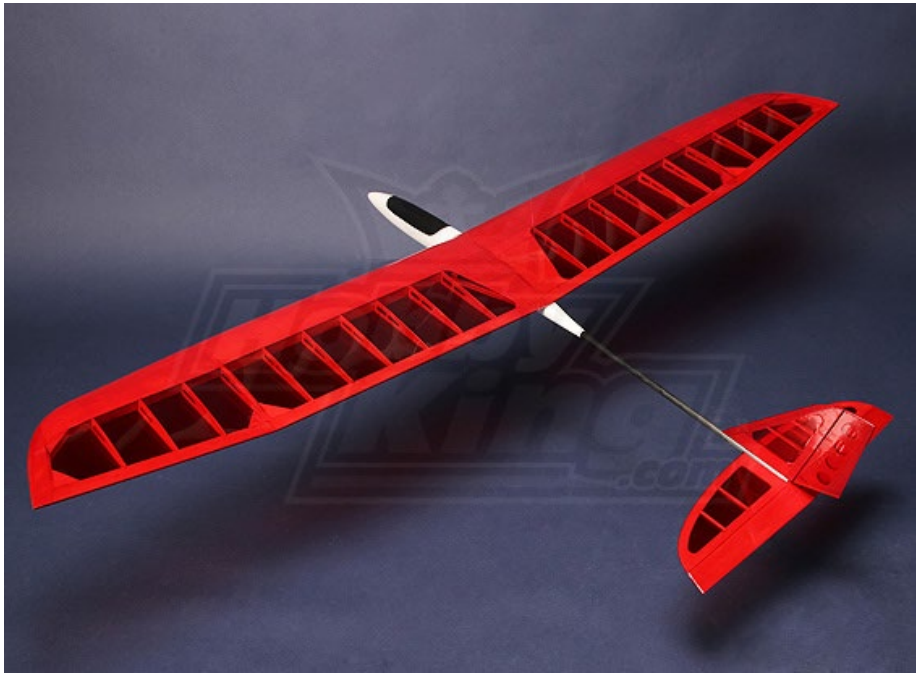
ARF Review

Rene Wallage, rene_wallage@yahoo.com



This August (2012) marks my ninth year flying RC; mainly electrics and gliders, and I don't know about you, but for the last four or five years I have seen a steady decline in prices of the various bits and pieces. It started with brushless motors, logically followed by cheaper ESC's, then the bottom fell out of the servo market. Mind you, these were all (and often still are) manufactured in the Far East - copies of reputable brands, or re-branded servos exiting the very same factories, but with less strict (i.e. cheaper) quality control.

Now I do not intend to start an argument (or a case) for or against these cheaper products. Fact is, some of these cheaper items aren't worth even the little bit of money you spend on them. However, some are. You just need to be either lucky, or knowledgeable about what you need, and where to buy it.

For example, both my Riva Tango F5J glider and my Topmodels Nike2 hotliner have brand name quality servos. But they both sport "top-of-the-line" Turnigy motors and ESC's. My foamies on the other hand, all have $2 - $3 servos, and have withstood all possible abuse I could think of. And some even I couldn't think of…

But how about planes? Many ARF's are produced in the Far East nowadays, including a lot of brand names. And those prices are still way up there where they were four years ago.

So then, what kind of glider can you get for a whisker under $40, plus shipping? That's what I asked myself when I saw the Canary SQ (1200mm span) on the Hobby King website. First off, she looks very much like at least two other known gliders, both marketed by reputable name brands. Here and there are some minor differences (a few centimeters wingspan, shape and attachment of the tail group), but other than that, virtually

identical. But at that price, I decided it couldn't be much. I just assumed it to be a cheap Chinese knock-off and forgot about it until, through no fault of my own, I had a large store credit and started an order of a variety of odds and ends. And somehow a Canary SQ found her way into my shopping basket.

On arrival the box was slightly "frazzled," but not more than any other large parcel I had ever received. Can't fault HobbyKing for that of course. The wing halves and tail group came out of the box in pristine condition. Not so the pod. It was wrapped in thin tissue paper, and while unwrapping I could see a 5" long crack along the bottom seam, and another 2" long crack in the side of the pod. That was my first setback. Putting the pod aside (carefully), I examined the rest of the contents. The carbon fiber boom was pre-cut to receive the tail group. But whoever had done the cutting hadn't used a ruler. Or did the cutting with his/her eyes closed. Or both. The slits were so un-evenly spaced I wouldn't try to use it. Right, put the boom next to the pod…

A small plastic bag with some bits & pieces came out next. This contained: a 5mm carbon fiber tube, 3x2mm carbon fiber rods of various length, control horns with backplate and screws, a piece of light ply with a pre-drilled hole, and two elastic bands.

The 5mm CF tube was obviously the wing spar, the shortest CF rod the wings' aligning pin, the other two CF rods wing retention rods, the piece of ply will go inside the pod to hold the boom in place. The supplied control horns went straight into the spares drawer. They are the wrong ones; the elevator and rudder have pre-cut slots for horns. And the elastic bands both snapped when I gave them a little pull.

Tied together and folded away inside the box were 1mm metal pushrods. These were unusable because of the way they were folded; a permanent bend had appeared. I put those next to the CF boom then.

And last but not least a large sheet of sticky-back decals.

By now you may have noticed I did not mention instructions.

That's because there weren't any! So my first thought of "a cheap glider = good for beginners" was out of the window. Quickly followed by the rubber bands, the pushrods, and the CF boom.

