Radio Controlled Soaring Digest

October 2018

Vol. 35, No. 10

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Front cover: Andy Meade's Antonov An-225 Mriya at Long Mynd, Shropshire Hills, Shropshire, England. This is a huge model: 6m span, 42 lbs. Made from veneered foam, then HobbyKing film over that. Radio gear includes 14 servos, two receivers, and four battery packs. Canon EOS 7D Mark II, ISO 160, 1/1600sec., f6.3, 324mm

Back cover: Readying to launch the beast.
Canon EOS 7D Mark II, ISO 200, 1/1600sec., f6.3, 150mm
Both photos by Shona Meade.

Background cloud photo by Chris van Schoor.

R/C Soaring Digest

The journal for RC soaring enthusiasts

October 2018

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In the Air

We are still searching for either an individual or group to begin the transition to a new publishing team. Please let us know if becoming more intimately involved in the publication of *RCSD* is of interest to you, with our sincere thanks in advance.

This edition of *RC Soaring Digest* is at least somewhat similar to "Star Wars" in format; three sets of three items each — a trifecta of trilogies. Well almost. We do have three pieces from Sydney Lenssen, three from Philip Randolph, and three contributed by ourselves. (OK, we did contribute four, but they're formatted as a single column which sort of makes up for the overage.) And three general topics are covered: the new FAI F3J competition rules, slope soaring, and servos.

Chris Stoddard forwarded links to a couple of videos of free flight gliders converted to RC and flown on the slope. These are very graceful slow flying models.

- Leprechaun Glider. On-board footage.
  https://www.youtube.com/watch?v=btIqDRlHo5A
  The Leprichaun was presented as a construction article in *Aeromodeller* March 1950. Plans are available from outerzone.
- Super Sinbad 93 Norway
  https://www.youtube.com/watch?v=QDwC6gOHAKw
  Plans for a 62" span RC version are available from outerzone.

The deadline for the November issue is October 15. We very much encourage contributors to forward materials to us as early as possible rather than submitting materials at the last minute.

Time to build another sailplane!

FAI

FAI AEROMODELLING COMMISSION

Fédération Aéronautique Internationale

Agenda

of the Plenary Meeting of the
FAI Aeromodelling Commission

To be held in Lausanne, Switzerland
on 27 & 28 April 2018

Issue 1

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Can winch approval save F3J?

Rule changes to halt terminal decline

Uncle Sydney's Gossip column returns

Sydney Lenssen, sydney.lenssen@virgin.net

March 2018

FAI's Aeromodelling Commission meets next month, 27/28 April 2018 in Lausanne, Switzerland. For F3J pilots the main topic on the agenda is how to halt the decline in silent flight contests. What does CIAM want to change? What chance for these changes to save terminal decline?

Winches to be allowed

If this proposal goes through the "launch of the model aircraft will be by hand held towline or winch."

Ever since 1998 when the first F3J world championships were held at Upton on Severn, pressure has been on CIAM to bring in winch launching. At numerous team managers' meetings held by Jury President Bartovsky during World and European championships, arguments for and against have raged.

Many countries do not have enough people to give one or two man tows, so they run their qualifying comps to local rules using electric winches. I guess more than half of countries do this. When they turn up at FAI championships, their pulleys and hand winches are brought out. In the UK perhaps we had one or two practice sessions at home before leaving.

Certainly there is a difference between a regulation F3B winch and a two man tows. The best pilots still gain the most height either way. The big difference is what you need to carry on your travels, especially by airline. Winches and batteries are bulky and heavy. So far all votes have been to stick with hand towing.

In CIAM agendas, any rule amendment is followed by its reasoning. The winch proposal stems from Slovakia and they say: "The majority of pilots are older persons who are no longer physically capable of towing models." (Uncle's note: I have not seen anyone on crutches yet!) "Also smaller teams lack helpers capable of towing. There is also the problem that some pilots are unwilling to assist other pilots because of their physical condition. The winches are widely used in other categories and also at many F3J home competitions."

Allow me to remind overseas Gossip readers that the UK has used winch launching for many years. Two years ago BARCS surveyed F3J pilots asking whether or not they intended to continue competing for the next year. About 50 established pilots replied and only eight replied positively. With great regret the BARCS committee decided that contests could not be run with that number: running the qualifying league to select GBR national teams was impossible, and for the time being F3J contests would not be organised. Since then two invitations to resume and run an F3J comp have fallen on deaf ears.

Returning to the supporting data prepared by Slovakia in the agenda document. “The number of pilots in F3J category is decreasing rapidly. In the last 2-3 years the number of pilots at World Cup or Eurotour competitions has decreased by circa 60%. People are switching to other categories, hence the rules should be designed in the way that motivates them to carry on flying.

