Radio Controlled Soaring Digest

Feb[illegible]16 Vol. 33, No. 2

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February 2016
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Front cover: Chris Williams' 1:3.5 scale Rhonadler 35 in action at the Wessex Soaring Association's 'Oxo' slope. Canon EOS 70D, ISO 100, 1/1000 sec., f4, 100mm

Back cover: Announcing the 4th World Masters GPS-Triangle, Gruibingen, Germany, 20 - 26 August 2017.

R/C Soaring Digest

February 2016

Volume 33 Number 2

Managing Editors, Publishers — Bill & Bunny (B^2) Kuhlman

Contact — bsquared@rcsoaringdigest.com
http://www.rcsoaringdigest.com
Yahoo! group: RCSoaringDigest
FaceBook: https://www.facebook.com/RCSoaringDigest

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

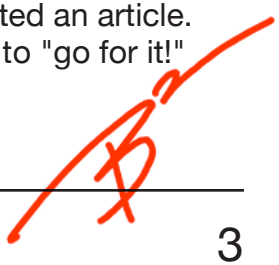
RC Soaring Digest ended 2015 with the addition of its 3,000th member to the RCSoaringDigest Yahoo! Group. This milestone was reached on the morning of December 29 and makes the *RCSD* group one of the largest of the Yahoo! groups.

For those not familiar with the RCSoaringDigest Yahoo! Group, becoming a member allows you to receive announcements when a new issue is put on-line, in addition to a submission deadline reminder one week before materials are due. Oh, and one other thing... You have access to the highly compressed versions of all issues going back to the formation of the group in September 2011. These versions, due to a Yahoo! limitation, are always less than 5MB in size. These smaller files are obviously the way to go for those with tolled internet connections.

And speaking of archives, we recently received word that *Aviation Week & Space Technology*, with the sponsorship of the Boeing Company, has opened an archive containing all of the magazines published from their beginnings 100 years ago. This is an incredible resource for RC soaring enthusiasts, particularly those interested in PSS (Power Scale Soaring). For the details, including the archive web link, see the full announcement which we've reproduced on page 8.

Lastly, we are always looking for photographs and articles with a technical bent for future issues. If you're wondering how critical the editing staff is, we can tell you that since taking over the editorial reigns in mid-2004 we have never rejected an article. With this in mind, we very much encourage you to "go for it!"

Time to build another sailplane!



LilAn Omega Part 1

Chuck Anderson, chucka12@outlook.com

In the beginning, everybody had to be a builder to be a flier.

It is now possible to start out with a ready-to-fly sailplane such as the Radian and work up to the very high performance molded sailplanes built in eastern Europe without building anything. All it take takes is a valid credit card.

I have observed that those who actually build their models have a better understanding of trimming and flying their models. All the real experts I know can design and built their models although those who compete at the highest level may not have time to build all the models they need. Most of them designed and built the models that helped them become experts.

Everything, including tents and trash bags, go up if the thermal is strong enough. My physical handicaps now

LilAn Alpha 2001

LilAn II 2006

made it difficult for me to fly high performance sailplanes in distant thermals so I designed a sailplane with emphasis on finding and working the thermals I could reach. I described how I did that in “Designing For The Three Abilities” in the February 2014 issue of *RC Soaring Digest*.

The LilAn uses a linear approximation of elliptical dihedral because I liked the handling qualities it brought to RES sailplanes. My experiments with nonplanar wings were reported in the June 2013 issue of *RC Soaring Digest*.

The tail is cruciform for ease of transmitter programming and simple pushrod installation. See Linkage 101 in the February 2014 *RC Soaring Digest*.

The stab is 15% of wing area for good pitch damping. I evaluated stab size about 30 years ago by flying a model

with various size stabs and found that the advantages of big stabs outweighed the disadvantages when stability is important.

Handling qualities were refined by modifying fin/rudder area and wing dihedral of the prototype LilAn until flying qualities met my requirements.

In 2006, LilAn II was a further refinement with a new fuselage and carbon fiber wing spars as developed by Mark Drela for his Bubble Dancer. The AG35 airfoil is also from the Bubble Dancer.

The wing structure is not Bubble Dancer but rather a refinement of classic sailplane wing structures as used in the Paragon and Sailaire. Except for the carbon fiber wing spar, LilAn could have been built forty years ago.

Mark Drela's articles on the Charles River RC Club web site are a good source of information for the scratch builders. <http://www.charlesriverrc.org/articles.htm>

In 2006 I still flew a lot of contests and flew unlimited with a Compulsion and RES with a Super Ava. When I was able to outperform the Ava with LilAn, the Ava became my backup RES model. I eventually sold the Ava and built another LilAn

LilAn Omega 2015

for backup. When I found that I could score as well flying LilAn in Unlimited, the Compulsion became my backup unlimited sailplane.

LilAn was used to illustrate building wings without laser cut ribs and without plans in an RC Groups thread <http://www.rcgroups.com/forums/showthread.php?t=699593>. Six LilAn II and one electric LilAn have been built since the RC Groups thread and a number of improvements have been made to simplify and speed up construction. No aerodynamic changes have been required.

LilAn Omega 2015

Charlie Bair has written a CAD file to laser cut the ribs and has provided it to *RC Soaring Digest* for downloading.

I have built LilAn Omega around a CLM Pro fuselage. The LilAn II prototype was built from my stock of balsa that had been picked over for the best wood and cost less than $100 for fiberglass, carbon fiber, epoxy, and covering materials.

Adding new balsa, laser cut ribs, CLM Pro fuselage, and inflation increased the cost to about $600; still less than the equivalent Ava.

I have received requests for LilAn plans that never existed and the fuselage that was never produced. Now that a commercial fuselage and laser cut ribs are available, I decided to present a multi-part construction series.

This version of the LilAn is built almost entirely of balsa except for the spar caps, wing joiners, and fiberglass fuselage. The fuselage is pod #131 and boom #209` from CLM Pro while all composite materials are from Composite Structures Technologies.

Nothing new here and it will illustrate the use of classic building techniques used by scratch builders for many years but may not be familiar to new fliers who buy ready-to-fly or ready-to-assemble models.

The next part of this series will cover building the wing.

Sources:

Fuselage	clm-pro.com
Composites	cstsales.com
Ribs	bhplans@aol.com
Balsa	nationalbalsa.com

Digital Archive Launched, Chronicles 100 Years of Aerospace Achievements

Jan 6, 2016

Aviation Week & Space Technology

Aviation Week & Space Technology launched its 100-year digital archive today in collaboration with Boeing, the sponsor of the archive. Both companies trace their roots to 1916. The archive includes 4,500 issues and nearly 500,000 pages of articles, photos, and advertising. It can be seen at <http://archive.aviationweek.com>.

“Aviation Week’s legendary scoops are all there,” said Editor-in-Chief Joe Anselmo. “But the archives also are a treasure trove on the history of our industry that readers can dive into and will have a hard time pulling themselves away from. The breadth of information on aircraft, spacecraft, and technological leaps is breathtaking and the old advertisements are quite revealing.”

Aviation Week traces its roots to August 1, 1916, when Lester D. Gardner published the first issue entitled Aviation and Aeronautical Engineering to “provide the aeronautical profession with the latest and most helpful technical information.”

“It is really something to think that Aviation Week has been published consistently for 100 years,” said Greg Hamilton, president, Aviation Week Network. “That one publication is now part of the Aviation Week Network, one of the largest aviation information companies in the world that has more than 1.2 million users.”

“Aviation Week’s archive is a gold mine of inspiration and education,” said John Tracy, chief technology officer, Boeing. “There’s so much to learn and enjoy in this authoritative and remarkably illustrated archive – it is literally the journal of the aerospace industry and its impact on the world. For Boeing’s centennial year, we aim to celebrate our rich legacy and more importantly inspire a new generation of aerospace visionaries. Helping expand Aviation Week’s content into a digital format is a great example of how we are achieving that goal.”

The archive can be viewed by anyone who visits the site and can be searched by year, event, company, personality, or author. Among the many interesting features: a Viewpoint from Orville Wright calling for “distinctly marked and carefully prepared landing places,” the precursor to the airport, a letter to the magazine from Italian dictator Benito Mussolini, the revelation of “Project X,” which became the Boeing 707, pilot reports on hundreds of civil and military aircraft, and the Apollo 11 moon landing, which was featured on eight of the magazine’s covers in the summer of 1969.

View the archive online:
http://archive.aviationweek.com


Hacker Model
Swift S-1
Pierre Rondel, pierre.rondel@gmail.com
SWIFT S-1
HACKER

Fly EPP with style!

Introduction

At the last toy fair 2015 in Nuremberg, and following the success of the Vagabond, Hacker Model had plenty of new gliders to display.

This is actually an original proposal where the same aerodynamic concept is available in four different semi-scale models (Blanik, Swift, Fox, Lunak) and available in various colors to suit all tastes!

I propose you today the review of the Swift from this SKG product range.

1

Kit Overview

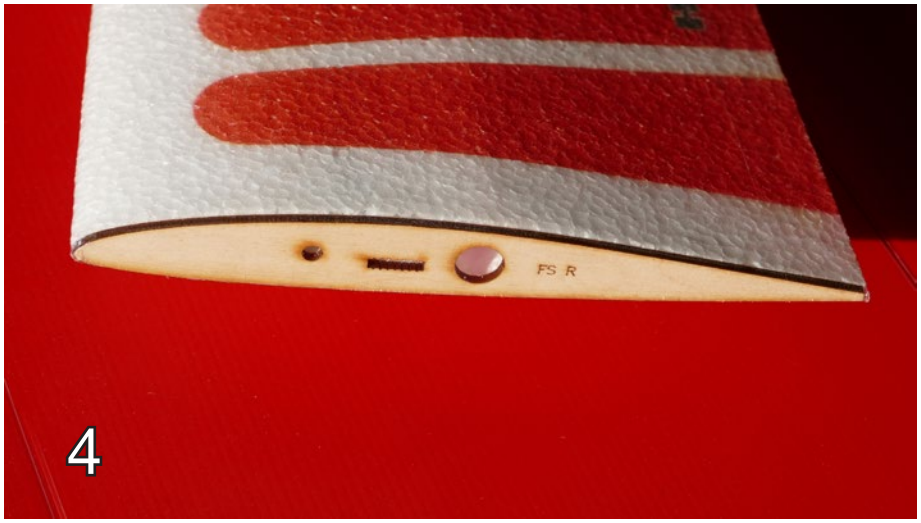
The Hacker Model kit is without doubt what is the best on the market of hot-wire cut EPP models.

Carefully packed (Photos 1 & 2), we discover firstly the wings, decorated covered wings with a laminate film, pine spar (Photo 3) and plywood root rib already in place (Photo 4). Servo prints are done and the servo wire tunnel also. The tail and fin are delivered articulated but uncovered.

The fuselage is also decorated but not covered with laminate film. Various cuts are already made, either for the fin or the tail, for the wing root print and the radio housing (Photo 5).

2

3



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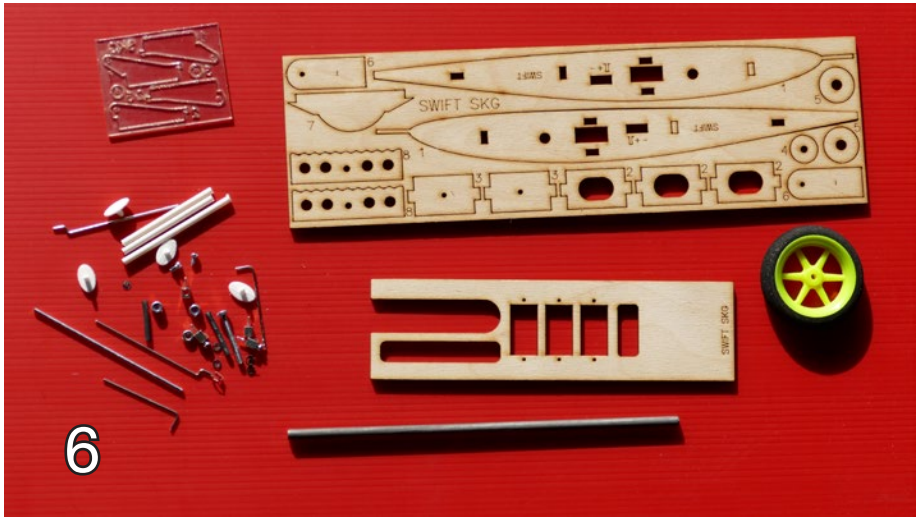


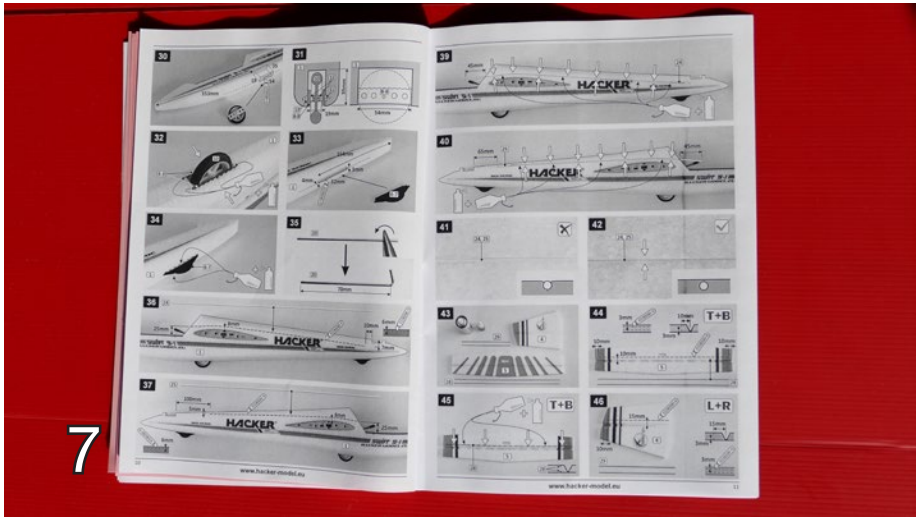
6

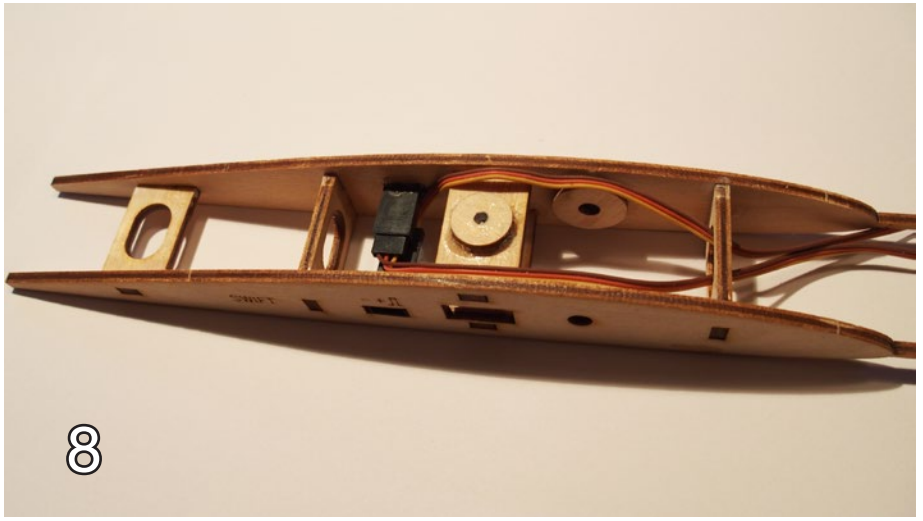
The complete hardware includes CTP laser cut parts, thermoformed canopy in black plastic, screws, the piano wire joiner, a plastic and foam wheel, without forgetting the piano wire control rod and plastic sleeves (Photo 6).

As is often the case for Hacker Model kits, assembly instructions consist of mounting pictures without text. It is easy to follow and clear (Photo 7).

Assembly

The assembly is done in 2 or 3 evenings, without stress. I did all the gluing with “foam safe” cyano except for wood parts where I used normal cyano.





Because of the position of the radio housing and canopy, the Swift proposes an interesting mounting and locking system, rather sophisticated but very well designed.

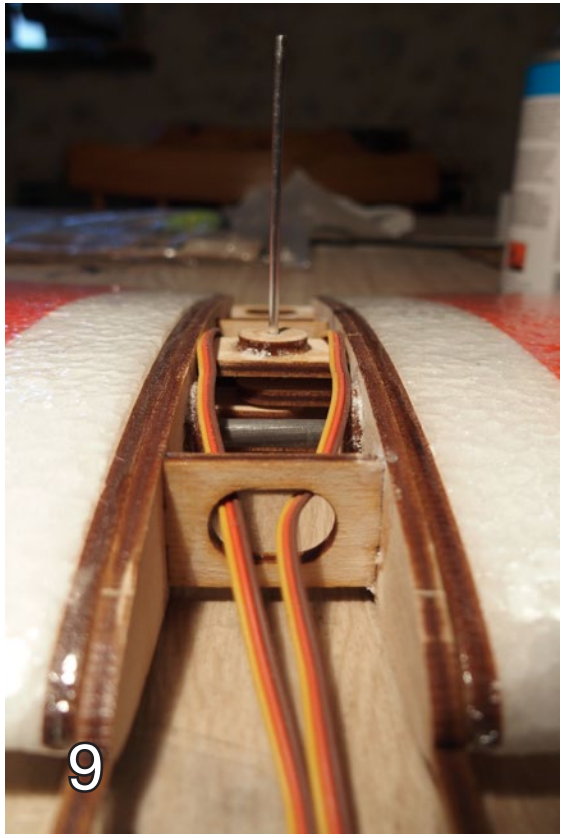
The assembly starts with the wings locking system that is to be assembled from parts laser cut plywood (Photo 8). You will need to be careful and do a trial assembly to verify the perfect alignment of the holes in which the CAP will slide to lock the wings, which is the main difficulty. Do not forget to prepare and glue the servos extensions in place.