That means I was left with: two wing halves, a tail group, a pod (to be repaired etc., but more about that later), assorted CF rods and tube, and a decal sheet. It's sort of what I would expect to get for $40…

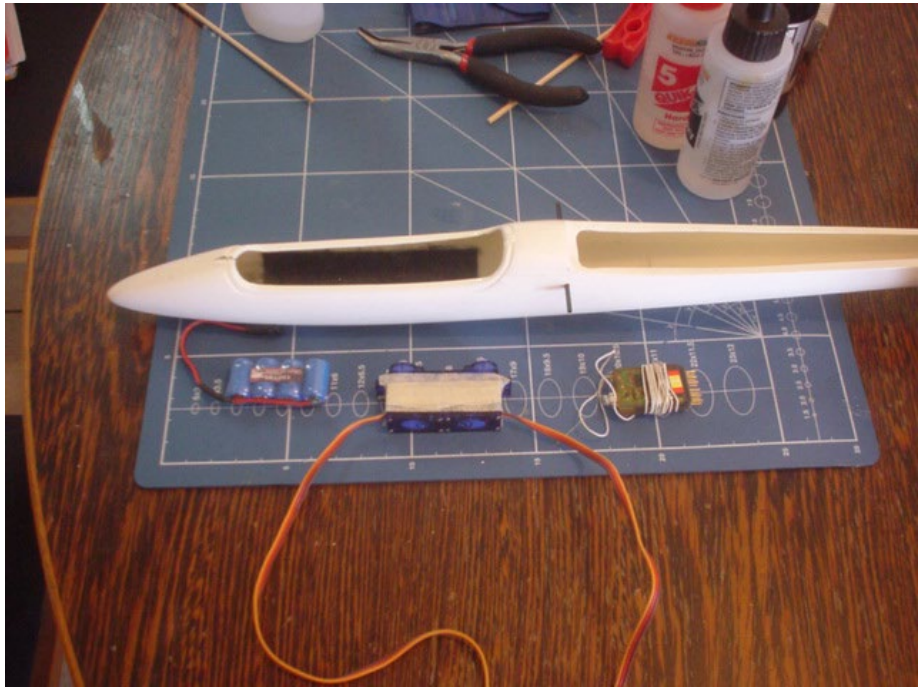
On the bright side; on closer inspection the wings, elevator, and rudder look pretty good! Expertly covered, without a wrinkle in sight. Not only that, but when trial fitting, the CF tube and rod where a snug fit, and the wing roots touch without a gap! Before glueing the wing halves together I applied the decals. It's easier to do, with less chance of hangar rash, when dealing with the two smaller wing halves separately. I cut two of the larger decals out of the sheet, one for the top and one for the bottom of the wing. To apply the decals I sprayed a generous amount of window cleaner on the wing, peeled of the backing paper from the decal, and gently placed the decal on the wing. With the window cleaner on the wing I could move the decal about a bit, until in position. I then squeezed the fluid from under the decal with some kitchen tissue. Let it dry, and the decal is applied without any air bubbles or creases.

I used 5-minute epoxy to glue the tube and rod in place, and after that with a generous amount of 30-minute epoxy on the wing roots I taped those together, after wiping away any excess epoxy. As there are no instructions, I let the wing halves decide the dihedral (as it happens, this turned out to be just right). I had saved the box from my Nike2, which now came in handy to store the wing when the epoxy had cured.

On to the pod. I have been corresponding with HobbyKing about a replacement, and they've assured me the factory will send a replacement. The only question is "when"… Not wanting to wait any longer, I decided to repair the pod. A long strip of carbon fiber cloth, about 1/2" wide was applied on the inside,

along the bottom seam of the pod, and when that was virtually dry, I applied another piece of carbon fiber inside the pod where the second crack was. Using as little finishing epoxy as possible, I only added 2 grams! Closer inspection showed that the top seam in the nose was also looking a bit iffy, so I painted some leftover finishing epoxy here. I didn't add any further fiber cloth or other re-enforcement. The thinking behind it was that on a hard nose landing, something's gotta give, and I'd rather it be the nose itself, which is easy to repair. There were some hairline cracks in the gel-coat along the wing bed, which I treated with some thin CA.

Putting the pod aside, I moved on to the boom. As mentioned, the supplied boom was useless. No problem; a quick trip to the local hobby shop (10 minute walk from the office), and I had a new boom. Measuring the length, I made an on-the-spot decision to lengthen the boom by 2". What can I say, I