“In case the use of winches would be considered, we propose to apply same rules as the rules regulating the use of winches in F3B category, maximum starting current to be 510 Ah and cable length to be 150 m.”

In my personal experience and I have attended several FAI championships in Slovakia over the last 15 years, and their organisation of contests is amongst the very best in the world. They are aware that the changes proposed are radical, and they have consulted widely with pilots and trainers from different countries. People agree that the change in F3J rules is inevitable to keep the category alive.

Rarely have the arguments for change in FAI rules been put so strongly.

I shall be surprised if the new rule is not adopted, but it is not a foregone conclusion. My query at this stage is that the proposal appears to allow winch towing alongside hand towing which could prove difficult if not dangerous and unsafe. The proposal is also not clear on the location of the winch’s turnaround pulley with respect to the launch line/safety corridor, line length or how long winches and batteries would be allowed to stay on the launch line.

There are one or two other rule proposals. Australia thinks that the winners of fly-offs should be determined by the sum of all scores with no discards. Present rule states that if six or more fly-off rounds are flown, then each pilot’s lowest score can be discarded.

This proposal is so sensible and surely it must be approved. The reasoning? If no discards had been allowed, then the senior winners in the 2012, 2014 and 2016 F3J World Championships would have gone to different pilots; Joe Wurts in 2016, Joe Wurts in 2014 and in 2012 in South Africa, Jan Littva would have been champion.

One other significant change, also submitted by Slovakia, deals with the characteristics of F3J gliders. The new suggested rule is that the minimum flying mass should 1.7 kg, with the added phrase, weight of models may be checked randomly immediately after landing during the contest. I don’t follow this change. The reasoning given does not help either.

“The price of models is very high and pilots, especially juniors, can no longer afford new models. As a result the number of pilots is decreasing rapidly. Instead of motivating juniors, the number of juniors is decreasing.” That statement is true, but how relevant is minimum weight?

Will the rule changes save F3J?

In July 2014 after the F3J World Championships in Martin, Slovakia, that I wrote a Gossip column entitled “F3J is in terminal decline”. It reported on the team managers’ technical meeting led by Tomas Bartovsky and several topics were discussed: models had become very expensive, fewer junior pilots, accurate timekeeping at glider release and landing, and the steady reduction in pilot numbers.

Several experienced pilots suggested way to make F3J more attractive, such as having a maximum wingspan and a minimum wing loading, because the available models produced by skilled manufacturers were now too good. In reasonable weather, in the summer months of the championship season, many pilots find flying 10 minutes is easy.

The simplest and best summary of today's falling number problems is that F3J is not the sort of competition which appeals to an ever larger number of aeromodellers. In the early 1990s, F3J set out to be the simple thermal glider competition, easy for anyone to join, contrasting with F3B which demands far greater expertise.

This Gossip column produced a world-wide response, not only on the BARCS website but also through *RCSD* and RCGroups in USA and around the world. More than 100 modellers wrote in, more than a few very critical of my words "terminal decline." But it was encouraging that many well known pilots - Kolb, Wurts, Paddon and many others - responded with constructive ideas for future action to boost F3J popularity.

Bob Owston, famous for designing and building his own models, wrote: "I am generally against limiting performance via design constraints such as wing loading and areas, there is a case for limiting the international class to a 2.4 metre (100 inch) span. This would reduce costs, particularly for youngsters, be more manageable and render the class competitive for homebuilders. Ailerons and flaps would be permitted."

In my view Philip Kolb came with the best solution: Limit the span, (a maximum span limit), and wing loading, (a minimum wing loading), both at the same time.

Several contributors suggested more efforts to show friends and youngsters the magic of thermal soaring, use non-stretch tow line with one towman and no spotters. Keep everything simple! Whatever change you make, remember that climbing in a thermal is the main reason and attraction of the sport, not launching or landing.

Uncle Sydney's verdict

I welcome that CIAM has recognised that unless changes are made, F3J is likely to disappear.

I admire the efforts of the US pilots, for example, where over recent years Daryl Perkins and several other stalwarts have cajoled and encouraged enough pilots to travel thousands of miles over a fair spread of the continent in sufficient numbers to run a competitive league.