Let's continue with the fuselage. First proceed to the alignment of the wing and glue the wing mounting system in place (Photo 9).

Next, insert and glue the reinforcements along the fuselage, taking care that the fuselage stays straight, then cut an opening into the fuselage to insert the wheel. Ditto for elevator and rudder control sleeves.

Next we can move to the tail and fin: They are reinforced with a carbon flat rod inserted in a cut made with a cutter. Then we can proceed with the gluing of the tail and fin on the fuselage (Photo 10), using cyano and activator, and being cautious with its positioning and alignment, just to have a well-balanced and symmetrical glider that will fly straight.

The rest of the work consists mainly in the radio installation which remains very usual.



10

11

A plywood tray receives the 9 to 12 gr servos — Tower Pro MG90 Servo 9g metal in my case. The receiver is located behind the servos and should be small size (Photo 11).

On the wings, few work apart preparing the servo lead extensions and glue them in place, then finish the control command with the accessories.

To obtain the right CoG, I had to use a pack of 4 NiMH AAA batteries, contrary to what is indicated in the instructions — 4 NiMH AA 1900mah — and which is far too heavy for the plane.

It is interesting to stiffen the wing servo extensions at the root so that they can move easily into the wire tunnel. For this I used some heat shrink (Photo 12).

Good surprise on the scale, with a flying weight of only 702g to be compared with the 780gr mentioned in the building instructions. It's rare enough to be reported!


12

At the slope

The maiden took place on a nice slope but with a strong wind. Not ideal for this light Swift but it fought with honors. This already helped to see that there are not enough aileron and elevator movement and also the CoG is a little too forward.

Other sessions were held in ideal conditions, from very little wind to medium breeze. I was surprised by the thermal capabilities that I do not necessarily expect on a model like this one. I remember a flying session in the Vosges with many Alula EVO and TREK around, and the Swift was doing rather well, far from ridiculous.

Its preferred conditions remain the light to medium breeze. The Swift then delivers lots of fun, first of all by its presence in the air and its semi-scale look. I'm never tired to do low altitude fly-by in front of me.

Control on all axes is precise and efficient but not violent. Piloting remains easy. The dihedral and lateral surface of the fuselage provides good stability in trajectory.

The rudder is effective under all circumstances and especially when circling or doing aerobatics.

Despite its name, the Swift is not really an aerobatic model, but is capable of all basic academic aerobatics: rolls and inverted flight is no problem. The vertical maneuvers like reversals, looping, suffer from lack of amplitude due to the low weight of the machine, nothing abnormal.

The landing even without airbrakes is very simple, because the 700g glider is easy to slow down.

Finally, nothing better than a short video of the Swift in its element:

<https://youtu.be/ylkbP9Mni1s>

Conclusion

The Swift from Hacker Model is a very nice glider, the kit of very good quality.

The plane is for intermediate level pilots who are looking for a compact glider which looks great in the air and with good handling qualities.

And if the Swift does not catch you, you still can choose a different look — like the Fox, Blanik, or Lunak.

I liked:

- Very nice looking EPP plane in the air
- Wing mounting and locking system simple and efficient
- Integrated plug in the wing root

I disliked:

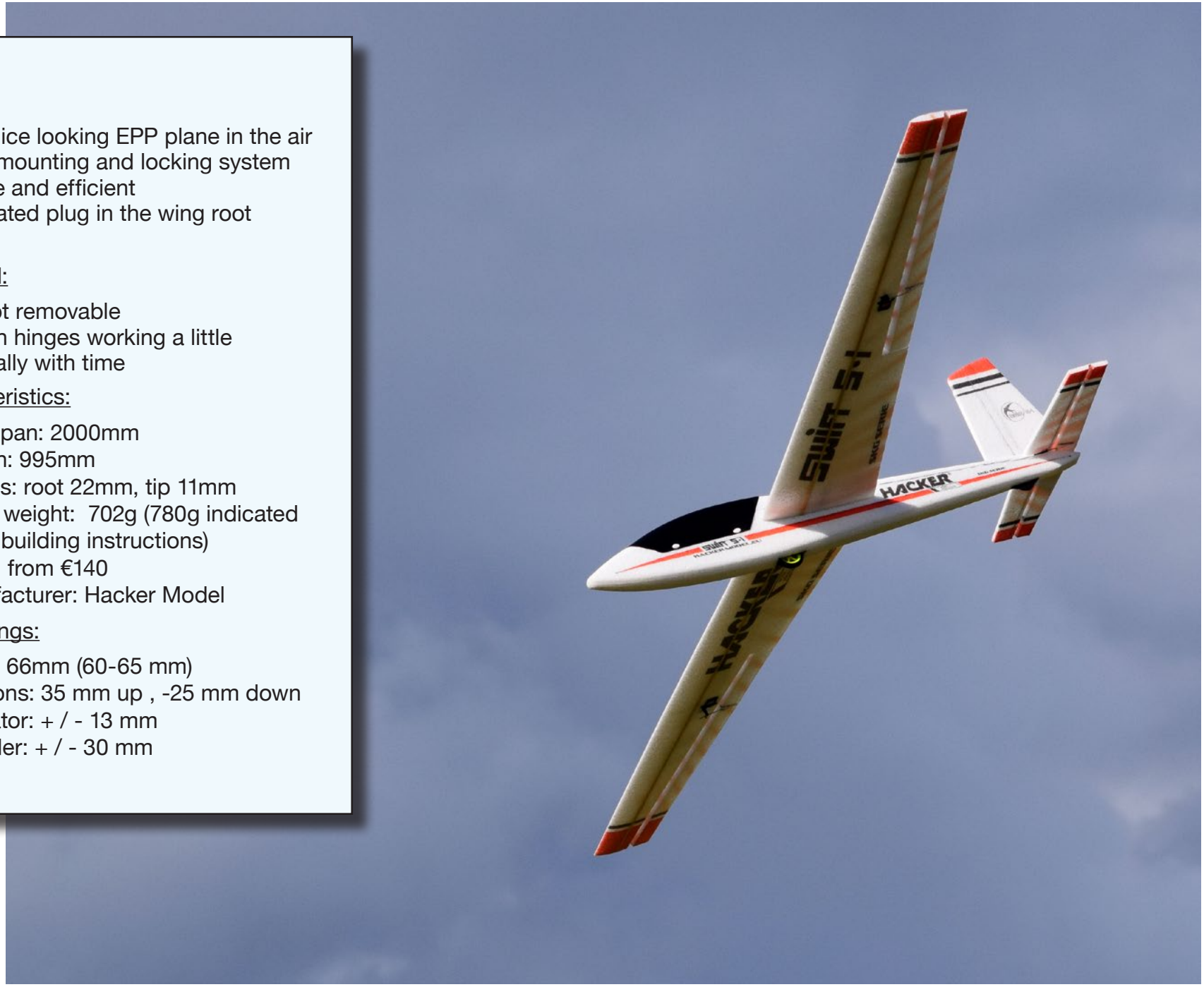
- Tail not removable
- Aileron hinges working a little vertically with time

Characteristics:

- Wingspan: 2000mm
- Length: 995mm
- Chords: root 22mm, tip 11mm
- Flying weight: 702g (780g indicated in the building instructions)
- Price : from €140
- Manufacturer: Hacker Model

My Settings:

CoG: 66mm (60-65 mm)
Ailerons: 35 mm up , -25 mm down
Elevator: + / - 13 mm
Rudder: + / - 30 mm




HACKER
SWIFT 5:1
HACKER
SWIFT 5:1


HACKER

Having fun with the Swift on the slope!


SWIFT S-1
HACKER


HACKER
Swift S-1
SWIFT S-1
SHD SERIE

Velika Planina – Alpine Soaring

Soar High... The Mountain is calling you...

Gorazd Pisanec, gorazd.pisanec@siol.net

Velika Planina (Big Pasture Plateau) is a dispersed high-elevation settlement of mostly herdsmen's dwellings. It is located in the Kamnik Alps in Upper Carniola region in Slovenia, relatively close to the capital city Ljubljana and only a few kilometres from the town Kamnik. You can reach Velika Planina by the cable car or on foot. Elevation of Velika Planina is around 1,600m (5000ft).

You can visit the herdsmen's settlement and feel the simple way of the herdsmen's lives, taste their dairy products and admire the unique architecture of the cottages which define Velika Planina. To those who are more active, the mountain offers ideal possibilities for hiking, various mountain-cycling tours and, most important of all, SLOPE SOARING.

Slope soaring on Velika Planina is possible all-year-round, but the best time is from June until August. These months offer warm temperatures and lots of sunny weather. We slope soaring enthusiasts usually visit the slope twice per year, in the beginning of July and in August. A few years ago, an F3F competition was also organized there.

There are two main slope sites on Velika Planina. One is located at Zeleni rob and the other at Poljanski rob. We normally fly at Poljanski rob which is quite close to the mountain lodge Domžalski dom.

As mentioned before, you can reach the slope by cable car or on foot. You need around one hour to reach the slope Poljanski rob by cable car. When you reach the final cable car station, you still

Herdsmen's cottages on Velika Planina

Two rainbows over the mountain lodge

need half an hour of walking to get to Poljanski rob.

We usually go on foot and leave the car in the parking lot in the woods. There are two hiking trails leading to the slope. One has a steeper trail and it takes about half an hour. The other is gently rising and it takes around one hour to get there.

Luckily, there is a mountain lodge only 300m away from the slope Poljanski rob where you can rest and refresh. We generally go to Velika Planina over the weekend. Accommodation is really cheap and one night only costs 22€ per person or less. They serve traditional food and drinks. Repairs of models and battery charging can be done in rooms.

Slope site Poljanski rob is suitable for south winds and generates excellent and smooth lift without rotors. Strong thermals also appear during the day. You can fly all sorts of sailplanes, from thermal to scale. The landing area is huge but requires a skilled pilot. Terrain behind the slope has a steep back side (leeward). That is why rotors appear, which is what causes landing troubles. The trick is to penetrate through them and land behind a small hill. No brakes or butterfly is needed.

This specific terrain provides possibilities for dynamic soaring. One R/C pilot reached 290km/h with his Stormchaser 60".

It is possible to soar until late in the evening. Evening thermals appear when the surrounding mountains start cooling down. The valley below starts to emit the heat that was collected during the day.

Transport by cable car

Fully packed and ready to go

Soaring with setting sun before you is a one of a kind feeling. It rewards you and your friends with a big smile on your face.

After a long soaring day we head back to the lodge for dinner and beer. Sometimes the servers play the guitar and we sing along. You can imagine how much fun we have. Especially when you know that there is one more day of soaring ahead of you.

Aerozaprega.si <http://aerozaprega.si/en> and I are preparing a traditional slope soaring meeting on Velika Planina for next year, which will be held from 1st until 3rd July 2016.

Useful links:

http://www.kamnik-tourism.si/assets/PDF-FILES/zemljevid-368x270-slo-4.6.13.pdf

http://www.velikaplanina.si/Home

http://forum.modelarji.com/viewtopic.php?f=43&t=5579

http://domzalskidom.si/

Videos on youtube:

https://www.youtube.com/watch?v=JNZjZY83Kt4

https://www.youtube.com/watch?v=L_aClLuS0uU

https://www.youtube.com/watch?v=tEXmr1iPeXc

https://www.youtube.com/watch?v=UEy6YdApzYU

We're heavily loaded

A look over Poljanski rob from a higher view

Above left: Enjoying a beautiful day in the mountains

Above: Assembling a Pike Perfect and relaxing before flight

Left: Sunset at the mountain lodge

Above: A high speed pass over Poljanski rob

The Stinger rocks the sky

Upper left: Off she goes!

Above: Speed measurement while DS-ing

Left: Security fence along the slope edge at Poljanski rob

JM Escape on a high speed fly-by

Xplorer above the church and ready for landing

Stinger is coming in for a landing

Evening skies

Cularis and Solius

Xplorer resting in the grass. Behind is the mountain lodge.

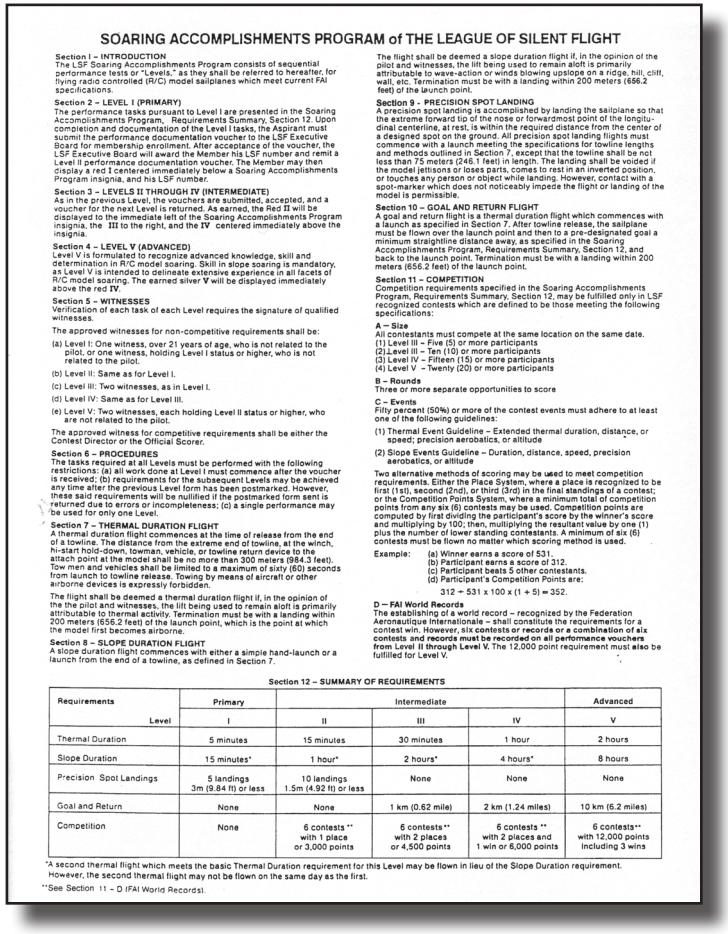
LSF Extended Duration?

Not too many guys have the time to think about stuff like what the back of the LSF Task sheet <http://www.silentflight.org/images/documents/lsf_voucherback.pdf>has written on it, but apparently I do, and one phrase in particular didn't seem to make any sense, at least not in any quantifiable way that I could discern.

Okay, so a quick recap about the LSF Program before we go forward: Once upon a time there were some RC sailplane addicts in a club in the West. They built and flew their models a lot! So it made sense that they would get pretty good at reading air and controlling their models during the landing phase of the flight. Being a fairly fun group, challenges were made amongst the pilots. The idea of a challenge to other clubs' pilots was conceived, and they were invited to come fly a series of time tasks.

And Thermal Duration contests were born. The problem was that it was pretty clear that the pilots from other clubs were not very skilled. Sure they could get their models up and sometimes work a thermal, but when it came to landing, it was mostly "fingers crossed that something doesn't get hit or the model broken." The contests were sorely lopsided because the original guys were too experienced and skilled at flying tasks since they'd been doing it for a lot longer.

That meant that the idea of challenge contests was not going to last long, so after a discussion amongst themselves the group came up with the idea of a series of tasks, starting out really easy, and then progressively needing more skills to complete. Skills the prior tasks would create and teach. One



SOARING ACCOMPLISHMENTS PROGRAM of THE LEAGUE OF SILENT FLIGHT

Section I – INTRODUCTION
The LSF Soaring Accomplishments Program consists of sequential performance tests or "Levels," as they shall be referred to hereafter, for flying radio controlled (R/C) model sailplanes which meet current FAI specifications.

Section 2 – LEVEL I (PRIMARY)
The performance tasks pursuant to Level I are presented in the Soaring Accomplishments Program, Requirements Summary, Section 12. Upon completion and documentation of the Level I tasks, the Aspirant must submit the performance documentation voucher to the LSF Executive Board for membership enrollment. After acceptance of the voucher, the LSF Executive Board will award the Member his LSF number and remit a Level II performance documentation voucher. The Member may then display a red I centered immediately below a Soaring Accomplishments Program insignia, and his LSF number.

Section 3 – LEVELS II THROUGH IV (INTERMEDIATE)
As in the previous Level, the vouchers are submitted, accepted, and a voucher for the next Level is returned. As earned, the Red **II** will be displayed to the immediate left of the Soaring Accomplishments Program insignia, the **III** to the right, and the **IV** centered immediately above the insignia.

Section 4 – LEVEL V (ADVANCED)
Level V is formulated to recognize advanced knowledge, skill and determination in R/C model soaring. Skill in slope soaring is mandatory, as Level V is intended to delineate extensive experience in all facets of R/C model soaring. The earned silver **V** will be displayed immediately above the red **IV**.

Section 5 – WITNESSES
Verification of each task of each Level requires the signature of qualified witnesses.

The approved witnesses for non-competitive requirements shall be:

(a) Level I: One witness, over 21 years of age, who is not related to the pilot, or one witness, holding Level I status or higher, who is not related to the pilot.

(b) Level II: Same as for Level I.

(c) Level III: Two witnesses, as in Level I.

(d) Level IV: Same as for Level III.