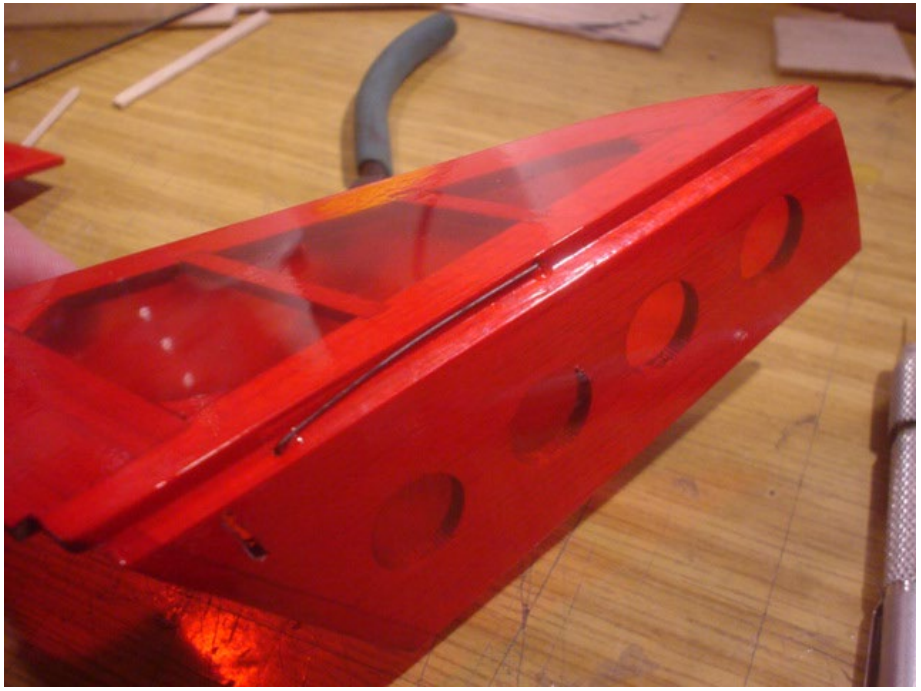


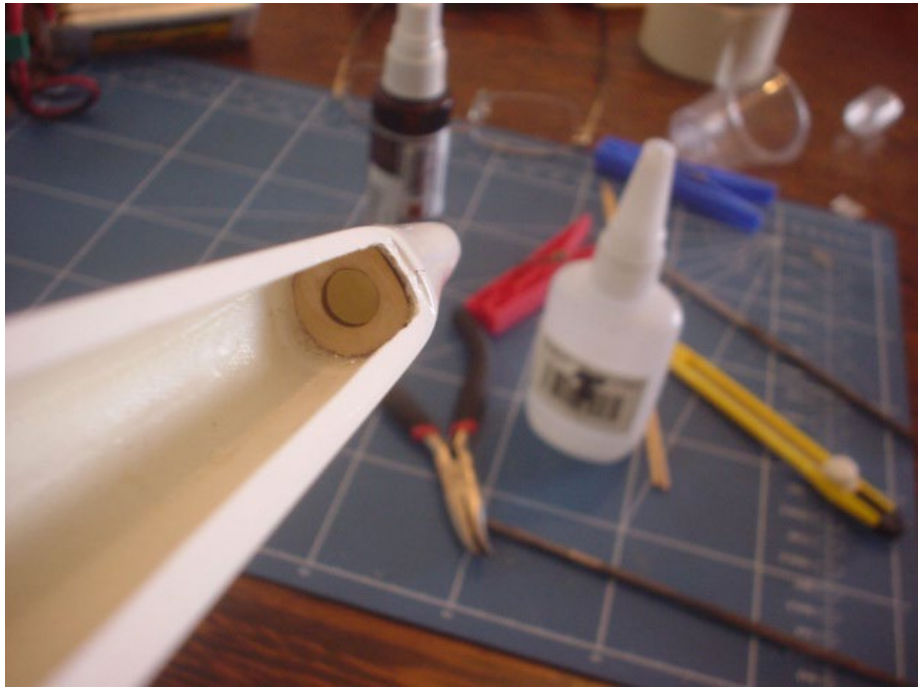
felt adventurous… I wrapped some masking tape around the end, and marked the middle and top. With a cutting disc on my Dremel I made the first cuts, followed by some elbow grease and a flat file to open up the slits, and produced three straight openings for the horizontal and vertical stabs to slide into. (As I mentioned some time ago, do make sure you wear a facemask when doing something like this; carbon fiber dust can be dangerous!). When all was straight and true, I filed the end of each slit round to prevent cracks appearing, and wrapped the tube with some dental floss (the unwaxed type) and thin CA.

As I threw away the pushrods, I decided to make (for me) a drastic change. No pushrods! I've been reading about this spring/pull system which only needs a string between the servo and the moving surface. Reading up on this on RCGroups it all looked really simple, and it was. For a spring, I used a 0.5mm piece of pushrod (which I had with my spares), cut to size, and bent at both ends to a 90° angle. The rudder was folded back, lying parallel with the stab. One end of the bent piece of wire was inserted in the trailing edge of the fin and the other end into leading edge of the rudder. Testing this I found I needed a lot of force to push the rudder both ways by hand, so I took the wire out again, and bent it so that the rudder would spring to about only 50°. That felt much better. A small drop of thin CA was applied to both sides of the spring, and I repeated the same steps for the elevator.

Both the rudder and elevator had a 2mm wide pre-cut opening for the control horn. I took two pieces of 1mm lite ply and sandwiched a strip of carbon fiber cloth in between. From this I cut two control horns, and CA'd them in the rudder and elevator, making sure the hole was on the hinge line.

With this done I fitted the vertical onto the horizontal stab (there are tabs & cutouts for this) and (thick) CA'd them in place, of course making sure they were at 90° angles. When the CA had cured, I added on both sides of the vertical stab a tiny CA-and-micro-balloons fillet. With this cured, all I had to do was





slide the tail group into the slots of the tail boom and add a few drops of thick CA.

Next steps were for the pod. I drilled (by hand) holes for the CF wing hold down rods by hand, because as you may realize by now, the pod has the strength of an eggshell. I pressed the CF rods through the holes, and re-enforced the inside of the pod with plenty of thick CA. This took a long time, because I had to hold the pod on its side while the CA was curing. Wait for the CA to cure, turn over, repeat. I didn't want to use kicker here so as to get maximum strength out of the CA.

I now could attach the wing to the pod to trial fit the boom. Not so fast! While fitting the wing to the pod with (new) elastic bands, I realized the wing's trailing edge would very quickly get damaged by the elastic bands. So I glued (Epoxy, CA didn't hold on the plastic shrink covering) a 1mm piece of lite ply onto topside of the wing's trailing edge root area.

NOW I could trial fit the boom…

With the wing on the pod, and a spirit level on the wing, I placed the pod level on the table. To keep both sides level and in place, I first placed CD/DVD boxes under both sides and then taped the whole kit-and-caboodle to the table with masking tape. I then slid the tail boom inside the pod (a good tight fit), and made sure the tail was absolutely horizontal as well.

And then I could take it all apart again because I forgot to glue in the piece of ply that should be in the rear of the pod to hold the tail boom in place. Plus, I also forgot to lightly sand the carbon fiber in all areas where glue will be applied! The down side of building without instructions?!

Some excess fiberglass deposits inside of the pod had to be removed before I could fit the ply. I fixed it with a touch of thick CA on the front side. After that I dropped some thick CA with a dropper through the tailboom opening at the rear. I sanded the end of the tail boom, and wound some masking tape around the boom just behind where the boom would enter the pod, and

then re-assembled the wing, pod and boom again on the table. When all was leveled, centered, checked, and double checked, I drew a mark from the pod on to the boom. I dribbled some medium CA where the boom meets the pod and fixed it with a shpritz of kicker. Then, with thin CA, I saturated the ply ring inside the fuse to fix the boom permanently. I let this cure by itself (no kicker here!).