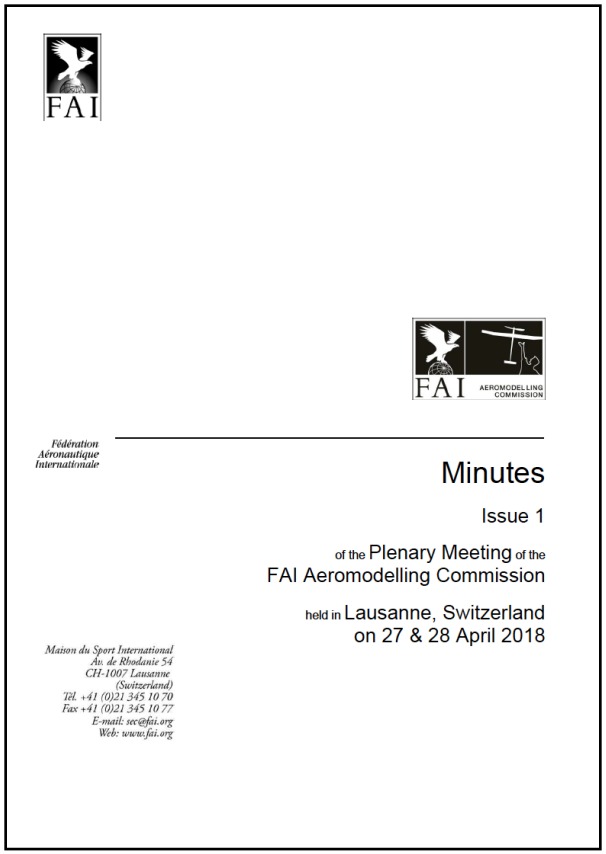
In other parts of the world - Canada, Australia, Japan, Argentina - fighting for a place in the country's national team is far more difficult in terms of logistics than Europe with its Eurotour events.

Survival of F3J depends massively on the efforts of pilots who were engaged from the start of the class and were often in the past amongst the more successful winners. Sadly we are all growing older and less able to cope with the rigours involved. They should now try to identify those who will follow.

Allowing winches is perhaps a start in the rehabilitation process, but by itself is not sufficient.

After next month's meeting it will be two years before new rule changes are allowed.

Let us hope that does not turn out to be too late.



FAI

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Minutes

Issue 1

of the Plenary Meeting of the FAI Aeromodelling Commission

held in Lausanne, Switzerland on 27 & 28 April 2018

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CIAM's New Rules Spark Explosive Reactions

Can F3J survive the treatment meant to save it?

What are the new rules?

Sydney Lenssen, sydney.lenssen@virgin.net

May 2018

Two weeks ago the RC Soaring Technical Meeting in Lausanne took the bull by the horns and introduced new rules aimed at saving F3J glider contests from sliding off the world and continental championship schedules - the death of what for many soaring pilots is the most popular of silent flight competitions.

The new rules

• From next year pilots can use electric winches - either/or hand held winches - for launching their models.

• The models must have a maximum surface area of 150 dm^2 and a minimum loading of at least 20 gm/dm^2.

• There will be no dropped round in fly-offs, and no reflights for mid-air collisions after 60 seconds into the slot.

CIAM, the world ruling body for this class is hoping that its new rules will halt the massive fall in numbers of F3J pilots wishing to compete, sixty per cent over the past five years and still falling, and restore its popularity.

But among many F3J pilots, the bull is still shaking its horns. There has been an extraordinary shock reaction: hundreds of pilots from all over the world have reacted on social media, protesting, angry and forecasting the end of this class.

Many pilots are concerned, ranging from previous finalists and champions to your typical enthusiast who enjoys travelling across country and continental boundaries to participate in their friendly sport. Only a few can see the logic and reasoning and are prepared to wait and see how the changes work in practice. More than a few want CIAM to think again!

In all fairness, while not condoning some of the rude remarks, I still have severe doubts that F3J will survive.

What I hope to write here is a sober report on F3J problems and why I believe that rules revision is vital.

I remain hopeful that CIAM's approved changes prove to be a step in the right direction.

Joe Wurts, the first F3J World Champion in 1998 at Upton-upon Severn, UK. Twenty years later with the latest F3J World Championship about to take place in Romania, many soarers are fearing that this could be the last.

Why change must happen

How many pilots and helpers do you need to run an F3J competition? Last summer I was shocked when speaking to Arijan Hucaljuk, world and european F3J champion in 2016 and 2017, to find that he had flown only one new F3J model that year. In Croatia there had been so few pilots wanting to qualify for Slovakia. He now has more F5J models and flew in this class more often than not.

In Britain, a survey was made of committed and earlier regular F3J pilots, asking their intentions for 2017. With great regret BARCS came to the conclusion that the F3J league to determine the national team could not be run. In previous years half a dozen or so qualifying rounds were contested. So GBR team 2017 was scrubbed and for the first time ever we had no team entered. Same applies this year for the Romanian world championship.