(e) Level V: Two witnesses, each holding Level II status or higher, who are not related to the pilot.

The approved witness for competitive requirements shall be either the Contest Director or the Official Scorer.

Section 6 – PROCEDURES
The tasks required at all Levels must be performed with the following restrictions: (a) all work done at Level I must commence after the voucher is received; (b) requirements for the subsequent Levels may be achieved any time after the previous Level form has been postmarked. However, these said requirements will be nullified if the postmarked form sent is returned due to errors or incompleteness; (c) a single performance may be used for only one Level.

Section 7 – THERMAL DURATION FLIGHT
A thermal duration flight commences at the time of release from the end of a towline. The distance from the extreme end of towline, at the winch, hi-start hold-down, towman, vehicle, or towline return device to the attach point at the model shall be no more than 300 meters (984.3 feet). Tow men and vehicles shall be limited to a maximum of sixty (60) seconds from launch to towline release. Towing by means of aircraft or other airborne devices is expressly forbidden.

The flight shall be deemed a thermal duration flight if, in the opinion of the the pilot and witnesses, the lift being used to remain aloft is primarily attributable to thermal activity. Termination must be with a landing within 200 meters (656.2 feet) of the launch point, which is the point at which the model first becomes airborne.

Section 8 – SLOPE DURATION FLIGHT
A slope duration flight commences with either a simple hand-launch or a launch from the end of a towline, as defined in Section 7.

The flight shall be deemed a slope duration flight if, in the opinion of the pilot and witnesses, the lift being used to remain aloft is primarily attributable to wave-action or winds blowing upslope on a ridge, hill, cliff, wall, etc. Termination must be with a landing within 200 meters (656.2 feet) of the launch point.

Section 9 – PRECISION SPOT LANDING
A precision spot landing is accomplished by landing the sailplane so that the extreme forward tip of the nose or forwardmost point of the longitudinal centerline, at rest, is within the required distance from the center of a designed spot on the ground. All precision spot landing flights must commence with a launch meeting the specifications for towline lengths and methods outlined in Section 7, except that the towline shall be not less than 75 meters (246.1 feet) in length. The landing shall be voided if the model jettisons or loses parts, comes to rest in an inverted position, or touches any person or object while landing. However, contact with a spot-marker which does not noticeably impede the flight or landing of the model is permissible.

Section 10 – GOAL AND RETURN FLIGHT
A goal and return flight is a thermal duration flight which commences with a launch as specified in Section 7. After towline release, the sailplane must be flown over the launch point and then to a pre-designated goal a minimum straightline distance away, as specified in the Soaring Accomplishments Program, Requirements Summary, Section 12, and back to the launch point. Termination must be with a landing within 200 meters (656.2 feet) of the launch point.

Section 11 – COMPETITION
Competition requirements specified in the Soaring Accomplishments Program, Requirements Summary, Section 12, may be fulfilled only in LSF recognized contests which are defined to be those meeting the following specifications:

A – Size
All contestants must compete at the same location on the same date.
(1) Level III – Five (5) or more participants
(2) Level III – Ten (10) or more participants
(3) Level IV – Fifteen (15) or more participants
(4) Level V – Twenty (20) or more participants

B – Rounds
Three or more separate opportunities to score

C – Events
Fifty percent (50%) or more of the contest events must adhere to at least one of the following guidelines:

(1) Thermal Event Guideline – Extended thermal duration, distance, or speed; precision aerobatics, or altitude

(2) Slope Events Guideline – Duration, distance, speed, precision aerobatics, or altitude

Two alternative methods of scoring may be used to meet competition requirements. Either the Place System, where a place is recognized to be first (1st), second (2nd), or third (3rd) in the final standings of a contest; or the Competition Points System, where a minimum total of competition points from any six (6) contests may be used. Competition points are computed by first dividing the participant's score by the winner's score and multiplying by 100; then, multiplying the resultant value by one (1) plus the number of lower standing contestants. A minimum of six (6) contests must be flown no matter which scoring method is used.

Example: (a) Winner earns a score of 531.
(b) Participant earns a score of 312.
(c) Participant beats 5 other contestants.
(d) Participant's Competition Points are:

312 = 531 x 100 x (1 + 5) = 352.

D – FAI World Records
The establishing of a world record – recognized by the Federation Aeronautique Internationale – shall constitute the requirements for a contest win. However, six contests or records or a combination of six contests and records must be recorded on all performance vouchers from Level II through Level V. The 12,000 point requirement must also be fulfilled for Level V.

Section 12 – SUMMARY OF REQUIREMENTS

Requirements / Level	Primary	Intermediate			Advanced
	I	II	III	IV	V
Thermal Duration	5 minutes	15 minutes	30 minutes	1 hour	2 hours
Slope Duration	15 minutes*	1 hour*	2 hours*	4 hours*	8 hours
Precision Spot Landings	5 landings 3m (9.84 ft) or less	10 landings 1.5m (4.92 ft) or less	None	None	None
Goal and Return	None	None	1 km (0.62 mile)	2 km (1.24 miles)	10 km (6.2 miles)
Competition	None	6 contests ** with 1 place or 3,000 points	6 contests ** with 2 places or 4,500 points	6 contests ** with 2 places and 1 win or 6,000 points	6 contests** with 12,000 points including 3 wins

*A second thermal flight which meets the basic Thermal Duration requirement for this Level may be flown in lieu of the Slope Duration requirement. However, the second thermal flight may not be flown on the same day as the first.

**See Section 11 – D (FAI World Records).

task needing the task before to provide the knowledge and confidence to move to the next group of more difficult tasks. A Pilot Training Program! It seemed to make sense, but it was quickly determined that all the other pilots already felt that they "were" already skilled pilots, so didn't seem to think that they needed to participate in a training program.

One of the originating pilots said,"Lets call it an 'Achievement Program,' that way the natural desire of man to accomplish will get those guys to participate and we'll end up with more better pilots to fly at our contests!"

Okay, so that's partially a fable I made up based on talking with some of the early participants, and the article by John Baxter about his LSFV flight in RCM, but in a way it explains the misconception many RC sailplane pilots have about the LSF Task Program and its value.

I recently shared a house with a really talented young pilot who's a leader in his area but has been having trouble convincing other pilots to get started with the LSF Tasks.

Their logic is that since there isn't a big slope nearby to do the final slope task of 8 hours, why bother starting since they wouldn't be able to finish?

It wasn't the first time that I'd heard a good reason why not to bother with the program, but every reason was based on the idea of the program being about achievement!

Yet in those same pilots cases, everyone of them agreed that they would rather get their skills up to a point where having "one bad round" or "one bad landing" was the exception to their contest experience instead of the norm.

I myself was at a point where I was spending a LOT of money on the latest "Red Sailplane" in hopes that would change that one bad round complex, but it never changed anything, except for the weight of my wallet. I read articles, I watched the big dogs, the guys who seldom had one bad round or landing in a contest, but it didn't change my situation.

I needed something that would break that consistency of "bad luck."

I had started LSF years back, completed Level 1, but didn't move forward. Partially because I was traveling so didn't have a local mentor to guide me out of my flying bad habits and lack of patience. So quite a few years later and a lot of money wasted on equipment, I was looking for an answer. I thought about the LSF program but didn't care about becoming an LSFV. I'd seen plenty of LSFV's who didn't seem to be all that good at contests, so that didn't seem to be the answer.

Then one evening I got out the form and read the back — it did seem like a step by step training program. It made sense that it would build consistency and confidence by making me attempt longer flights and more precise landings. I mean if I could do two 15 minute flights, the normal 8 or 10 minute flights at a contest would seem short instead of unending as they seemed so far, so I started up again.

The rest is history. I went on to become maybe the world's best RC sailplane pilot, even JW and DP were clamoring for my autograph (or was it the money that I owed them?).

Well what really happened is exactly what the originators planned, my skills and confidence improved. Exactly what I had hoped for, and I had fun along the route. But it taught me something that so many RC pilots don't get, the program is an RC sailplane pilot training program, not a way to get hot chicks to want to date me, or to get the adulation of other pilots. The "achievement" is internal, a real satisfaction in knowing that "I did and I can" (and a lot of RC soaring was done too!).

To tell the truth, I never really paid much attention to the words on the form, hadn't been to the website much (there weren't many nude photos of sailplanes), so I hardly knew anything about the details of the program. So a couple of months

back a discussion started about what makes a thermal duration contest an LSF Task contest.

One point was clear, “three rounds” with a required minimum of pilots flying. Okay, that’s easy to understand, but then there is the part that talks about what a qualifying event must contain. The bit that got my attention was the description “Extended Thermal Duration.” What the heck did that mean?

I contacted various LSFVs and each had his own opinion. LJ thought that it should be a time more than the glide from launch altitude of an average model.

This one had me troubled, because our Thermal Duration Contests aren’t dependent on the opinion of someone, it was time and landing points, versus for instance Aerobatic Competition. TD is about clearly defined numbers. It seemed to mean that an LSF Secretary could inject his opinion to disallow a Task Form based on his opinion of the rule. It also meant that CD’s would have to guess if their contests were “extended” enough.

I decided to go to our LSF’s most renowned resource when it comes to the rules and the intent of the task designers, LSFV Tim McCann.

I called Tim and explained my confusion about the phrase. I told him about the various interpretations I’d received and why I wasn’t happy with any “interpretation.” I asked him if he would take the time to dig into the bylaws and AMA contest guidelines to see if he could find the origination of the words “extended thermal duration.”

Not more than an hour passed and he’d found the source! It was in the AMA guidelines.

So here is the gist of why the LSF Task designers used it: CD’s are instructed in order to insure that a thermal duration contest is dependent on the pilots’ need to find and fly thermals, to set the flight task time long enough. Get it? A flight time that forces pilots to extend their flights longer than a glide down by finding and flying a thermal or two.

Well you could say that a three round contest with task times of two minutes each wouldn’t qualify... unless you were there! I’d showed up at contests where it was blowing hard and cold, it was an extremely foggy low ceiling, so launches had to be extremely low or you’d lose your plane in the fog. The pilots voted to fly, even though it was pretty clear that rain was next, and soon. Not many managed two minutes, but all had fun and we got three rounds in!

“The LSF Board is not the LSF Police”

Hmmn, I could see where an LSF Secretary might deem a contest not qualified for LSF Contest points if he “felt” that the flight times were too short, not “extended” enough.

That also bothered me because of a recent LSF Board deciding that it had the right to disallow a few contests this past season, ruling that because the contests were same day, same class events, they couldn’t be counted for LSF Points or Wins. The President posted an official letter stating the contests weren’t in the “spirit” of the program. (Even though there was a written interpretation by 2001 interim LSF Board Secretary Dennis Adamisin clearly stating the opposite of the “spirit” veto.)

I have included Dennis’ interpretation on the next page. This is from the LSF website: <http://www.silentflight.org/index.php/lsf-program/lsf-rules-interpretations>. Thanks Dan Vester for digging this up for us! But I want everyone to read one of the most powerful statements written on the LSF pages in his explanation: “The LSF Board is not the LSF Police.”

That statement really hit a spot in my understanding of why the program was created, and what the Board was supposed to be about. I believed its job

Dennis Adamisin
LSF Secretary

July 19, 2001

There apparently is some confusion about what really defines an LSF Contest for the proposes of LSF Points and/or an LSF Contest Win. Evidently, there are those, who are not following the intent, nor the design of the Aspirant Program, as the rest of the United States or the world for that matter. The SOARING ACCOMPLISHMENTS PROGRAM of the LEAGUE OF SILENT FLIGHT, is a personal achievement program, based on a witness and honor system. To read in between the lines of the rules as stated on the back of the voucher, is only self serving, and a disrespect for those who have walked the path before you.

When a voucher is receive by the Secretary, he or she will validate it, by checking signatures, contests scores and alike. With access to the internet, this task becomes easier than ever before.

The LSF Board in not the LSF Police !!; but we do make a reasonable attempt to verify each and every aspirant form, and if we think there is an issue, the form is returned, with the appropriate explanation.

Lately there has been some confusion, about what makes up an LSF Contest, although the rules are clear, in Section 11 on the back of the Aspirant Form, The board will offer the following definitions and discussion to establish what is a recognized contest.

1. Event - The gathering of folks to fly model airplanes, to compete against each other, for fun , " skill improvement", and the meeting of other people. The basic foundation, on which the LSF was formed.

2. Contest - A task or series of tasks, at the Event, "performed by the same participants together", within a given time period, designed to perpetuate a ranking of the participants (Contestants), or the folks that came to the event. A contest within a contest would be, for LSF purposes, a classification ...

3. Classifications - Very similar to a contest, when used in an Event, where participants are segregated into groups of like fliers, or airplane types, "open to all contestants". Those Flying in a particular class for LSF points must meet the requirements of section 11 within each classification.

4. Rounds - The individual tasks flown, that make up the contest. there must be at least 3, within the contest to make a valid LSF contest.

5. Tasks - That work that is performed by all contestants, within a contest, such to perpetuate a ranking of said contestants.
With the above being said, If you have a 2-day Event, and the contests are designated as 2-day , be it (RES, NOS, UNL, 2-M,) or open (with a Master, Sportsman, Novice type), classifications, and the contests are designated as a 2-day contest, you can not count 1 day, or 1/2, of the contest for LSF points and/or a LSF win.

If you have a 2-day Event, and designate single day contests contained within, then you have 2 opportunities to score LSF points and/or an LSF win. Additionally, if there is a Hi-Point Overall Designation, then there is a 3rd opportunity for LSF points and/or win.

End of year or season, Club or Organizational Point Championship Series awards will not be considered for LSF points or wins.

This should clear up any misconceptions of the intent of the rules. This is not open for reinterpretation.

was to serve the pilots participating, to encourage and enable, just as this past leader explained.

The final line of the explanation isn't passive, indecisive, or leaving anything undecided, or suggesting that Board members to come should need to weigh in.

"This should clear up any misconceptions of the intent of the rules. This is not open for reinterpretation."

"Skill Improvement"

Sure, successfully completing each task is an achievement, no argument, but the program is about skill improvement. The back of the form uses the phrase "accomplishment," not "achievement."

The first goal below is "fun," the next "skill improvement" and finally "meeting other people." Somewhere along the way the recipe got too much ego mixed in.

1. Event - The gathering of folks to fly model airplanes, to compete against each other, for fun , "skill improvement," and the meeting of other people. The basic foundation on which the LSF was formed.

The Real Story

I had the honor of meeting, flying with and interviewing past LSF President Bob Steele before he passed. Bob submitted the origin story (originally written by RC sailplane pioneer Scott Christensen in 1988) to *RCSD* for the December 1997 issue of *RC Soaring Digest* magazine, in case you'd like to get the real story about how the guys came up with the program. It can be found on the LSF website at this link: <http://www.silentflight.org/images/documents/lsfstory.pdf>. The entire December 1997 issue of *RCSD* can be downloaded from <http://www.rcsoaringdigest.com/pdfs/RCSD-1997/RCSD-1997-12.pdf>.

You'll see that my paraphrased version isn't far off the details, but the original is worth reading.

They called it an "Achievement" program because back then you had to build your models, and the radios and batteries weren't reliable. There wasn't the internet to check weather, or set up opportunities, etc. Pilots had to really look to find contests around the country, had to search out slopes, had to find an LSF2 in order to move ahead.

I'm proud to be a member of the very select small group of pilots to have completed the program, but I'm more thankful to the program for the training it provided to allow my soaring skills to improve.

Here's excerpt from Scott's LSF article:

> "The most important aspect of such a program, we all felt, was the recognition of the individual. This meant, to us, that anyone, anywhere, regardless of club affiliation, country of origin, etc., could reap benefits from participating in such a program. What were these benefits? In order of importance, I think we saw these as:
>
> "(1) becoming a better pilot through participation,
>
> "(2) being recognized for achieving a given level of accomplishments, and
>
> "(3) being a member of an organization which sought only better piloting, instead of endless funding.
>
> "There was a kind of simple truth in all of this that really appealed to us. We, as a group, set out to come up with such a program."

What are you waiting for? Don't you want to be a better pilot?

You can get your form by emailing me at <GordySoar@aol.com>, or from the LSF Website : <http://www.silentflight.org/index.php/lsf-program/lsf-application>

One last excerpt from the *RCSD* article, a comment from one of my RC soaring heroes, LSFV Cal Posthuma.

I think it speaks to those pilots who feel, "Why bother starting, we don't have a slope to do the 8 hour," or "we don't have enough contests nearby," or "we don't have a 10K stretch of open road for the Goal and Return," or.... "Why bother starting if there's no chance of finishing?"

If you're thinking this way then Cal's comments are directed right at you.

> "LSF is all about goals. Setting them and doing what you must to meet them. It makes you a better flier. Every goal seems very hard, until you do it, and then it becomes easy. You may fall short a few times before you make it. This builds soaring character."
>
> Cal Posthuma
> LSF 2997, Level V

To that pilot whose friends feel its not worth starting the program if they don't have slopes etc to finish: Explain to them to forget about the "end" concentrate on the first two levels.

Why?

Because when you finish LSF2, you have a real understanding of the possibilities and value of the program, of why it works so well.

And then you will be qualified to witness for someone who decides he wants to go on no matter the challenges against completion.

Be there for the other guys, its what the program teaches.

If you enjoyed this article, feel free to tell me via email <GordySoar@aol.com>. In the future I hope to get into the other tasks with the goal of understanding and to also offer tips on how to organize your task attempts.

See you down the road! — Gordy

Remembering SUMMER

Tomasz Lis, listomasz85@gmail.com

Hello All!