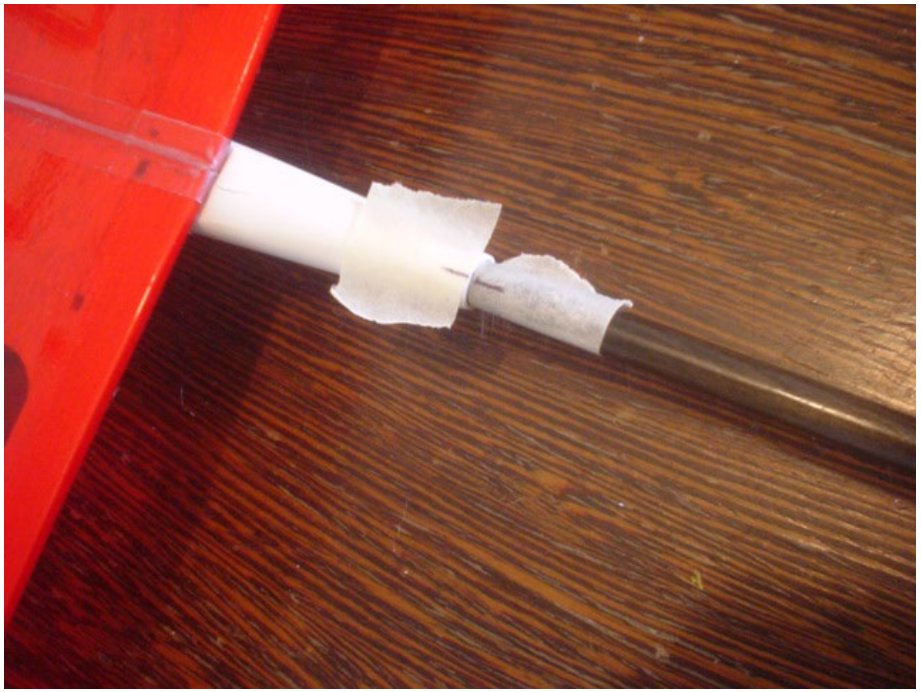
Right then, on to the electronics. This was very straight forward. I cut the lug of one side of each 9 gram servo, butt glued them together and put some tape around them. Two pieces of hardwood were glued inside the fuse, and the servos screwed in between the two. A MICRO5 Rx fit right behind them, and a 4-cell KAN 300 battery pack in the nose.

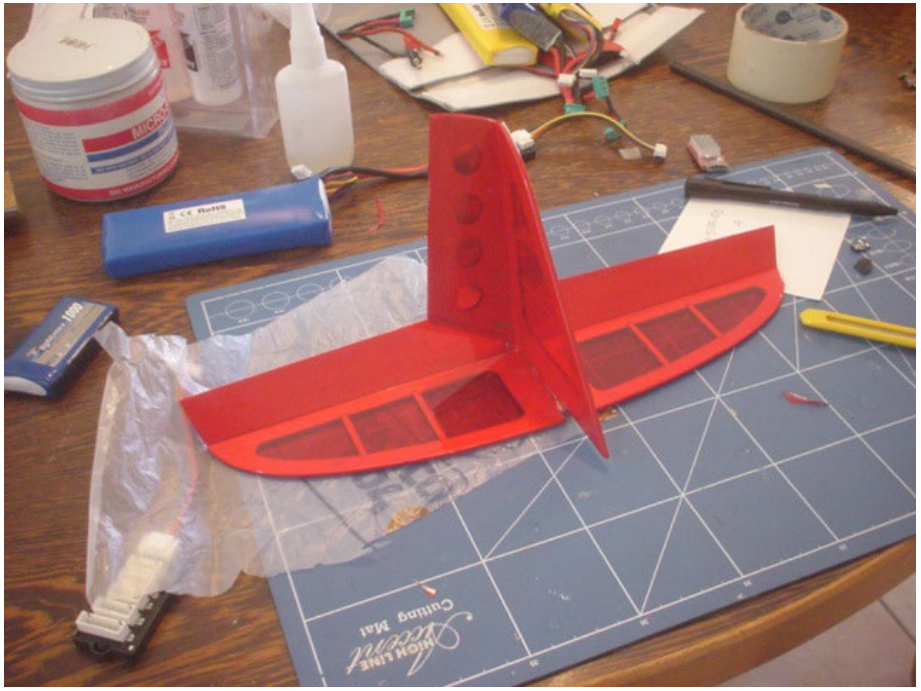
I drilled two holes in the tail boom, filed them at an angle, and inserted a small piece of pushrod housing so the pull wires won't chaff.

The wire to do the pulling is 50lb. Stealth Spider wire that I got for my Su33 rudder's pull/pull system. Light, flexible, easy to knot and very, very strong. One end of the string was taped to the end of a piece of scrap pushrod (yes, the one that came with the kit…) and guided through the hole to the pod. Cut to size, and repeat for the second string. To keep the moving surfaces straight while attaching the pull string, I bound two pieces of scrap hardwood together with rubber bands at either end and placed it over the stab and elevator/rudder.

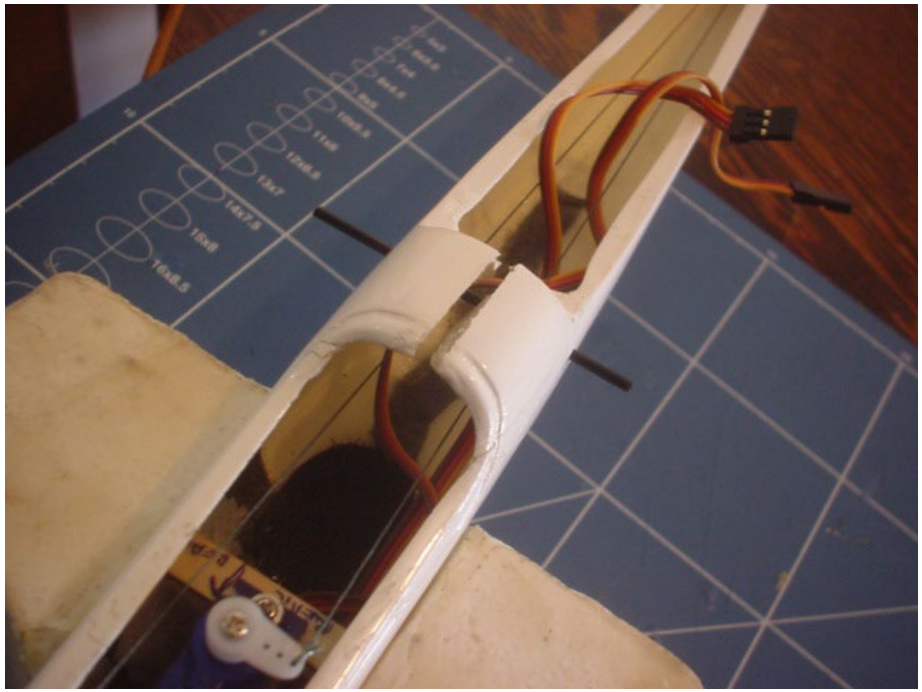
With the moving surfaces held in place, it was a breeze to knot the string first to the servo (after centering the servo), and then tighten the string and knot at t'other end. A good tight knot, and a tiny drop of medium CA will keep it all in place.

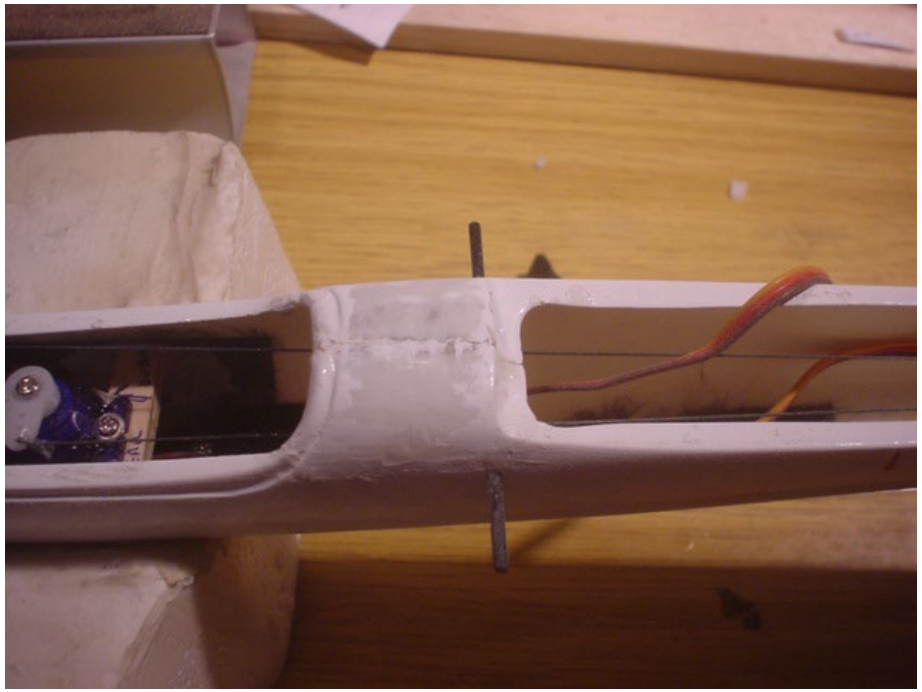
That's it! Balancing showed I had to add some lead to the nose, so took about half of the lead pellets I needed, put the pod on its nose, added the lead and poured some runny finishing epoxy in the nose. I let that cure overnight. Now I was ready for some test chucking!

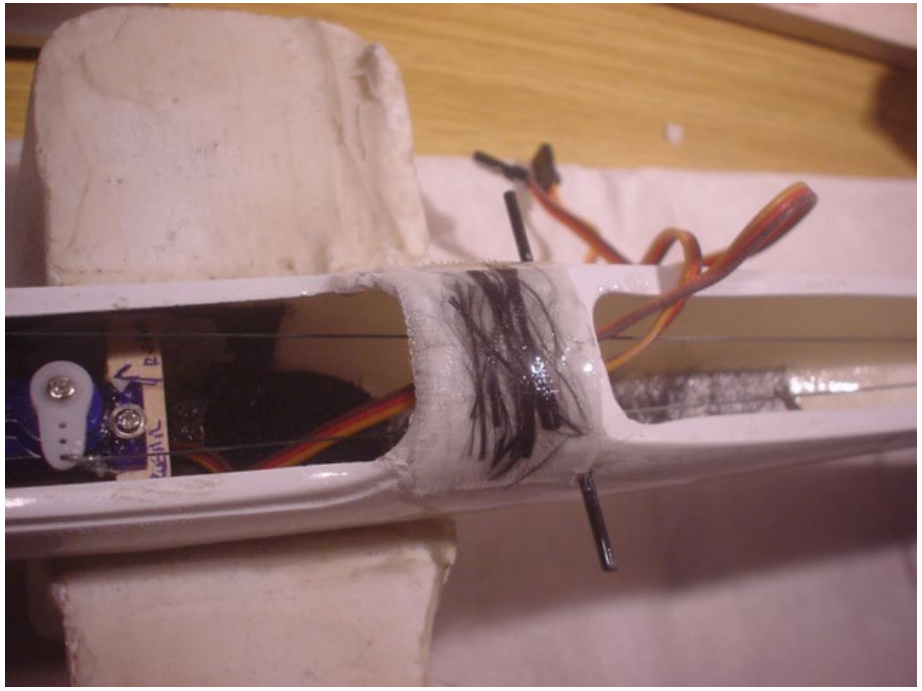





Canary







One sunny morning, after dropping my wife off at work, I drove to a nearby field. First throw (into the wind) ended in a good impression of a lawn dart. Entirely my fault due to stupid fumbling with dumb thumbs. No damage to the wing, but (not surprisingly) the fuse had some serious damage. The top seam of the fuselage, just in front of the wing saddle, had totally separated. Nothing to do but to go home again.

I sanded the inside of the fuse top and the seam lightly, and CA'd the seam together. Once cured, I removed the gelcoat with my Dremel, cleaned the area with alcohol, and epoxied some carbon fiber strands across the seam, topped with a piece of light fiberglass cloth. Once cured, I wrapped the fuse with some unidirectional fibertape.

Back to the field we went…

No dumb thumbs this time, and some gentle throws showed a nice shallow glide. I felt I needed to add some more throw on the rudder, but the elevator was fine. Maybe a bit nose heavy.