In Poland now there is a snowy and frozen winter and no flying. I am looking over my photo album and remembering sunny, warm summer days and great flying on Rzepedka mountain, Beskid Niski, Poland. That slope has got excellent flying and landing conditions... and a beautiful landscape! In the photos is a handmade "Dzida" (Spear) model, 2.3 meter wingspan, 2 kg weight and RG 15 airfoil.

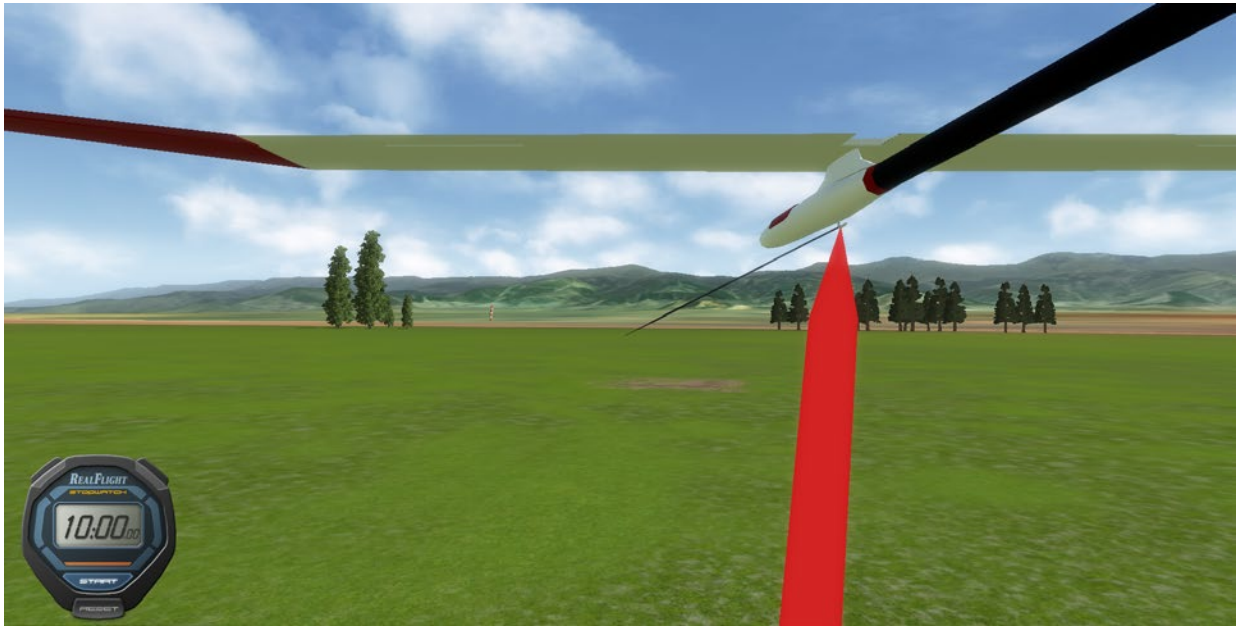
Best regards from snowy Poland!

Thermal Fun Using RealFlight RC Flight Sim

Curtis Suter, suterc@msn.com

RC Maniak at Youtube

> *I just practiced thermal flying in RealFlight 7.5 and I have to say that it is pretty close to real life.*



It is winter in Montana and either it's way too cold, snowy, rainy or windy to wiggle some sticks. I'm certain I'm not alone with that feeling. I get itchy thumbs now and again so a good way to get my RC flying fix in is with Real Flight's RC Flight Sim.

I had purchased Real Flight to better my helicopter flying skills, but I'm such a thermal hunting junkie I had to find a way to soar in the winter.

So although I'm impressed with Real Flights thermal generators they just weren't very realistic to me. Since Real Flight is so customizable I decided to tweak a few things and make it fly as close as possible to the real thing.

I hope I've achieved that and by some comments on the forums I believe I have and thought I'd share the work I've accomplished.

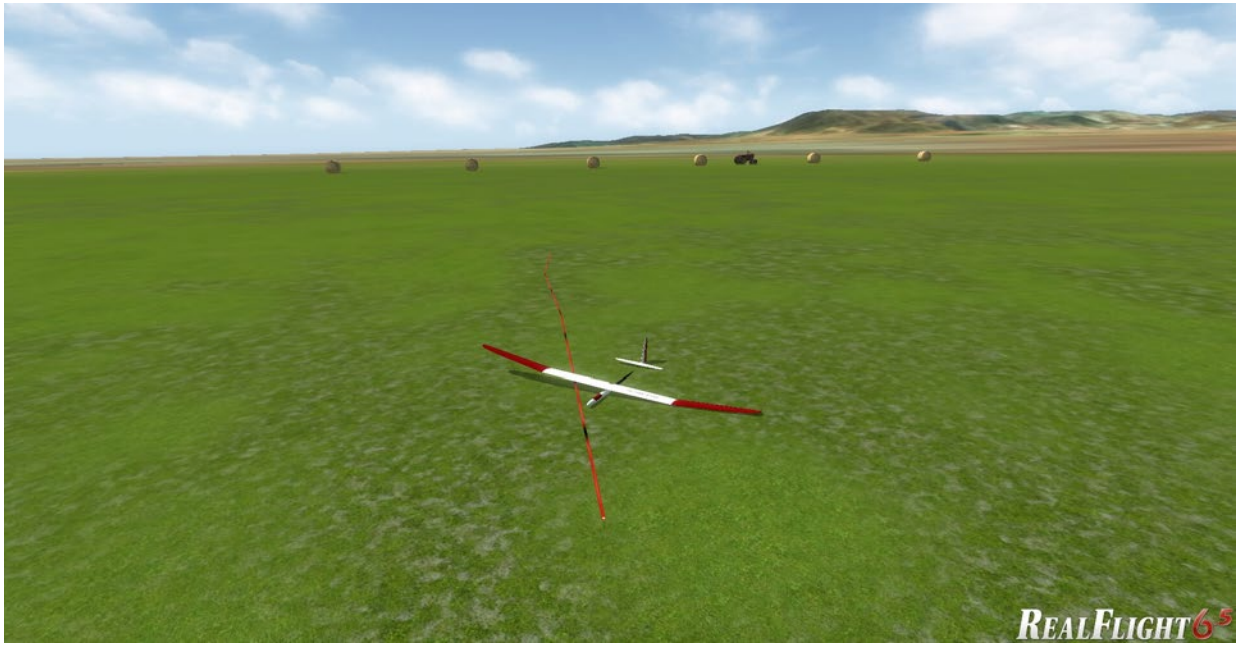
I modified the Real Flight Thermal Park to make the thermal generators more realistic as they kick off and move across the field.

There are two airfields that I made with different uses for each. One has a hi-start setup on the field and the other is for hand launch.

So I needed a realistic flying glider for both hi-starting DLG. Why not model my scratch built Red Merle (Supra) and SuperGeeII DLG.

Vrated at RCG

> *WOW! I just loaded up the Thermal Park Red Merle on my RealFlight G 6.5 sim. I also tried out the glider (Red Merle). Very nice indeed. I haven't flown gliders for a long time and for a simulator it took me right back to flying gliders. Very realistic. I feel it's about as nice as it can get for a simulated glider flying experience. Please keep up the good work!*



So the first field I made I called "Thermal Park Red Merle" which has a hi-start. I set the rubber length and pull so that it launches to approximately 200 feet.

I realize this is quite low but this is a simulation and there are viewing limitations and at 400-500' it was too difficult to tell what was happening.

On the field there is a slight breeze blowing and several thermal generators are set out there. However, the user won't know where they are unless you were to go into the editor to find them. So the easiest way is to go fly!

The breeze helps the thermals move around the field a little as they kick off.

If you land behind you, into the slight breeze, there is a landing tape for your precision landing practice.

I placed some hay bales and a tractor out there to help with getting lined up on the tape. Once you've flown it a few times you'll easily get the feel for the depth perception and where to line up for your final approach.

To really practice your timing and precision landings you'll need a countdown timer. I had been using a stopwatch on my desk but it was difficult to view the watch and fly the simulator at the same time.

Real Flight does have a Gadget for a stopwatch but I could only get it to count up, I prefer a count down. Thanks to the folks at HeliFreak they gave me a tip how to get the stopwatch gadget to countdown!

1) Press the key to the left of the Number 1 ("`" Do not hold shift down), this will open the console.

2) Type "setTimerMode down" on the keyboard. This tells the timer you want it to count down instead of up.

3) Type “setTimerCountDownFrom 5:00.” This tells the timer to count down from 5 minutes and 0 seconds when in countdown mode. You can change the time to whatever you like.

4) Press “`” to clear the console.

Awesome!

Here are links to the downloads for the modified Thermal Park and the Red Merle (Supra) glider:

“Thermal Park Red Merle” <http://www.knifeedge.com/forums/downloads.php?do=file&id=17961>

Red Merle (Supra) Glider <http://www.knifeedge.com/forums/downloads.php?do=file&id=17976>

Since I’ve been flying a lot of Altitude Limited Electric Soaring (ALES) contests, I modified Red Merle and added an electric motor. It works real well with the Thermal Park airfield.

Here is the link to the model:

<http://www.knifeedge.com/forums/downloads.php?do=file&id=18021>

I also like to fly DLG for fun and I think this is a wonderful way to utilize the Real Flight simulator.

The model is slow, small and maneuverable so it’s much easier to see what’s going on around you. So I solicited some help with the model. I met Fly_Electric at the Knife Edge forums and he offered his help. I couldn’t have accomplished the making of the DLG or Red Merle without him, his help in 3D modeling was invaluable. He did all the physical modeling and painting and I tweaked the flight control throws and balance.

• The SuperGee and Red Merle models have reflex and camber on the three position switch.

• Center is neutral, towards the front of the transmitter is camber and away is reflex.

• There are flaperons on the throttle stick with elevator compensation added.

• CH7 has aileron to rudder mix that can be turned on/off.

• CH5 has dual rates for the ailerons and rudder on the SuperGeeII and this is the motor switch on Red Merle ALES.

I’m very impressed with Fly_Electric’s work and she flies very similar to my scratch built SuperGeeII!

The model can be downloaded here:

Super Gee2 DLG Model <http://www.knifeedge.com/forums/downloads.php?do=file&id=17885>

Now that I have such a great flying model I could use the simulator to teach Joe Wurts “Third Vector.” This required another flying site I call Thermal Park Third Vector.

Joe’s Third Vector graphic (shown on the next page) is very simple to understand but I believe very difficult in execution in real time at the flying field. So this would be a good way to apply it.

Once you load the field you should be standing there looking at three poles with mylar streamers and some trees in the distance. There is a light wind blowing directly from the trees. The thermals should start working their way through the field. Watch the streamers and you should be able to find the lift using Joe’s Third Vector.

Have fun with this. Watching the streamers point at one another and finding the thermal is pretty neat!

I made a very short video of flying the SuperGeeII with the streamers that I posted on Youtube; pretty fun stuff! <https://www.youtube.com/watch?v=hgs5rjdSRYQ>

Thermal Park Third Vector Airport <http://www.knifeedge.com/forums/downloads.php?do=file&id=18020>

Joe Wurts drew a very nice depiction of the Third Vector and many years ago, and a video was produced of him teaching the Third Vector and it’s been supplied freely via YouTube. I highly recommend watching this video. It’s called “Joe Wurts on Soaring.” There are links to both of these on the “Tips” page of Tailwind Gliders.

Oh, one last note about Real Flight. There is an option to turn off those pesky

thermal generator direction arrows.

Please leave these off. I find them very distracting and difficult to use with depth perception issues in the simulator.

To turn them off go to the “view” menu “effect” and they are actually called “Wind Field Indicators.”

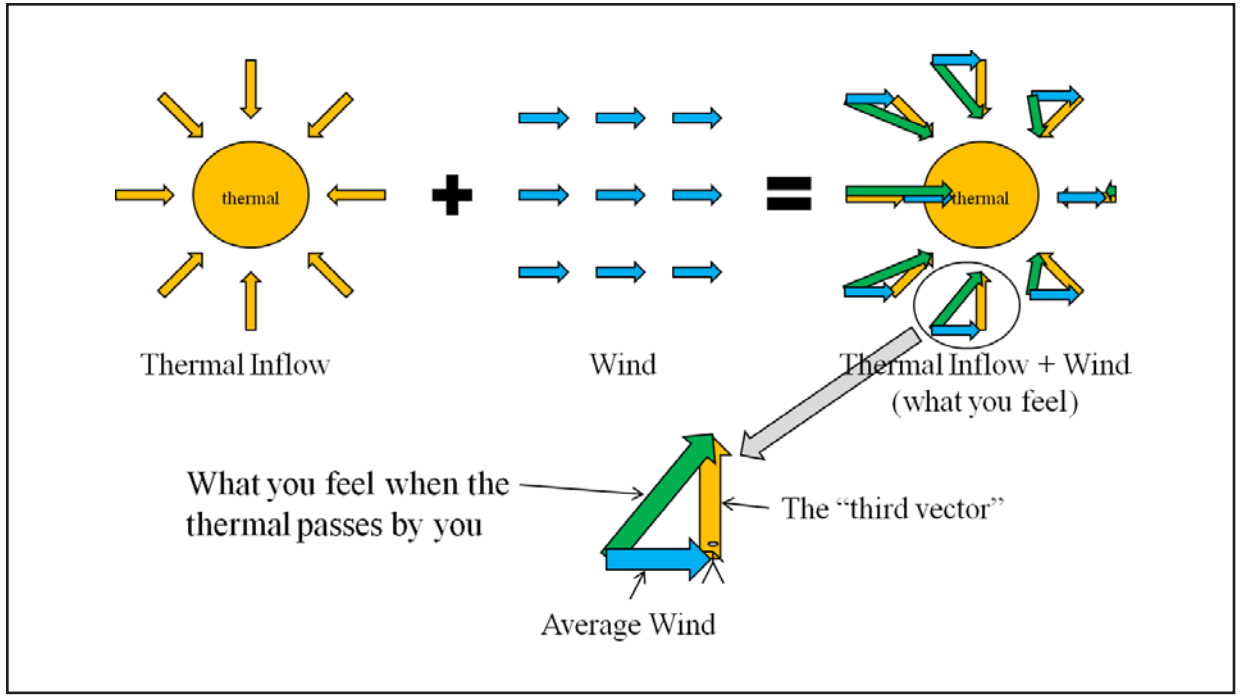
Learn to recognize what the model is doing when in straight and level unaccelerated flight using Joe Wurts’ Third Vector. Remember, he is the all-time World Champion in all genre’s of RC soaring!

So grab the files, get your stopwatch working and go practice!
Oh, if you’re tired of searching for thermals and landing practice, here’s an aerobatic electric model that I repainted to look like just like the E3D by Gary Wright that I’ve owned since 2002. I still fly her today, even on skis!

<http://www.knifeedge.com/forums/downloads.php?do=file&id=17981>

I have accomplished all these modifications and fly with RealFlight version 6.5.

If you wish to download all the models and flying fields in one zip file go to the “Files” page at Tailwind Gliders to do so. It’s about a 10Meg download.



LOST AIRCRAFT LOCATORS

Trevor Ignatosky <trevor2@optonline.net>

Model aircraft locators aren't guaranteed to find a lost aircraft. They don't check their own batteries before flight and they won't crawl out of the mud and up a tree to broadcast a homing signal. But they can make the difference between your finding a lost aircraft and wasting time crawling around following overgrown deer trails in the woods.

These pictures give you some insight to a closely related topic to lost aircraft locators: that of getting your prized aircraft out of a tree. We'll touch more on this later.

This article is about choosing a locator that will work well for you. What it doesn't do more than lightly address, that is more important than locating a lost aircraft, is being safe while searching for one. You should be familiar with the safety issues in your part of the world and prepared for them while out and about in the wild.

In the woods and wrestling a camouflage colored Supra sailplane down with a fifty foot pole. The low branches can be more of an obstacle than the high ones.

Every procedure for getting a sailplane out of a tree works fine – once. Like the Borg, they learn.

A Quick Flick II DLG sailplane, was invisible in three foot tall grass from only ten feet away.

Let's get this out of the way. I can't recommend depending on an audible locator to find a lost aircraft. Even if you have perfect hearing, the distance where you can hear the locator can vary immensely with the aircraft's position, the surroundings and a little wind. Land in a field or woods and everything around the aircraft will muffle the locator's sound: trees, brambles, tall grass, even the open air absorbs sound. Now add in noisy insects, birds and the rustling of windblown leaves and you may find yourself communing with nature, but not with your aircraft.

A radio locator system is composed of a transmitter, also confusingly referred to as a locator, mounted in the aircraft, and a receiver that is hand held and can be set to the transmitter's channel.

The receiver's antenna is directional and is used to point to the aircraft's location. The transmitter runs off its own power source, which is a good thing when an aircraft is lost. Lost aircraft tend to land on something uneven, usually branches, bushes or even tall grass that puts pressure on a flight control surface. A little pressure is all it takes to cause a servo to energize and drain the aircraft's main battery a lot faster than if the aircraft were sitting on a nice flat surface somewhere safe. It need not only be an energized servo. Any electrical problem from before or after that unscheduled landing can quickly turn your charged up main battery into a discharged pack of chemicals.

There are two sources of radio locator systems that are popular in the club that I belong to, Long Island Silent Flyers, which is a sailplane and free-flight club. The sources are Walston Retrieval and Communications Specialists, Inc (CSI).

These radio locator systems have good track records where we fly, with the surrounding woods and the distances involved.