A week later I had the opportunity to go slope soaring, so obviously the Canary came with. The 8 knots wind was not straight on the slope, but good enough. After a short flight with my WeaselPro, the Canary got some airtime.

Put simply; she's a real sweet little glider. Because she's so light, she's very sensitive to changes in the air. The unsuspecting pilot might get caught short here (more proof this is not a beginner's glider). I would prefer the rudder to be more responsive (may enlarge it later on). But I really enjoyed flying her.

Final conclusion? The wing and tail group are real good quality stuff. The tail boom was just badly cut, some of the accessories didn't fit, were wrong, or broken. The pod is really bad quality fiberglass. But I still say it's money well spent…

Next step will be a tow hook, and a light hi-start. Can't wait!

Canary SQ at the HobbyKing US warehouse <http://www.hobbyking.com/hobbyking/store/__16850__Canary_SQ_Fiberglass_and_Balsa_Ply_Glider_KIT_USA_Warehouse_.html> US$43.38.

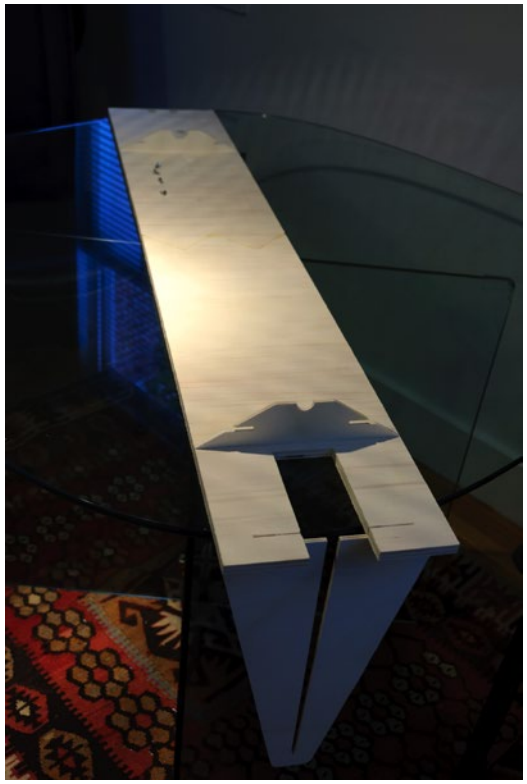
Maxa jig and template

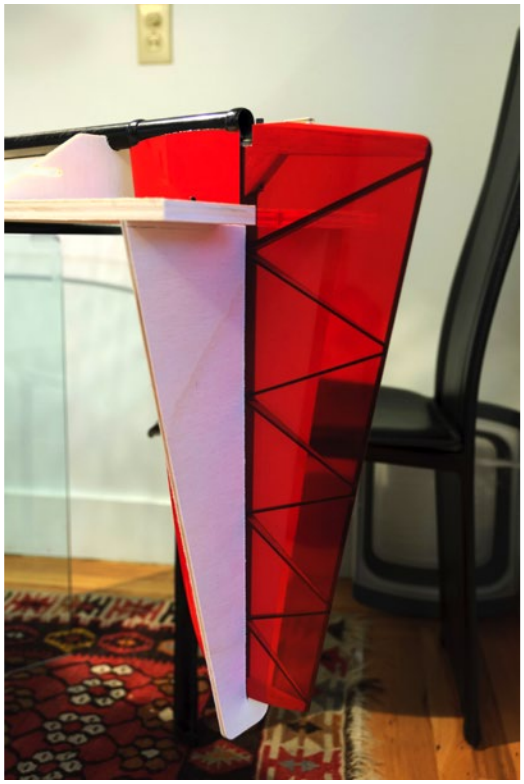
Francesco Meschia, francesco.meschia@gmail.com

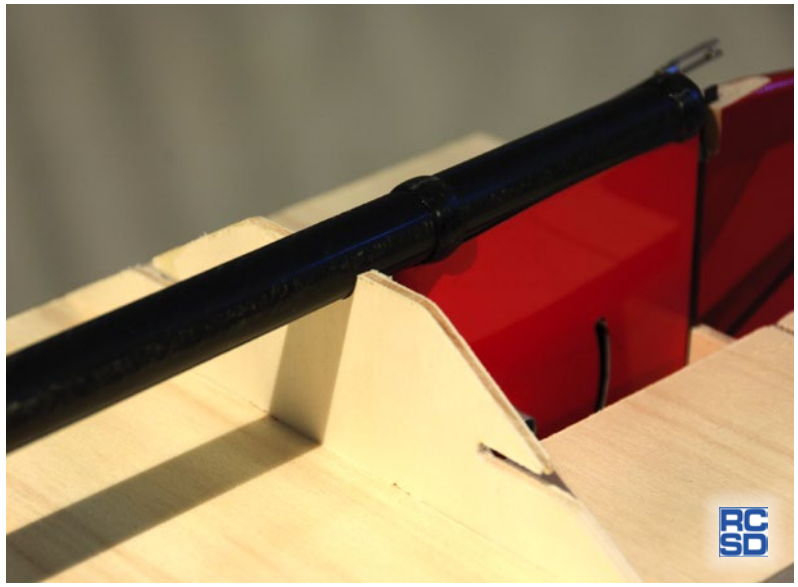
Credit for the fuselage jig concept goes to Massimo Verardi and to Denis Truffo, a friend of mine in Italy, for designing and CNC milling it.

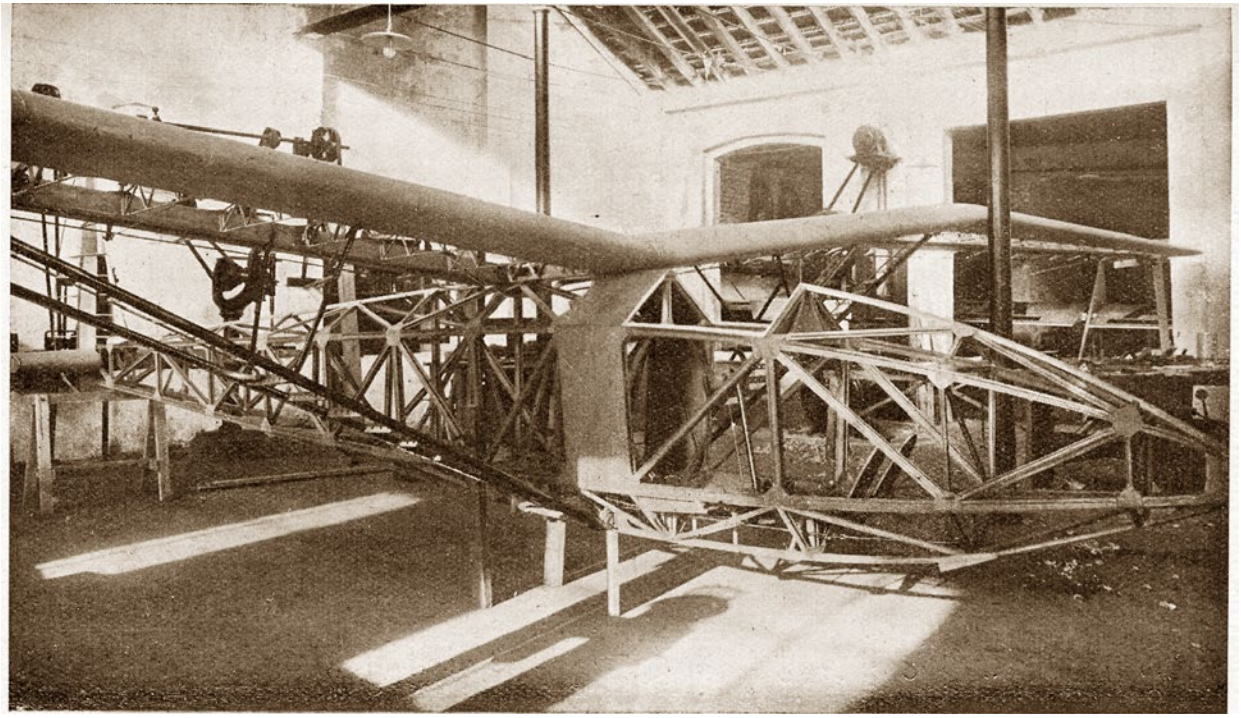
It simply clamps the boom and the pod of the Maxa fuselage to ease the alignment task (which should always be cross-checked by using a string attached to the nose and tail of the model). Screws and elastic bands keep evertything in place while the epoxy resin cures.

As for the control surface throw template, It's CNC-milled from 5mm plywood, the scales are simply glued onto both sides. When you need to measure your aileron or flap throw, you simply slide it over the wing and read directly the throw in degrees. I designed them for the Maxa, the Supra, and the Pike Perfect, and we're planning to mill them from Lexan, so that they will be like a plastic ruler.









Michael Kelly's BS2 Balestruccio

Submitted by
Vincenzo Pedrielli,
vincenzopedrielli@gmail.com

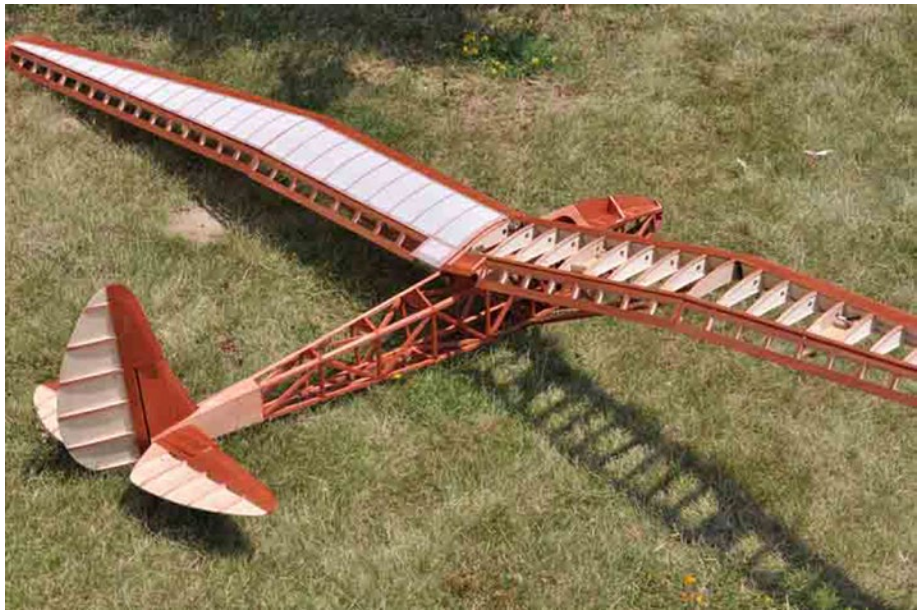
I'm sending a few pictures of the first model, so far as I know, taken from my book, Italian Vintage Sailplanes/Alianti Italiani d' Epoca.