What type of model aircraft should use a locator? The answer is any model that when flown normally gets small in the distance. Our sailplanes fall neatly into this category due to their tendency to follow thermals downwind and then find that they've passed the point of being able to make it all the way back.

So how popular is the use of radio locator systems for finding lost aircraft? In our club we currently have fifty-five members. Of these, thirteen use Walston and three use CSI radio locators. This gives sixteen members or almost one out of three club members using radio locators. I think the reason for these numbers comes down to return on investment. Many club

members with more expensive sailplanes use radio locators and those who have foamies and less expensive sailplanes not so much.

Some pilots have more than one radio locator and some, like myself, transfer a radio locator from one sailplane to another, so we always have one in the sailplane we're flying, until we forget or can't be bothered; and you know what happens then.

Being a member of a RC flying club, our sailplane club in particular, can significantly reduce locator costs. Since our club owns a Walston receiver, all that one of our members needs to invest in is a Walston locator for their sailplane that transmits on a channel the club's receiver can tune to.

The club's Walston receiver conveniently resides with a member who lives just a few miles from the flying field, so it can be quickly available for action.

Incidentally, another club member, at a shorter distance, houses the club's fifty foot pole for pulling sailplanes out of trees, which, sadly, continues to give an ever improving return on investment.

Alternatively, a few of our club members use CSI transmitters and their own receivers.

CSI and Walston locator systems have their individual strengths, so it isn't a question of which one is better overall, but which one is better for a given situation.

We'll visit the trade offs between these two systems as we go along.

Since all this may not be enough, the phone number of a local licensed and insured tree-service / tree-climber is printed right on the back of our club membership cards along with other important information.

Our club, located on Long Island NY, uses Brandywine Tree Service, LLC, and over the years has happily had many planes retrieved by it.

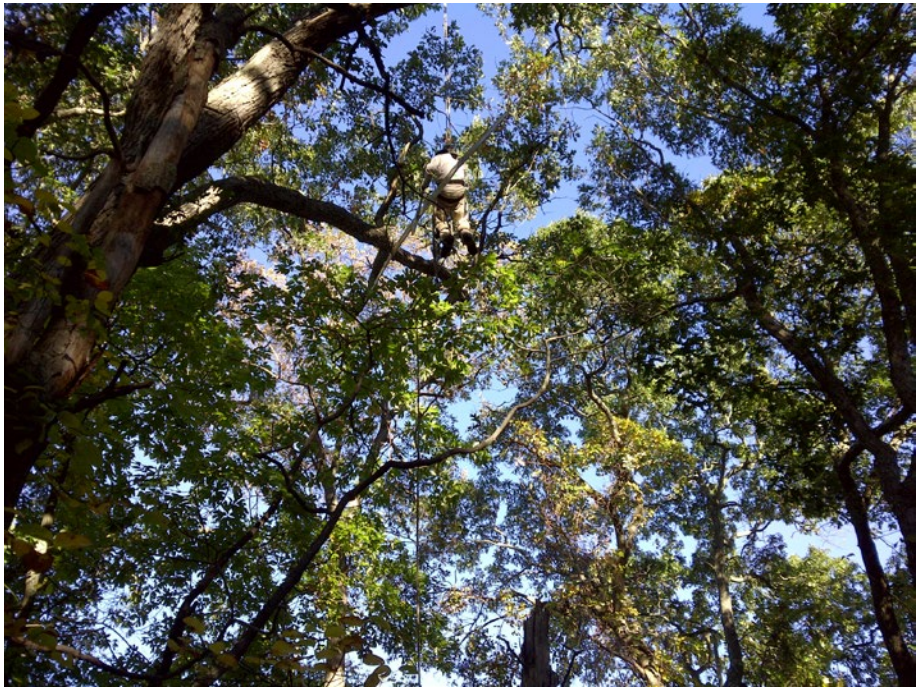
Hiding in plain sight, this sailplane is beyond the reach of the fifty foot pole, but not of that of a professional tree climber.

No, this isn't overkill. It could easily be more than a couple thousand bucks worth of someone's sailplane wedged into a tall treetop.

As an aside: If you haven't watched a tree climber before, it's an experience you'll remember.

In the picture above and those on the next page, the tree climber started planning this climb while putting on his equipment, then he climbed to a height that was well above the sailplane, looped his rope over a tree limb and swung across to grab the plane.

While holding onto the plane with one hand, he lowered himself to the ground using the other hand.



To be sure you have the picture, he had to climb to a height of better than seventy feet, swing back and forth while hanging from a rope to grab the plane and then lower himself to the ground. On the way down he had to hold onto the plane without damaging it while passing through more tree branches and limbs.

Shopping Around

What should you check when shopping for a locator for your aircraft? Check range, battery life, size, weight, ruggedness, water resistance, cost, licensing and whether you'll have timely access to a compatible receiver. Lets look at each in more detail.

Range

Walston transmitters, even the shorter range ones, give you a very good chance of locating an aircraft at greater distances than merely when it's close to a field's tree line. Walston website lists six aircraft transmitters. Ranges are from 1.5 miles ground with 10 miles line of sight (LOS) to 5+ miles ground with 50+ miles LOS, dependent on model. CSI's AT-2B long range transmitter has a a specified range of 5+ miles on the ground with 50+ miles in the air. CSI's PT-1B transmitter has a specified range of several blocks in the city and up to 2 miles in the country.

CSI also markets their locators for finding lost pets which may explain why they specify their range this way. Both Walston and

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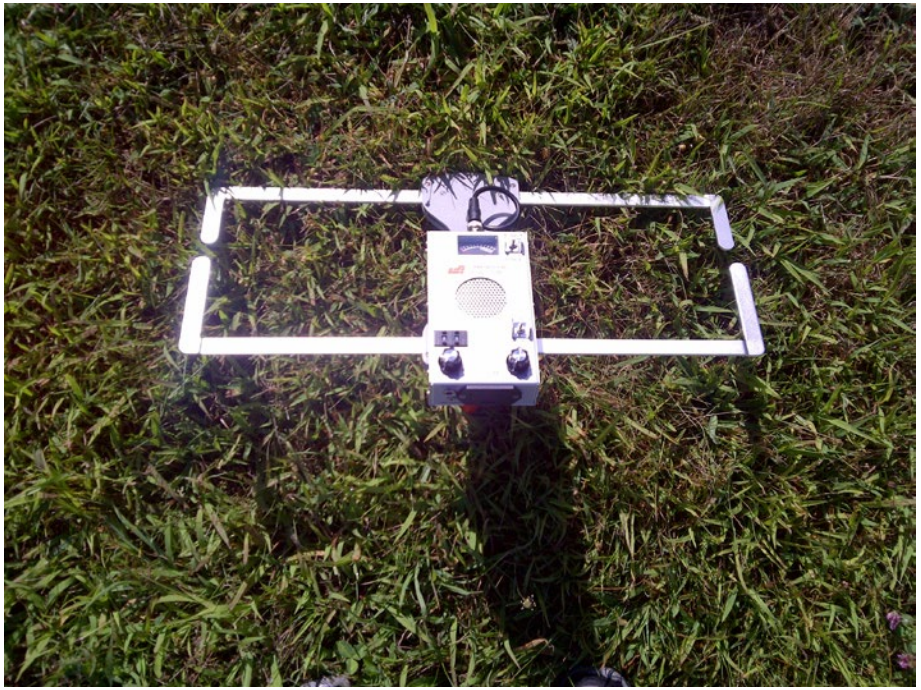
Above left: Hanging by a rope from a much higher branch, the tree climber has grabbed the sailplane and is starting his descent.

Left: Both the tree climber and the sailplane have a way to go and some branches to pass around before they're both safe on the ground.

Walston receiver, antenna and carry case. The carry case frees one hand to hold the antenna.



The CSI receiver and antenna are shown assembled together and ready for use.

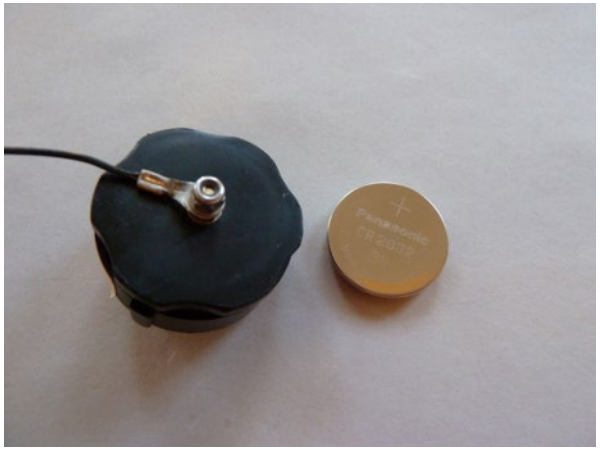
CSI ranges can be reduced by local terrain, plants, precipitation and proximity of the lost aircraft to the ground.

Consider that the field where we fly and surrounding woods contain more than eight million square feet. If we only look at this number it may seem like a lot of room to lose an aircraft in. The reality is most of us, most of the time, fly close to the field, especially when we are flying without a locator. Consequently most of our aircraft that don't make it back to the field land just behind the tree line and can often be located visually, although if one is up a tree locating it may be just the beginning of our adventures with the fifty foot pole or employing a tree climber.

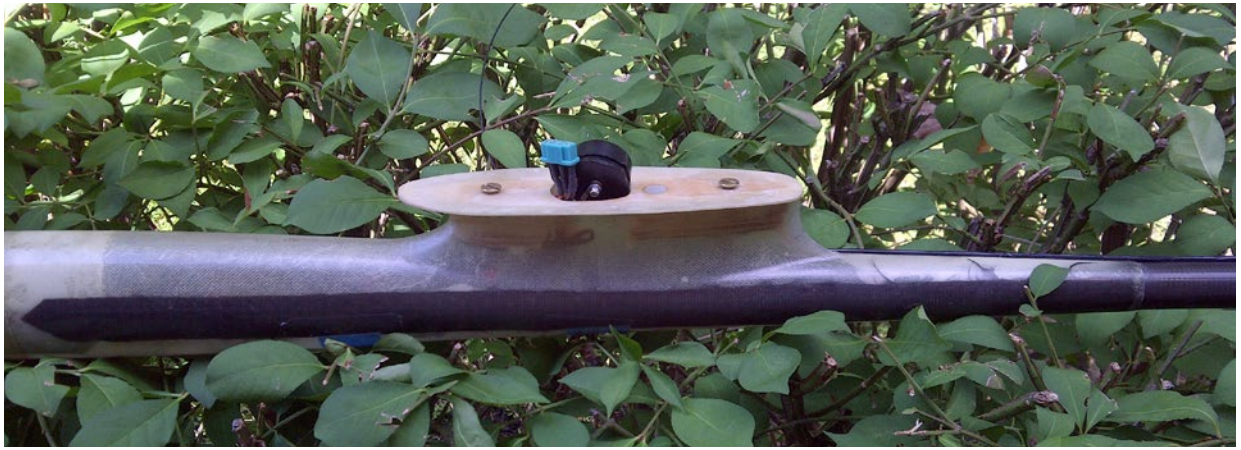
The point is, the further away from the flying field the fewer aircraft land there, but even a few hundred feet behind the tree line is enough for an aircraft to disappear permanently without a locator or, less likely, even with one.

Why?

One reason is thorny brambles. In many areas they are impenetrable and we'd need to carry around a stepladder to see their tops. Mostly there are too many places that need to be viewed from different angles to be sure an aircraft hasn't taken up residence in one. So the decision to keep searching visually boils down to how much is our time worth versus the cost of a lost model.



CSI PT-1B transmitter and CR 2032 battery. Not very big, but an awkward shape to mount it in the narrow fuselage of a sailplane.



The CSI PR-1B transmitter slides right into this Supra's fuselage where the ballast tube should be. Its antenna exits at 90 degrees to the fuselage, above and away from the carbon strips.

Battery Life

Battery life is closely tied up with timely access to a receiver and our available time to search for a lost aircraft. A CSI PT-1B transmitter can last for over thirty days; a CSI AT-2B transmitter for seven days; a Walston, four to eight days for the larger ones and thirty to thirty-five hours for the smaller ones that would be suitable for lightweight DLG sailplanes.

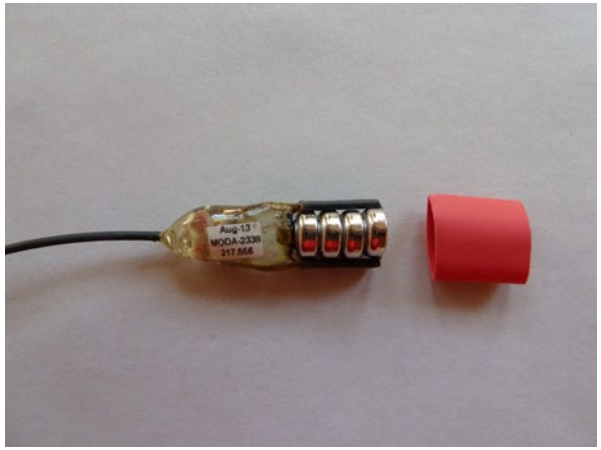
Size and Shape

We need to be able to mount the transmitter somewhere where it will be easily accessible for replacing its batteries and that it can survive a hard landing. With so many different sizes and shapes of aircraft this takes a bit of measuring and planning.

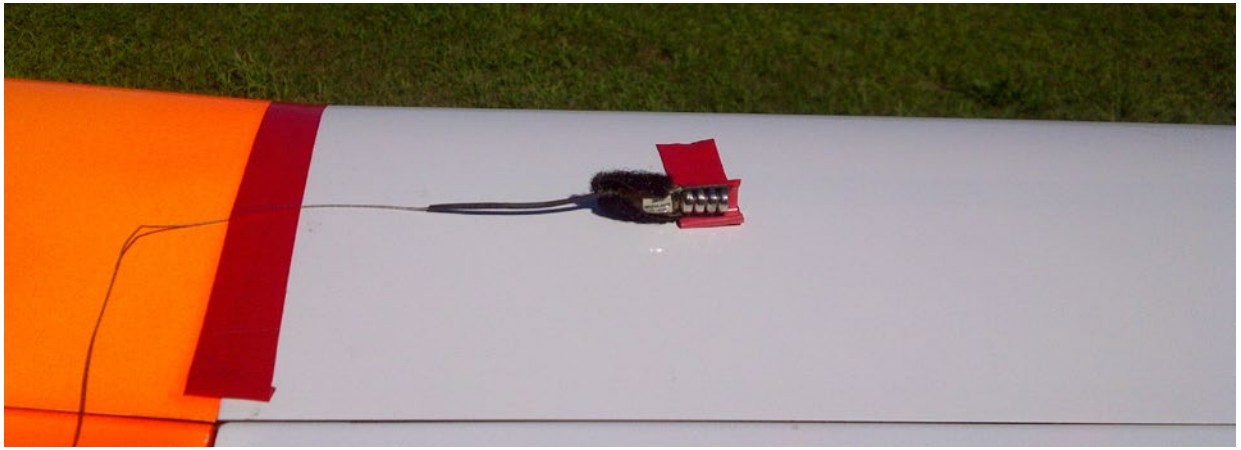
A CSI PT-1B transmitter is essentially a 0.51 inch high by 1.1 inch diameter plastic can sporting a 6/32 inch post on top that the antenna is attached to. A CSI AT-2B transmitter is specified as 0.9" x 1.1" x 0.8", less its projection and antenna. The projection isn't that small, so check out the manufacturer's drawings for this transmitter to determine its suitability for your aircraft.

The CSI PR-1B transmitter slides right into this Supra's fuselage where the ballast tube should be. Its antenna exits at 90 degrees to the fuselage, above and away from the carbon strips.

A Walston transmitter? Well, following are some pictures of a Walston transmitter. Make a guesstimate about sizes, since they aren't all specified and their size varies due to different numbers of batteries from model to model. Hint: The red tape shown is three-quarters of an inch wide. Also the electronics, other than the batteries, are encapsulated in a plastic-like material, which, to my mind, adds some tiny variance to their sizes. However, when it comes to finding a place for them in your aircraft they are small and their shape, a cylinder, makes them easier to fit into a narrow fuselage than CSI's transmitter.



Walston transmitter with Velcro removed to show the encapsulated electronics with the original plastic tubing for holding the batteries in place.



This Walston transmitter, roughly 1/2 x 2 inches, has Velcro glued around its encapsulated end and allows easy removal when replacing batteries. The red electrical tape is to hold the batteries in after losing the plastic tube.

Weight

A Walston transmitter weighs in at 2.2 to 6.5 grams with its battery count and hence weight varying with each model.

A CSI PT-1B transmitter weighs in at 12.76 grams or 0.45 ounces with the battery. A CSI AT-2B transmitter weighs in at 0.9 ounces with the battery and antenna. The PT-1B and AT-2B transmitters each use only one CR2032 battery.

Ruggedness

Walton transmitters are encapsulated which toughens their electronics against impacts. Walston batteries are simply pushed into a battery holder to form a stack of batteries. The battery stack is

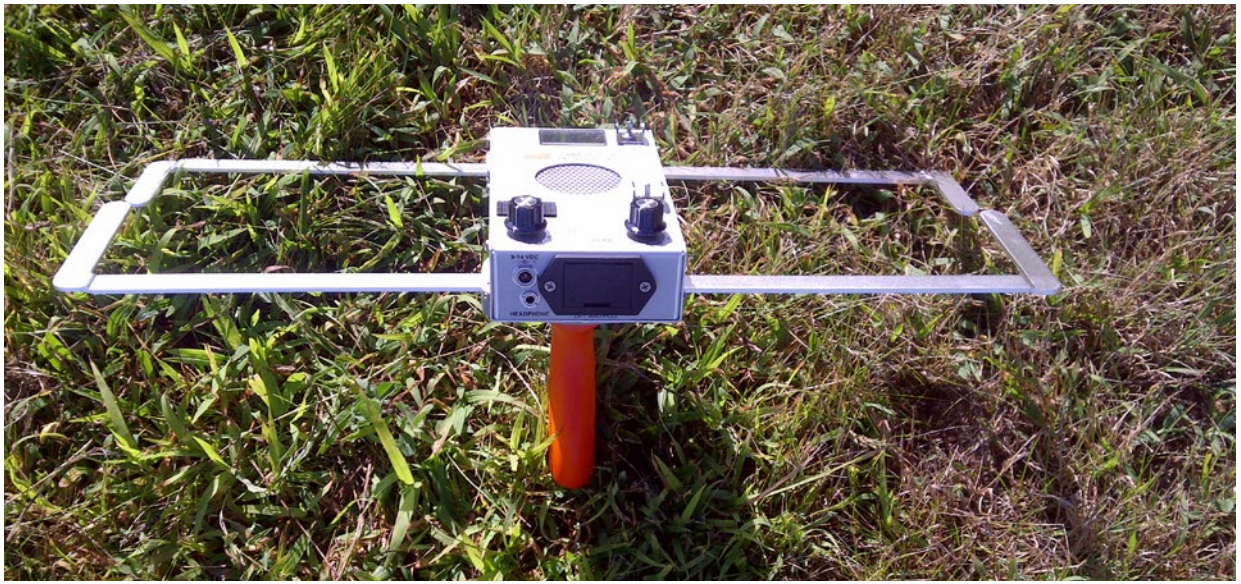
The batteries are taped in and the transmitter is Velcroed to the inside of this Supra's canopy with the antenna wire coming out the top. This configuration has, surprisingly, survived many a hard "landing" without separating from the sailplane or coming apart.

FA-3 antenna folded up. A belt mounted carry case is available.

FA-3 antenna unfolded.

inserted in the plastic tubing it comes with or, if/when the tubing is lost, electrical tape is wrapped around the batteries to prevent a side force from popping them out.

CSI claims its PT-1B is shockproof and its AT-2B transmitter is extremely crash worthy. Of the two the PT-1B seems the more rugged, since the AT-2B uses a snap-on case cover. CSI's PT-1B transmitter electronics and battery are tightly secured in its case. The cover needs to be unscrewed to remove and replace the batteries.



The CSI receiver and antenna are shown assembled together and ready for use.

Water Resistance

Walston doesn't make any claims about water resistance. However, you can make some judgments for yourself. The electronics are encapsulated, but the batteries aren't completely sealed against the environment.

CSI claims its PT-1B transmitter is waterproof. Its electronics and battery are completely enclosed in its case. CSI also claims its AT-2B transmitter is water resistant. Its electronics and battery are enclosed in a case with a snap-on cover.

Cost

A Walston transmitter sells for $149 to $169. A Walston receiver sells for $429 to $629, dependent on number of channels.

A CSI PT-1B transmitter sells for $49.95. A CSI receiver sells for $249.95 to $349.95, dependent on number of channels, and includes the battery, folding antenna and carrying case.

Licensing

Using a Walston transmitter doesn't require you to have a ham radio license in the USA.

CSI transmitters shipped to addresses within the USA operate only on amateur radio frequencies. According to FCC regulations they require licensing for legal operation. However, there are no restrictions on their sale or possession in the USA, so you can buy them in anticipation of getting a license.

CSI's PT-1B transmitter manual gives you the full story about preparing for and taking the ham radio examination to be able to use their transmitter.

The licensing issue may come down to time versus money. The Walston locator system is more expensive to purchase, but how much is your time worth in order to get a ham license to use the CSI system?

Timely Access to a Compatible Receiver

We'll have the most timely access to a compatible receiver by always having one with us when flying. If we're being thrifty maybe we can arrange to borrow a friend's receiver. Of course, the likelihood of said friend being available when we've lost an aircraft has a direct correlation to the charge remaining in our locator's transmitter batteries.

In our club the worst case is having a Walston transmitter that only lasts thirty hours and a pilot loses an aircraft after eight hours of flying on, lets say, a Sunday. That leaves twenty-two hours, assuming the batteries were fresh, to get hold of a compatible receiver and find the aircraft, before running out of transmitter time. By the way, the flying field closes at dusk and the pilot goes to work in the rain on Monday. The aircraft we fly aren't waterproof, not even close. It's probably something to do with surface area, gravity and channeling water. The result, even over a short period of time, is water collecting precisely where we don't want it.

Oh yes, to complete the picture, someone has borrowed the club's Walston receiver and couldn't be bothered with returning it promptly, doesn't respond to emails and hasn't updated their phone number with the club in years.

Okay, so this example is, perhaps, exaggerated a little, but it does highlight some of the issues that can come up when we have little time or opportunity to search for a lost aircraft. What we need to do is plan ahead to make sure that we have timely access to a receiver that is compatible with our transmitter and fresh batteries for it before going flying. The alternative is coming to terms with the likelihood of not being able to locate a lost aircraft.

Using a Different Receiver

You may want to use a receiver other than one made by Walston or CSI. If so, look at a CSI FA-3 folding antenna to mount and use with it. At $59.95 it's a bargain.

Using a Radio Locator System

For those that are completely new to the idea of using a radio locator to find a lost

aircraft here is a very simple description of finding one that has landed relatively close to us. Check out the links at the end of this article for more advanced directions for finding lost aircraft at both near and far distances. It's a mixture of art, science and common sense.

To start searching we take a compass or GPS reading of the aircraft's last know position from us, maybe even pound some stakes in the ground as a semi-permanent record that points to where we saw the aircraft go down or disappear from view. This is all in case we lose the signal for some reason, like a battery dies, the aircraft finally falls all the way to the ground, which reduces the signal or the wind blows it out of signal range before it comes down. In the worst case it will help the search party that has to go out and find us. Please be safe.

Next we point the antenna of the receiver towards where the aircraft has gone down or was last seen. For this description we assume the receiver picks up the signal from the transmitter in the aircraft with no problem.

(Accessing the links in Usage / Tips and Tricks at the end of this article will get us to what to do if initially there is no signal.)

We sweep the antenna horizontally to find the strongest signal and then travel in the direction the antenna is pointing to: towards the lost aircraft. As we get closer the signal increases and the antenna doesn't work as well for giving us direction. Turning down the gain on the receiver a little allows the antenna to more accurately point towards the aircraft. We repeat this process over and over as we approach the aircraft until we have a visual on it. It could be hanging from something over our heads, so we need to look up occasionally.

That's it for an ideal search, which, being ideal, ends happily. Not all searches do.

Safety

It's simple. A search for a lost aircraft, with or without a locator, can start out as a nice easy walk in the park, but it can turn brutal quickly. Play it safe. Some of the links at the end of this article have advice for searching safely. However, different locations will have different safety concerns, so the burden of being knowledgeable about and practicing safety while searching falls on each searcher.

A Final Thought

If you've made it this far you still might be undecided about getting a radio locator, so here is a final thought.

A pilot who can't get a aircraft back to the field may still be able to set it down gently with only a few dents and a wounded ego. In fact lost aircraft have been found with absolutely zero damage to them.

Of course, if the aircraft can't be found it really doesn't matter what condition it's in or what might be building a home in it.

Some Radio Locator Sources

Walston Retrieval – Item: Retrieval System

Communications Specialists, Inc (CSI) – Item: RC-Plane Locator. CSI's manual not only tells you how to use their device, but how to get your ham license for it in the US with a minimum of fuss.

Usage / Tips and Tricks

"Increase Your Odds in Model Retrieval" by Jim Walston. An excellent article:

<http://www.texastimers.com/helpful_hints/walston/walston_retrieval.htm>

"Radio Rocket Location Using Walston Transmitters and Receivers" by Sue McMurray. A fun article about locating rockets using a Walston system. Read carefully and you'll find some great techniques that can apply equally well to locating lost aircraft:

<http://www.privatedata.com/byb/rocketry/rocket_electronics/walston.html>

Tom's iPS

Extra long reach pliers

Tom Broeski, T&G Innovations LLC, tom@adesigner.com

I have a couple of long reach tools, but none long enough for what I was working on. I've had a need for something that could open and close and get way down in a fuse. Sooo... I needed to make something...

1. There are a number of types of long reach tools available. Here are a couple of mine -- they get a lot of use.

2. The first thing I did was look around at what I had extra of.

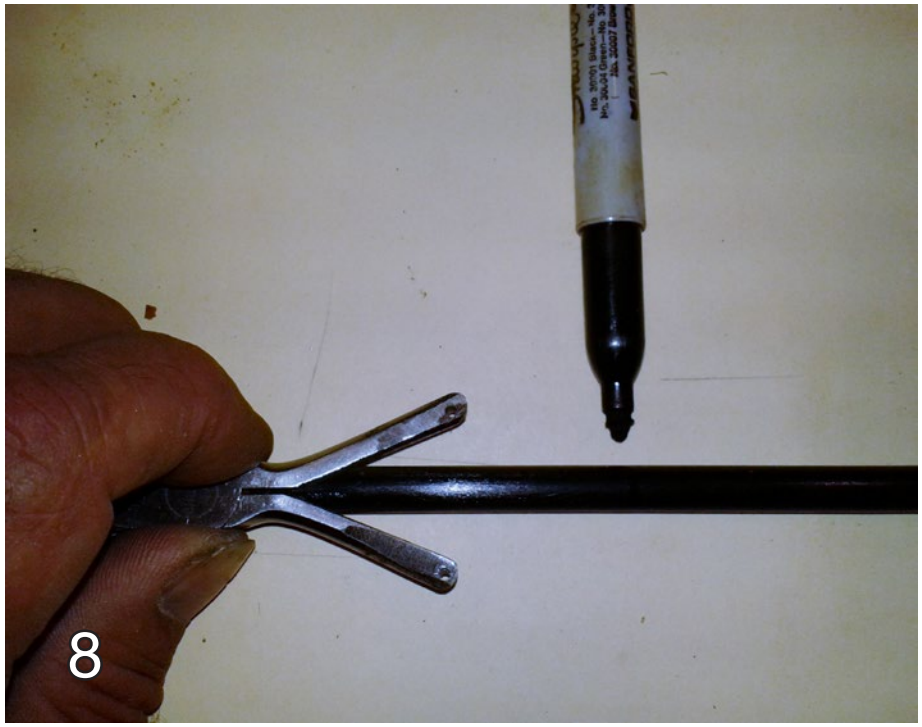
3. I had an old set from Harbor Freight that cost $5, so I picked out one that was not too long and not too short.

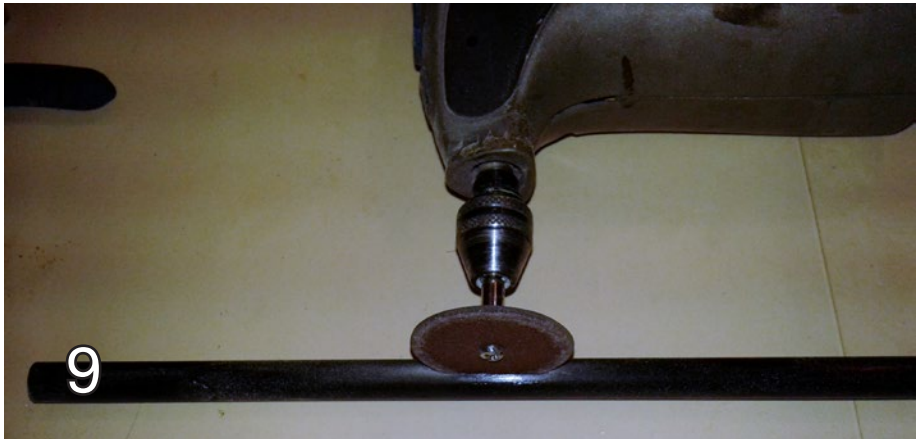
4. I grabbed a 3 ft. fiberglass tube (carbon will work fine also) from my stock. This looked good.

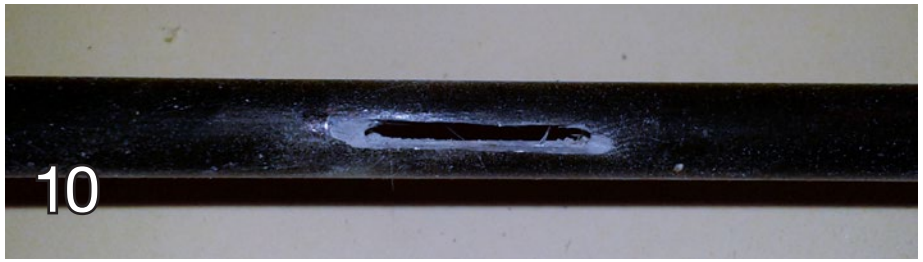
5. I marked where they should be cut off.

6. I was thinking of keeping the springs, but later found them unnecessary.

7. After cutting and grinding, I drilled a couple holes for the pushrods.





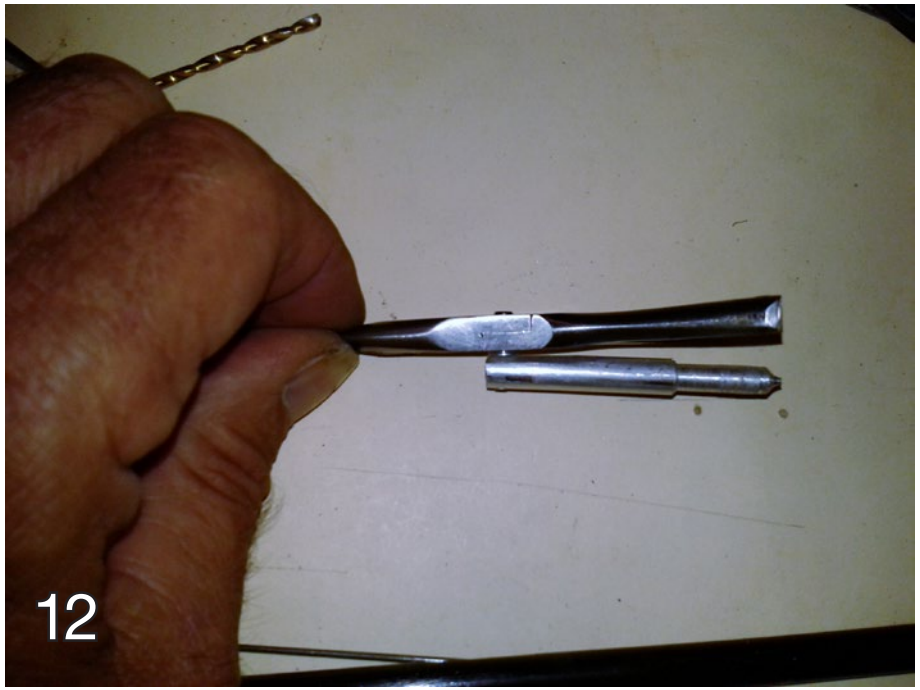


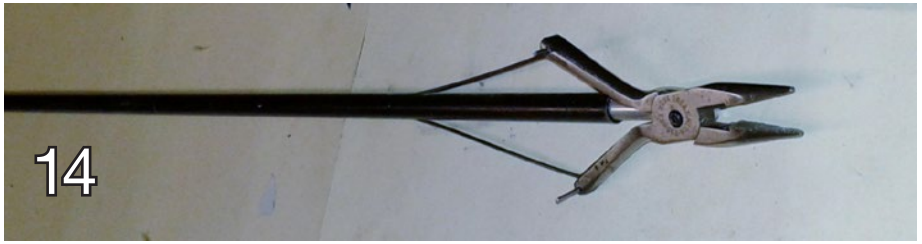
8. I marked a place that look reasonable for the pushrods to exit.

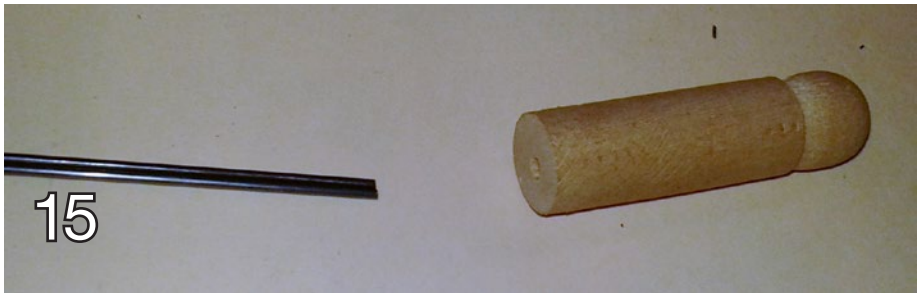
9 & 10. I cut a slot in each side of the tube about 3/4 in. long.

11. I drilled through the center of the pliers, took a piece of aluminum rod, turned down one end to fit the tube, drilled and tapped it for a tiny socket head cap screw.

You could just as easily fill the rod with epoxy or a dowel and put the pliers right on the rod. Just account for that when making the slots.