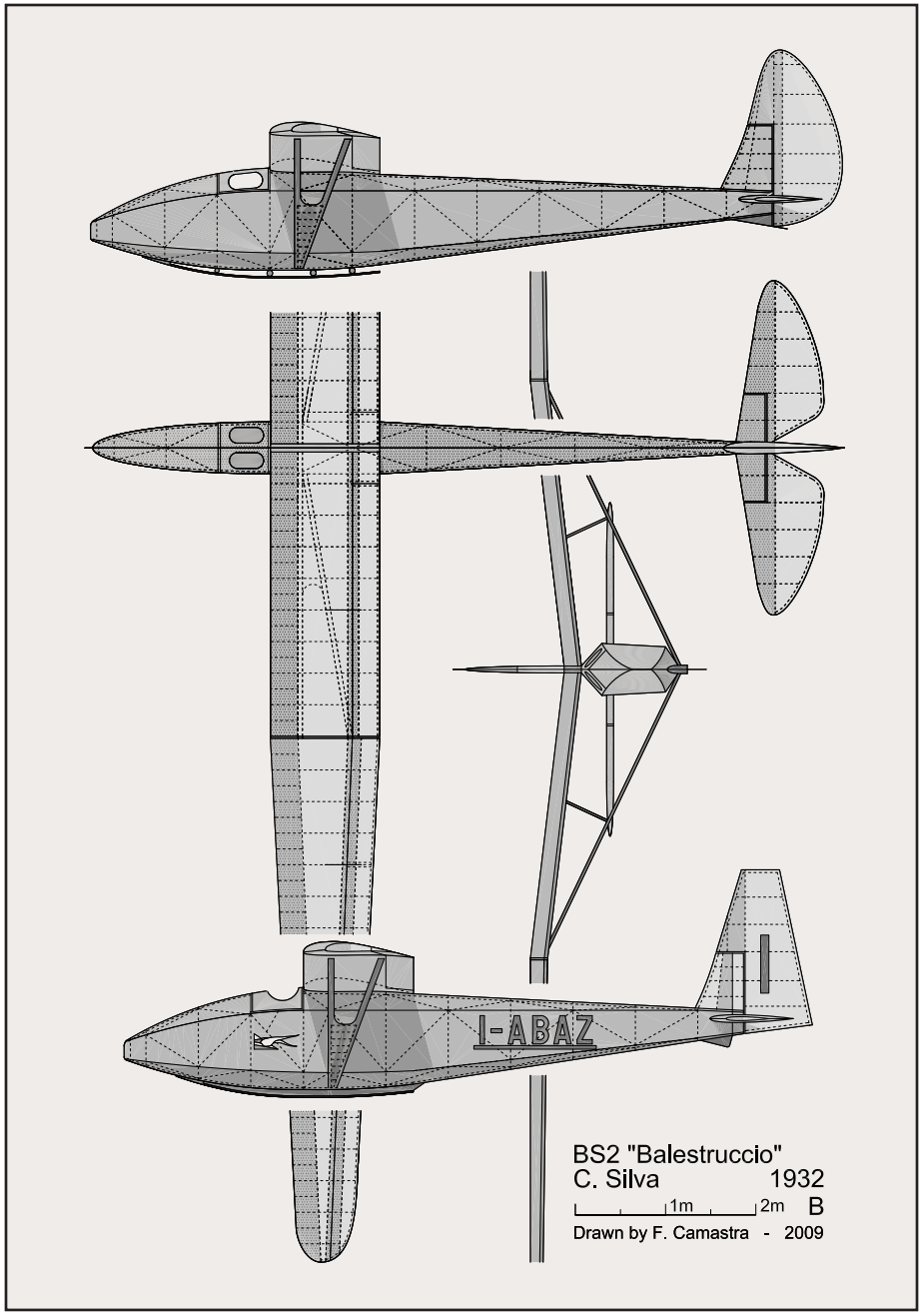
This model of the BS2 Balestruccio is being built by Michael Kelly, an American friend.

The original had a span of 18 m and a wing area of 17.14 m^2 with an aspect ratio of 18. Total weight was 205 kg, giving a wing loading of 11.50 kg/m^2. The estimated glide ratio was 24:1.

On December 18 1932 the BS2 Balestruccio, piloted by Enrico Rolandi, set a national (Italy) record flight of 25 minutes and 48 seconds while covering 15.7 km.

BS2 Balestruccio 3-view from Italian Vintage Sailplanes/Alianti Italiani d' Epoca. Pedrielli, Vincenzo and Camastra, Francesco. EQIP, Bonn. 2011. pp.70-72. Used with permission.




I-ABAZ
BS2 "Balestruccio"
C. Silva 1932
1m 2m B
Drawn by F. Camastra - 2009

For Immediate Release

World Gliding Championships Return to the United States!

Uvalde, Texas, June 12, 2012—This summer in southwest Texas, from the 28th of July to the 19th of August, the sky will be full of sailplanes, and the airwaves filled with the languages of more than 23 different countries, as 120 pilots from around the world compete at the 32nd World Gliding Championships.

Hosted by the Soaring Society of America and sanctioned by the Federation Aeronautic Internationale, the Championships will be held at Garner Field, a city owned public airport located three miles east of the central business district of Uvalde, Texas. The facility is named for John Nance Garner, the 32nd Vice-president of the United States.

Gliders, or sailplanes, are motorless craft that use only the power of the sun, terrain and weather to stay aloft. Towed aloft by powered craft, gliders are hand made to exacting specifications, utilizing high tech materials and computer analysis for optimum performance. In the hands of skilled pilots, racing gliders can fly hundreds of miles at speeds reaching 130 mph.

The World Gliding Championships are the Olympics of glider racing and bring teams from around the world to Uvalde for only the second time, ten years apart, to compete in three classes; 15 meter (49.2 feet in length), 18 meter (59 feet) and Open Class (unlimited wing length) for the title of world champion, awarded in each class. The current world champion, Michael Sommer of Germany, flying in the unlimited class, will be challenged to keep his crown by a unique new glider, pilot, and design team.

U.S. Team member Dick Butler, an aerodynamicist by profession and sailplane designer extraordinaire and Gerhardt Waibel, have teamed up to build a one-off Open Class ship to challenge the best the world has to offer. This glider has been designed for competition only, not production, where design compromises need to be made in order to fill multiple roles. Similar to a Formula 1 racecar, the design is only for racing, not for any other use. The glider is the result of a dream begun 10 years ago. It's called Concordia, and it's now ready to challenge the best the world has to offer.

Visitors are welcome to come to Uvalde to see all of the action up close and witness the power and drama of high competition soaring. Watch as the entire field of more than 120 gliders launch into the air to challenge each other in daily tasks, covering hundreds of miles over the 14 day contest. Witness

the thrilling finishes of the sailplanes as they return to cross the finish line at high speed.

For spectators there is much to do, as the City of Uvalde will host the event with vendor booths, food and merchandise, and the SSA booth, where one can discover the sport of gliding for themselves. For more information about the event, please go to <http://www.wgc2012uvalde.com>.

To discover more about soaring, go to <http://www.letsgogliding.com> or <http://www.ssa.org>.

For further information call Andrew McKittrick at 805.492.6100 or amck@resonatemktg.com