12. I added the washers as spacers and screwed it together.

13. Glued it in the tube. Then I inserted some music wire into the slots in the tube and bent the ends at 90 degrees.

14. And put the rods into the holes in the handle.

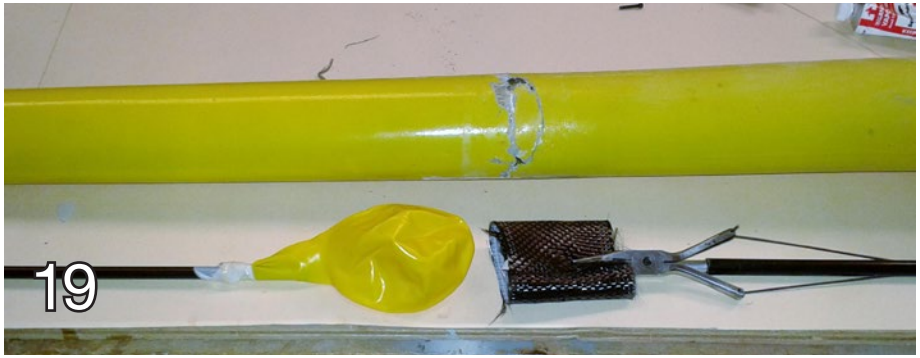
Went way down to the other end .....

15. Made a simple handle out of a dowel.

16. Glued it on.

17. Left plenty of rod out the end so it could flex if necessary.

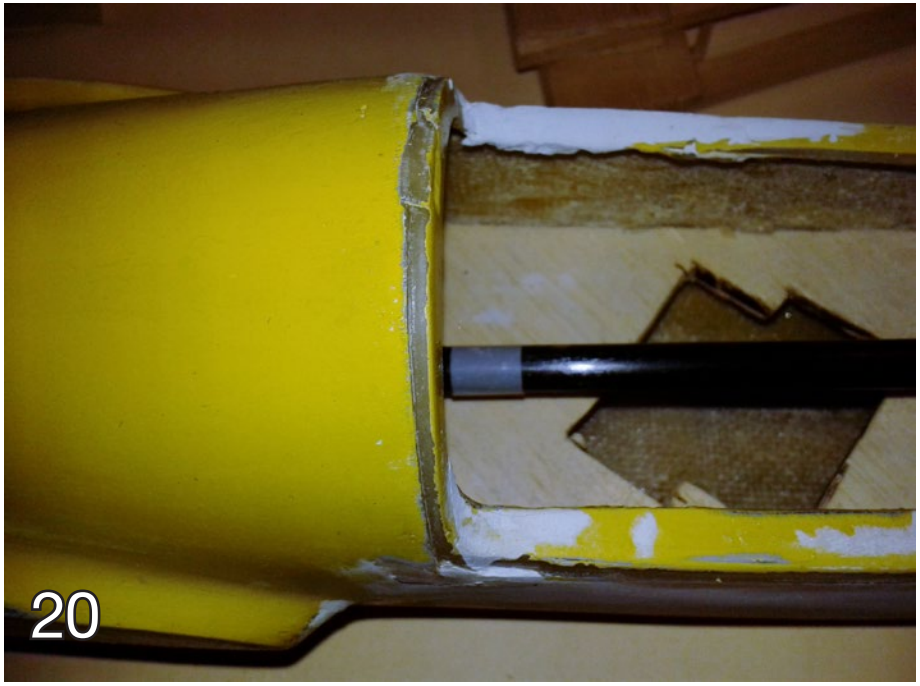
18. And there it is. It worked amazingly well. 45 minutes work.... that I wish I had spent years ago when I was building (and repairing) a lot of planes.

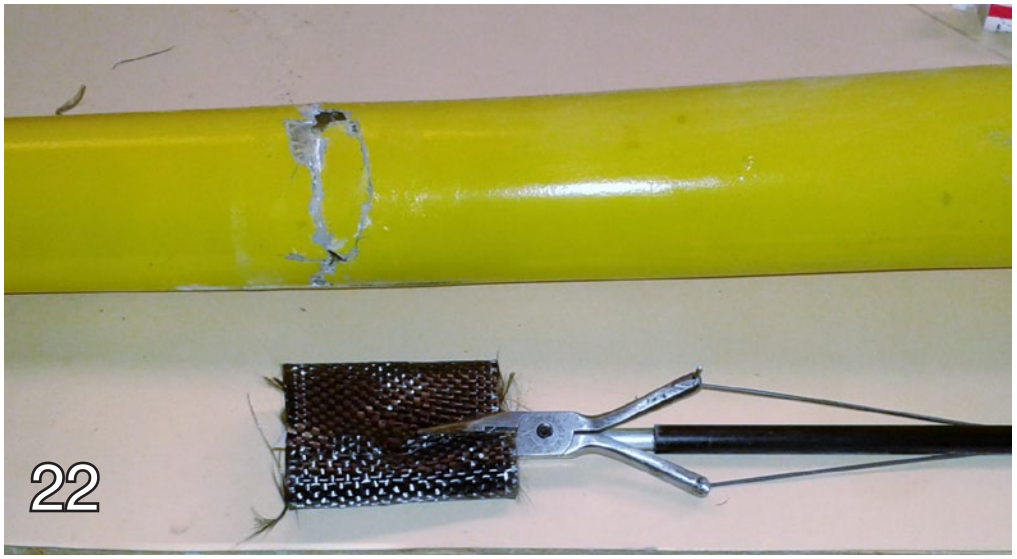


Here's how I used it to repair an Aquila XL fuselage:

19. Long reach pliers and a tube with a balloon.

20. Marked where the pliers and cloth should end up.





21. Cut and wet out a piece of carbon cloth.

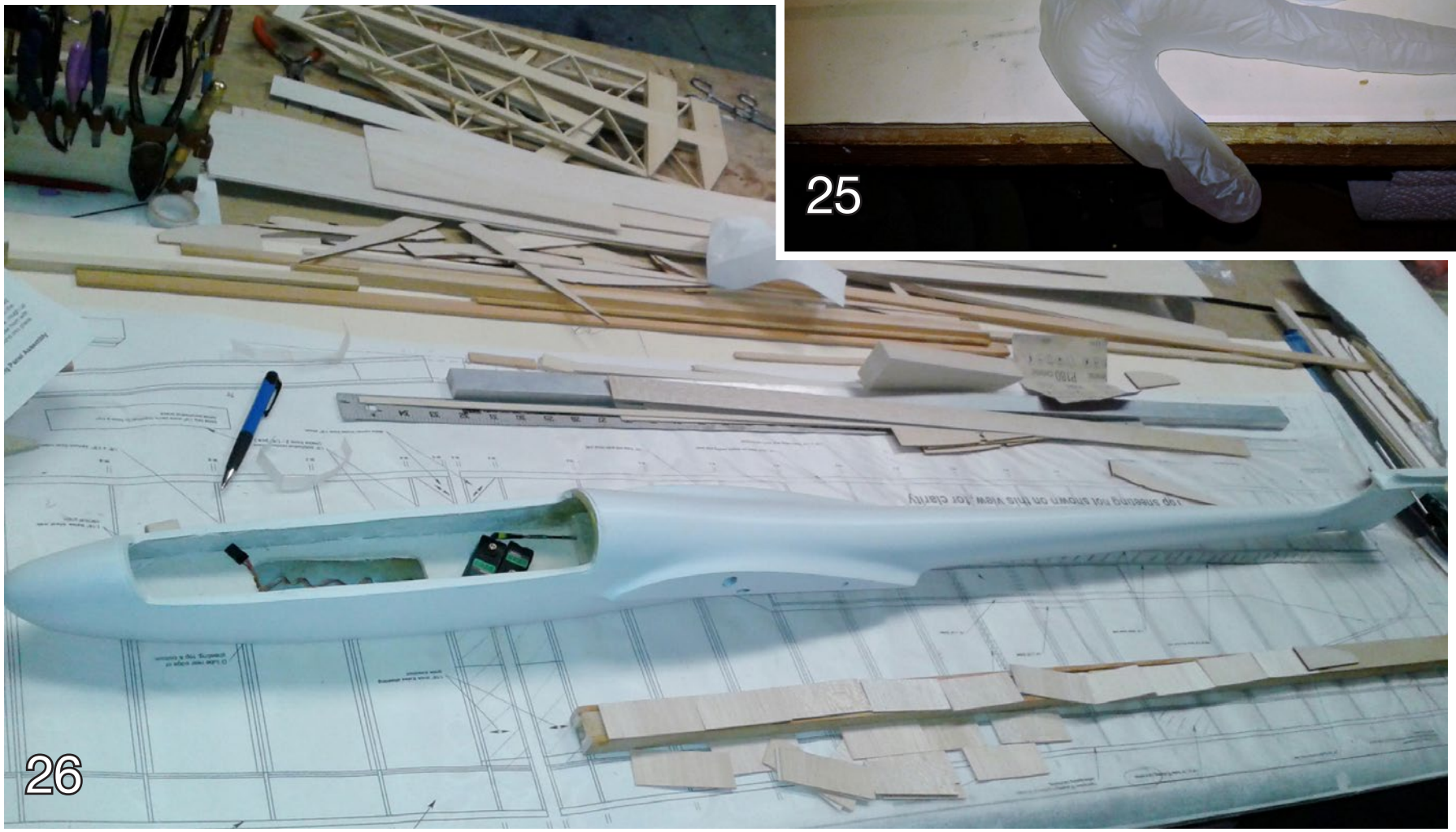
22. Rolled it and grabbed it with the pliers

23. Stuck it down in the fuse and released it.

24. Put a little extra epoxy in the big holes. (I had dripped in some extra epoxy before running the cloth in also.)

25. Ran the balloon in to the right spot and blew it up gently. Then blew hard to pop it and pulled it out. I did it again with a surgical glove since I ran out of balloons. I left it in until the epoxy got tacky and then blew till it popped and pulled it out.

26. After some sanding and filling, the fuse came out great. The nose on this was totally demolished, but I managed to "Humpty-Dumpty" it back together.



F3J Practice Bungee

for 3m – 4m gliders

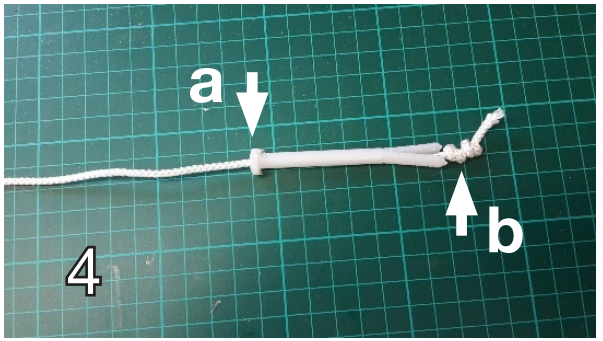
Kevin Botherway, rowdy01@xtra.co.nz

(1) Firstly the rubber tube which is brought off gym fitness equipment suppliers and it's the silver one which is the strongest. You require 9 metres (30'). It's called Theraband.

(2 & 3) The next required is six 6mm x 75mm (1/4" x 75mm) nylon anchors and suitable nylon cord that will go through the centre of the nylon anchor.

(4a) Prepare nylon anchor by sanding or Dremel the ends so they are close to the size of the outside diameter of the rubber tube.

(4b) Then thread some nylon cord through the anchor (approx. 500mm / 20" length) and tie a good double knot at the anchor end.



(5) Cut tube into three even lengths of 3 meters then spray anchor with hair spray and while wet thread into tube using as lubricant.

Then bind with binding wire right down to the end of the anchor (close to the 75mm).

(6) Wrap the length of the wire wrap with insulation tape to cover all exposed wire wrap. Do this on all ends and the bungee rubbers have now been completed.

(7 & 8) Heavier cord is used for the anchoring or staking down two rubbers to one heavy cord and one rubber to a second.

(9) The other end is connected to the 60 metres of heavy winch nylon with sleeve and a chute at the far end again with conventional sleeve.

Note the pegs we use are 500mm and must be hammered well in so as not to allow heads to rotate and ropes slip off.

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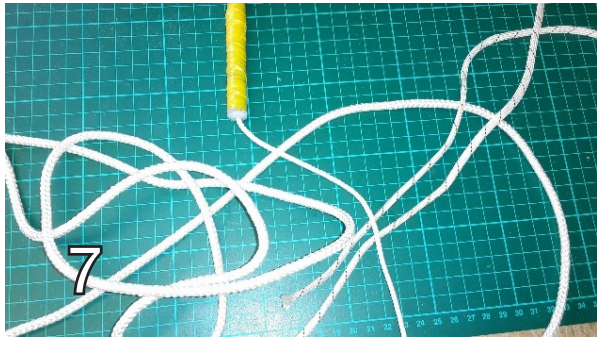
*In the past, we've used heavy duty hardware store spikes. These are 30mm / 12" long, 1cm / 3/8" diameter, and have a head which is 2cm / 3/4" diameter. These are pounded into the ground at a slight angle **away** from the direction of stretch. We've never had one come loose, but safety should always be a concern. — Ed.*



THE SOARING SCENE

We happened upon a rather unique RC soaring newsletter coming out of New Zealand. Produced by Rex Ashwell, it covers items of interest to enthusiasts in the Marlborough area, located in the northeast region of the South Island. Here's what Rex has to say about his publication:

"The Soaring Scene is a Newsletter for Model Glider Enthusiasts and NDC Competitors published by Rex Ashwell, <rex.ashwell@xtra.co.nz>.

"This is a newsletter aimed at encouraging and assisting model pilots to participate in soaring, particularly in the Marlborough area. It will concentrate on soaring and the Model Flying New Zealand organised National Decentralised Competitions (NDC). Currently there is a small group of enthusiasts in Marlborough who fly models in a variety of events including aerotowing, slope soaring and some of the NDC events and we would really like to see a greater participation, hence this newsletter.

"As the editor, I do not profess to be an expert but I am an enthusiast. The newsletter will appear on a "now and then" basis at this stage and you can expect to see reports on events that have been held as well as photos and discussion of soaring activity in the area. I would welcome contributions from others which could include model reviews, build tips, photographs, suggestions, questions or jokes. As long as it's relevant I'll find a place for it.

"Feel free to comment as well - bouquets or brickbats, they are all helpful."

— Rex Ashwell

THE SOARING SCENE #00

Seasonal Weather

The year is rapidly running out of days and, as is the norm for this time of year, we might as well pack away our toys until the windy season is over. There is no question it has been windy just as it was last year when November had a record wind run average of 347.2 kilometres - that's over 14 kmh average, all day, every day. The figures for this November have just been released and wind run average was just 307.1 km or 12.8 kmh. For those that are interested this information came from the Marlborough Research Centre's website: <http://www.mrc.org.nz/> Marlborough Research Centre | science research in farming, winegrowing, horticulture and forestry. Look at "Press Releases" for monthly weather summaries.

Also on the weather front is Ken McMillan's news about a private weather station which is close enough to Ara to show fairly accurate wind velocities on the BMAC strip. Check out: <http://www.weatherlink.com/user/hdstuart> Davis | WeatherLink - My Weather Page Click on "Summary" for current figures - look at the current and average wind speeds to get a reasonable idea of conditions. My initial thoughts are that anything above 15 kmh in a NW wind is starting to get a little uncomfortable due to the turbulence, depending of course on the model and your skill level. I don't know about winds from the Easterly quarter yet but would expect it to be okay up to maybe 20 kmh as the air is normally a bit smoother from that direction. More than that and I'll be saving the petrol (and time).

NDC.

NDC is now over for the year with the final round of F3K and some Vintage classes pretty much impossible to fly due to weekend winds. Despite that we haven't had a bad year with reasonably regular competition being flown by about half a dozen participants and it will be interesting to see where we have all placed once Model Flying NZ publishes the final results.

Next year I intend to run some kind of accumulating table so that we have a local competition running throughout the year. I'm not sure just how that will work yet but I guess your score for any given event will be a percentage of the maximum possible total time for that event and I'll just keep adding up the scores.

On the subject of next year, the NDC calendar is now out on MFNZ's website: <http://www.modelflyingnz.org/Docs/NDC/2016NDCCalendar.pdf>. As you can see for those into soaring, it is just F3K and ALES Radian in January while there are seven Vintage events so there must be something for Alan Baker there. I would really like to see a few more competitors in 2016 so lean on some of your mates that have a Radian or something similar to come and join us. For those that don't have a suitable model, we can always use time keepers and you will be surprised how much you can learn doing that job.

Slope Soaring.

Slope soaring didn't really get off to a flying start this Summer season being beset by low numbers, mixed weather and limited venues. Nonetheless we have a few regulars who turn out on Wednesday's and head to Meadowbank to see what the wind is like. We have had most everything from no wind to howling gales, shirt sleeve evenings to freezing cold - you need determination to be a slope fan! A big problem is the lack of a viable site when the nor'westerly is blowing and until the Marlborough District Council sort out an agreement we will probably just have to put up with

that. I had an encouraging meeting with Parks and Reserves staff a couple of weeks ago and we have general agreement over the use of the site above the Weld Street water tank, but there are further details to be sorted out, so until the bureaucratic process is complete we will have to limit our activities to Meadowbank (or another private site if anyone knows of one). If you haven't tried slope soaring come and give it a go - we meet at the Wither Hills walkway carpark off Taylor Pass Rd at 5.30 pm each Wednesday. Most anything can soar if the wind is suitable, with a Phoenix, a Radian or even a Bixler being okay for a first try. The purists may frown but sometimes being able to switch on "electric lift" can be quite handy.

This is what you can do in a gentle breeze with the right model and it shows the aerobatic capabilities of a DLG <https://www.youtube.com/watch?v=ZNmEUxU6A_I> □ F3K Thowt at the mountains - YouTube.

Still slope soaring but with a completely different kind of model. These look great but they seem very expensive at 400 Euros. <https://www.youtube.com/watch?v=IlkYY1MHInM> Hacker FlyAlps 2015 - RCGroups - YouTube

Aerotow.

The next aerotow event is scheduled for the 30th and 31st of January to be held at Quaildale farm. If you haven't been there it is a great site with wide open spaces and plenty of flat land. I have no idea of entries yet but I'm sure Peter Deacon will keep us posted as the date gets nearer. We have had good turnouts for the past aerotow events that Peter has organised, with some very big models in attendance, both gliders and tugs. Photo 1 shows some of the entries from January this year.

If you haven't tried aerotow and want to have a go drop me a line - it's really a lot easier than you expect and we have tow planes in the area now that can handle most everything. The smallest thing I've towed with my electric Fun Cub is a standard DLG and Peter's big IMAC model could readily tow the 5 or 6 metre beasts that some people fly. Ken has a bigger electric Cub and Carl has a powerful Ugly Stick so I think we can tow whatever you own. You don't need a tow release, we just fit a velcro tab under the nose of the glider and a quick loop is all that is required to disconnect. This system has been successfully used locally on gliders over 3 metres wingspan, so if you want to have a go get in touch - it doesn't have to be at an aerotow event.

Discus Launch Gliders

Now that Allan Knox has departed we have just four guys who fly DLGs and we would really like to see more. I know I'm biased, but nothing is more fun to fly (or more frustrating) and launching is not nearly as physical as it looks - us 70 year olds can do it so you should be able to as well. The big stumbling block is the cost, as you can expect even a well flown second hand model to set you back several hundred dollars. Let me assure you that if you get bitten by this particular bug you will find the money. We four have all upgraded recently so it may be possible to talk one of us into parting with a model if we thought it was going to someone who would fly it locally. I would be prepared to let a competent Mode 1 flyer handle the sticks to see what a DLG is like to fly and I think Peter Deacon could be similarly cajoled by a Mode 2 flyer (although I haven't asked him!).

I've been asked in the past if there are any cheap DLGs on the market and I've come to the conclusion that the answer is probably "no." It does depend a bit on what you consider cheap of course. There are smaller alternatives. I did have a scratch built 1 metre DLG and I currently have a Libelle <http://dream-flight.com/products/libelle-dlg> Libelle DLG but neither compares in any way to the real thing. In fact, having read a lot about how great the Libelle was before I bought it I was quite disappointed in it's performance, particularly the launch. On the plus side it's a great little slope soarer. The Elf <http://

www.hyperflight.co.uk/products.asp?code=ELF&name=elf-mini-dlg>Elf Mini DLG - RC Gliders - DLG F3K Hand Launch has a fine reputation and Hyperflight are a great outfit to deal with if you are happy to start with a smaller model, otherwise you have to bite the bullet and be prepared to shell out at least $500 for a an entry level model or a reasonable second hand one. If you want state of the art there is little change from a grand - it's a hard world!

This is an interesting short video showing a DLG from almost every imaginable angle using a camera on the model, on the ground, on a quadcopter and even on the pilot. Some serious editing and a lot of flying was required to put this together: <https://www.youtube.com/watch?v=vLdGwtgYOtM> F3K from a different perspective - RCExplorer.se - YouTube.

Photo 2: Here they are, the four horsemen, the band of brothers, the old farts club - call us whatever you like, we don't care, we're having fun flying DLG!

Electric Gliders

It's my impression that there are actually quite a lot of these around but not many are being flown competitively. That's okay, you fly what you want and in whatever way you want, but unless there is an aim to the flight you are missing out on half the fun of this type of model. There is absolutely no reason to be shy of the kind of competition we are flying in the NDC ALES events. This type of event means that you launch when you are ready and do your own thing on the flight. What is different is that there are limits on the launch altitude and a target time to be achieved. Add to that an opportunity to score more points via a very basic spot landing (inside a 15 metre circle) and I guarantee you will find yourself trying to do better on your next flight. There is no intense rivalry, rather you will find the other guys encouraging you and giving tips on how to squeeze a bit more time out of each flight.

If you have watched us fly one of these

events you may have found the larger models to be a bit intimidating but, as is normally the case, it's not how good your tools are that counts, it's how well you can use them. Certainly there are a number of big composite models being flown by club members but this year one round was won by Peter Graham with his Radian and I won a round with my scratch built Guppy so you don't need a big fancy model to be competitive.

My Guppy has given me a great deal of pleasure over the four years since I built it and I stopped counting the flights when I got to 600, about two years ago, so it's been a great model. I have plans for both the Guppy 1 and Guppy 2, plus a canopy mould should anyone fancy a simple build. The build log on RC Groups has all that you need: <http://www.rcgroups.com/forums/showthread.php?t=539755> GUPPY electric sailplane Building & flying PART 1 - RC Groups. I would think that I built mine for less than $100 including motor, esc and servos so it's not much to pay forfour years of entertainment, flat field or slope.

Vintage

This is not purely soaring but most of the events are pretty closely allied, inasmuch that many of the competitions involve a climb and glide, and we need to give our local exponent, Alan Baker, all the encouragement we can. Alan builds some amazing models and it would be really good to see a few more old timers appear - that's the models not the pilots. This is probably not a branch of the hobby that is going to appeal to everyone, especially if you are not interested in traditional style building (balsa bashing), but I do hear many people talking about the good old days and that's exactly where these models come from.

Photo 3: Here is Alan launching a small rubber powered model on it's way to an impressive flight of well over a minute at Ara. Don't get the idea that this model is typical. Alan has a variety of free flight and r/c models powered by glow plug,

diesel and electric motors as well as hand launch and catapult launched gliders. If you are at all interested in something within the vintage field, he's the man to talk to.

Other Stuff

One of the things the MDC specified for use of the Wither Hills was "NO DRONES". I'm not sure why people get so bug eyed about quadcopters, they are just powered models after all and they are going to become more and more common as the commercial operations ramp up. I'll be surprised if this particular operation ever comes to fruition, at least in my lifetime, but Amazon seem determined to keep the idea of drone parcel deliveries in the public eye. Here is one of their recent advertisements for what the future holds: <https://www.youtube.com/watch?v=MXo_d6tNWuY> Amazon Prime Air - YouTube. So that's what happened to Jeremy Clarkson!

Amazon appear to be serious but I much preferred this guy's take on the issue: <https://www.youtube.com/watch?v=jHrngvEok9M>Amazon Rockets - 5 Minute Shipping - YouTube.

Scale gliders are becoming a big thing with the advent of aerotowing and there are some beautiful (and huge) models being flown in various parts of the world, particularly in Europe. Towing is not the only way to get them in the air though - you can just chuck them off a cliff: <https://www.youtube.com/watch?v=8Qh6inGyav8> Brittany slope soaring 2014 Part 9 (Arcus and ASK 21) - YouTube. The big Arcus at the 4 minute mark epitomises graceful flight. One of the great things about slope soaring is that you get to see your glider flying close up and often at eye level, so expect to see more of this kind of shot in future newsletters.

There is always room for some full size soaring on my computer and these shots are exceptional, or they would have been if the photographer hadn't been apparently suffering from St Vitus Dance or some similar syndrome. Still worth a look: <https://www.youtube.com/watch?v=CYziDr0wPOc> Glider Looping Near Mountain - YouTube. In a reversal of the usual line, If you didn't know better you might think this was a model.

I have previously recommended that the <http://www.rcsoaringdigest.com/> RC Soaring Digest magazine is well worth a look. This is a monthly e-magazine which always contains top class articles and photos sent in by contributors. The December issue has just been posted on the website to download or read on site. There are 32 years of back issues available in the RCSD archives, all free! I suggest you become a member by clicking on this link <https://groups.yahoo.com/neo/groups/RCSoaringDigest/info>RCSoaringDigest - Yahoo Groups and then the "join group" button. That way you can be notified when a new issue is posted - and have a look at their archive, it's a mine of information.

I'll try to get these newsletters out from time to time and I'm happy to include any contributions you may have - some photos would be good. I hope to have the newsletter on the BMAC website in the not too distant future - in the meantime pass it on to anyone you think may be interested and if you don't want to receive it let me know and I'll knock you off the list.

There is not much to add except to wish you all a Merry Christmas. I hope to see you at an NDC event in the coming year and on the slope while daylight saving continues.

One of our World Champion DLG team members, Kevin (Rowdy) Botherway always ends his communiques with a familiar salutation - "SOARING ROCKS". I agree with Rowdy.

— Rex

THE SOARING SCENE #01

Happy New Year and welcome to 2016 and another year of soaring. There is not a lot to report for December and this was partly because NDC finished in November and partly because of the near continuous gusty wind in the early part of December - the local weather station has been a boon and saved me a few bob on gas. It would appear that normal summer service may have resumed though and the last week of the year has seen some brilliant conditions at Ara each morning before the on-shore Easterly intruded most afternoons. And about time!

Aero-tow

Don't forget that we have an invitation Aerotow scheduled for the last weekend in January at Quaildale. Peter Deacon is the organiser and he reports quite a few entries so far with visitors from as far afield as Tauranga in the North and Gore in the South so we are looking forward, provided the weather plays ball, to another great weekend of towing. It costs nothing to join us, unless you want to fly when there is a nominal entry fee, so come along and have a look - there will be some mighty models there and some damn good pilots.

This is how the big boys do it: Discus 2c on Vimeo A lovely bit of video making good use of airborne and on board cameras. I said the "big boys" although in todays terms this 4.5 metre Discus is a mid-size model - but a very nice one!

This is how the little guys manage without throwing around the thousands of dollars required by the big boys: RC glider towing for beginners, How to do it. - YouTube This all looks a bit crude but it still gets the job done. The velcro towing system is simple, cheap and well proven, although I have some doubts about the "lasso your tow plane" idea. Whatever works I guess.

Electric Gliders

The conditions at Ara recently have frequently been ideal for small gliders and it's good to see a number of people breaking out their Radians and

Phoenixes and enjoying the ride in some of the strong thermals that have been common lately.

B J Carr has started to fly again after a break of many years and his new Radian incorporates many of the modifications suggested on YouTube by Paul Naton. The model looks good in it's flashy colour scheme and it feels much stiffer and stronger than the standard version - it flies well too. It didn't take Beej long to get back in the groove once he finally started.

Guy Marfell is also back in the air regularly after several months struggling with the disorientating effects of Vertigo and he "specked out" in a boomer recently which must have been great fun after being ground bound for so long. Guy's Radian, which he has been flying for at least 5 years (and probably a fair bit longer), is very original and trimmed perfectly. Consequently it really does float well in calm conditions and Guy can make the most of that when he wants to.

Photo 1 the two "new boys" after another morning of easy soaring: Paddy Gordon is another with a Radian, although he is showing considerable determination to retain his "learner" status and his model is showing signs of some distress having had the occasional brush with the planet. Like any foamy though, if you pick up all the pieces and apply appropriate quantities of glue and the occasional

wooden skewer, it just keeps on flying. Amazing things!

My more traditional Guppy has also enjoyed quite a bit of air time and I have had some really nice flights with it including one that started with about eight or ten gentle circles at around 4 metres while thinking about landing, and which gradually built into a strong climb to "plenty high enough".. Those are the flights which are really rewarding - much more satisfying than picking up a thermal at altitude.

Slope Soaring

Someone has been playing tricks on us over the Christmas period. Wednesday evenings have been consistently calm,

which doesn't make for a lot of lift. Carl McMillan and I jumped out of our cars into a moderate breeze the other day only to find that it had dropped to nothing by the time we had models assembled and walked down to the launch point. We walked dejectedly back up to the cars and it started to rain! This has been very frustrating as there have often been some lovely conditions mid afternoon with brisk Easterly breezes. Just what we want, but it's not on to fly there on my own so I need an afternoon flying buddy - anyone interested?

Photo 2 shows Phil Elvy flying his Phoenix one early December evening when the wind was just about okay. There were four of us flying that night and we were all surprised to find we had been flying for about an hour - time passes quickly when you are having fun! The Phoenix seems to be quite a good model for this kind of thing, with the added benefit of an electric motor for rescues when the lift is marginal. Hobby King still have them at US$83.20 which has to be remarkable value. Apologies for photographing the back of Phil's head but it's quite difficult to get a frontal shot and have the model in the photo.

We are just beginners at this slope soaring game though. This YouTube clip really caught my attention: Gli spaventa passere al Corno della Paura - YouTube The first few minutes aren't much but once they get cracking from the Corno della Paura (clearly somewhere in the Italian alps) the action is something to see. The Top Models Swift S1 is most in evidence and the aerobatics performed are more like a jet than a glider. All I need is a couple of years more practice, a couple of thousand dollars worth of model and a damn great mountain with a road to the top and I "might" be able to do this too.

Discus Launch

Those of us that fly these models have been getting in a little practice and I think we are all looking forward to some early competition with an NDC round due in January. Ken McMillan is really getting to grips with his Snipe and seems able to find lift almost at will, with the model showing incredible slow flying capability. He's even practicing tip catches for quick relaunching which is a major step forward in his skill level and might force the rest of us down the same path. I'm not looking forward to that - I have enough trouble landing within 10 metres of where I'm standing without trying to grab the launch peg.

This is the action that Ken's trying to learn: Stobel V3 DLG practice. - YouTube Getting the model to return so precisely to the right spot is a lot harder than it looks and then you have to hook the peg with your fingers and rotate straight into the launch. Another noticeable thing about this sequence is how little effort goes into the throw - it's all about rotating smoothly and swinging the arm. The video concludes with a gentle launch and a 2 1/2 minute flight that never appears to exceed 5 metres - lovely flying.

NDC

We have just 4 weekends left to fly F3K and ALES Radian in January, and one of those is an aerotow weekend, so get ready. I'll be e-mailing those on my list to try to arrange competition days in suitable weather but remember you can fly these on any weekend day and they will be valid as long as you have another MFNZ member to time your flights. It's a lot more fun if flown in a group though. For ALES Radian we would like to encourage more of you to participate, so if you fly a Radian or Phoenix (or any foamy glider under 2 metres) contact me mailto:rex.ashwell@xtra.co.nz and come and have a go. No pressure, you don't have to put in a time, just try to fly the task and see what you think. For those that don't know, the task is to try to stay aloft for 7 minutes after a 30 second maximum motor run, then land inside a 30 metre diameter circle - harder than it sounds!

For F3K it's the usual 4 tasks that we are all familiar with. It would be nice to see all of us there and starting the year off with good performances. The way the lift has been lately it should be easy, right?

Other Stuff

First up a few comments on the new CAA website “Airshare”. If you haven’t already checked this out then have a look: airshare™ - Your UAV Hub I think they have done a good job on this and there is a lot of easy to access information which is applicable to all of us who fly models, not just to multicopter pilots. Get used to the term Drones being applied to everything because exactly the same rules apply to all r/c models. You can register on this site, something which I’m reluctant to do at this stage as they say they may share the information with third parties - I will be interested to hear MFNZ’s view on this.

In the USA the FAA have just come out with a registration rule which is causing a storm of protest: FAA Announces all RC Pilots Must Register - Model Airplane News This is the gist of the new rule, you can find the full text online if you feel like dredging through a lot of bumpf. The AMA are advising members to hold off on registering at this stage: Hold Off On Registering | AMA Government Relations Blog Hopefully our own legislators won’t feel the need to go down this path.

Recently I discovered a series of brief instructional YouTube videos by Les Stockley. Les was a member of the NZ team, along with Joe Wurts and Scott Chisholm, who won the team event at the F3J World Championships in 2010, so he knows his stuff. Although the information is relatively basic and the standard of filming is perhaps not as professional as we see today, there are a few pearls of wisdom in this little lot. Here is episode one: RCSoaring.co.nz - How-To Series - 1. ‘Exponential’ - YouTube You can follow through the others using the sidebar on YouTube.

These days most serious competition models use a lot of composites in their construction which does make them extremely expensive. Given that they are performing essentially the same tasks as the traditional built up models of a few years ago, one wonders if the exotic materials are really necessary. That’s until you see a clip like this: V tail flutter (cam: Flycamone2) - YouTube Do we put our models under severe stress? You betcha!

Recently it was suggested to me that if pilots stood in an elevated position they would be able to fly around a closed course. The technology to fly a triangular course determined by GPS points has been around for a while and a few Kiwi pilots have begun to experiment with it. Dave Griffin briefly demonstrated the technique at our last aerotow and it has become very popular in Europe, where bigger gliders (and wallets) are a little more common than they are in NZ. Here is a quick explanation of how GPS racing works: Brief description of GPS Triangle Contest - YouTube

Here is a very nice aerobatic routine from the full size world. Glider extreme aerobatics - YouTube I don’t know who the pilot is but the aircraft is a Swift S1. One would imagine things would get a little violent in the cockpit with some of those manoeuvres and this is what it looks like to Luca Bertossio in a similar display, also in a Swift: GoPro Hero 2 Swift S-1 2012 by Luca Bertossio in 3D - YouTube Nothing to it you see - this young guy was the World Glider Aerobatic Champion in 2012 at just 22 years of age.

Okay, that’s enough for now, I hope you found something to entertain you in this edition of the Soaring Scene. Feel free to send me your comments (good or bad) and I could use some local photos please. I’m not sure when the next issue will be out but it will include our first NDC results for the year and a report on the aerotow meeting. In the meantime enjoy some good summer soaring and remember that you are doing your bit for the fight against climate change - no carbon emissions for us glider guiders!

— Rex

Dear GPS pilots,

I am pleased to announce the GPS WM 2017. The Championships will be held in Germany, on the airfield of the Aeroclub Göppingen Salach at Gruibingen Nortel in August 2017.

More information will follow shortly. For further information please go to <http://www.gps-wm2017.de/>. This site is available in both German and English.

— Jörg Etzler, etzler@gps-wm2017.de