The BARCS committee reckoned that to run a typical one day low-key friendly contest you need to attract at least 16 pilots, and that would only give you four pilots per slot. Any last minute absentees would render the day scarcely possible. The days have gone when winning a place in the national team was the pride and joy of keen F3J pilots.

The numbers problem is not limited at national level. Despite the high entry fees payable to FAI championships for pilots, helpers and team managers, reduced entries increase the financial risk of running a championship. Until recently, opening and award ceremonies found the whole host town gathering in the main squares, sharing and enjoying the sight and excitement of pilots from so many countries. But they cost money. The vital point is that to survive F3J must attract more pilots.

Why are numbers falling around the world? Main reasons are that as pilots grow older they cannot find the energy, ability and will to tow, and feel uneasy about not sharing the effort. The cost of models - competitive ones - has reached a level that deters all but the richest and keenest of youngsters and dads. When you do find a “youngster” - somebody no older than say 30 - he finds that he is trying to make friends with people 20 and sometimes 50 years older. The chance of an immediate meeting of minds and enjoyment are slim.

To survive as a class, F3J needs to go back to square one, the era in the 1980s when pilots from Holland, France, Germany and England found that they could meet to compete two or three times each summer, the birth of Eurotouring. The gliders they flew were often rudder/elevator. Single man tows were in order and the two-man variety was still 10 years away. Why was

it popular? The participants were keen to see and watch F3B pilots, but that was a difficult sport taking greater skills, distance, speed and duration, three separate tasks.

Why can't we compete with something much simpler they would ask: simple duration with a 10 minute slot time, plenty of time to natter and swap experiences, and most pilots did not even launch on the buzzer - you waited until somebody bold enough found what looked like good lift. OK, that is oozing nostalgia and we are never to see such times again. But the lesson is that we need to find something much simpler and cheaper if we want to attract new people join the fun.

F3J was born to be a simple thermal soaring contest, easy for anyone to join.

A look at the new rules

In March the CIAM 2018 agenda was published and Uncle Sydney's Gossip column was revived to comment, and I made a mistake in concentrating on the proposal to allow winches for F3J launching. The main emphasis should have been given to the changes in the model's specification, size weight and wing loading.

The Slovakian proposal for the meeting was that the weight of the model should be at maximum 1.7 kg, a very strange idea aimed at reducing costs. But as most delegates agreed, this did not address the issues. The best and most convenient method of reducing the flight performance of F3J, as spelled out by Philip Kolb two years ago, is to limit the span and insist on a minimum wing loading.

What CIAM has decided is to go for a minimum surface loading, 20gm/ dm2 and maximum surface area. I am told that other simpler options were debated, higher loading up to 23/25 gm/dm2, or a far easier, simpler to process requiring weight to be divided by the wing span with a minimum weight of say 0.6 kg per metre span.

Don't be surprised if all these numbers in the rules are changed after trial runs in the years to come.

I don't see that the new rules will necessitate many pilots to buy new models. It will be easy if necessary to simply add ballast. It will be interesting if the manufacturers find it necessary to develop new approaches to optimise performance. I have not seen so far any computer simulations to estimate the increase in sinking speeds and consequent loss of flight time.

What I understand is that in straight flight the higher wing loading will hardly affect sinking speeds. But flight times will reduce markedly in circular flight when to you fly into a patch of weak lift and you seek to centre the thermal. My own rough guess was to recognise that 150 dm2 max. area at 20 gm/dm2 equals 3 kg which I often ballast to in typical UK winds. Unballasted my two current Supras weigh in at 2.1 and 2.3 kg.

Most experienced F3J pilots appreciate the excellent development work over the last 20 years put in by the main designers, producers and their dealers, in aerodynamics and materials and building techniques. CIAM's new rules appear to protect producers from requiring to retool drastically, although some may not agree with that!

When the CIAM agenda was sent out before the meeting the proposal to allow winch launching gave little or no detail or rules to determine the specification of the winch and battery, and how winches would be used in the competition. It was indicated that the same specifications would be used as in F3B and that seems to have been followed in the issued minutes. The minutes also say that for world and continental championships a maximum of six winches and six batteries may be used at any time on the winch line by each working team. Interchanging among winches and batteries… is totally the responsibility of the competitor.

This appears to hint at what the rule makers mean to happen. Critics have wanted to know if winches and batteries are to be allowed to stay in place in

the safety corridor, and how would the launching spots be arranged along the corridor?

For any one round, the three man team will fly from one spot, with its six winches plus batteries. These are then cleared away to be laid out again in the next round at a different launching point along the line.

There has also been speculation that if the number of teams competing exceeds the number of flight lines available, then two teams could occupy each launch point and the matrix could ensure that only one pilot would need to fly in that slot. That means two lots of six winches and batteries on the spot.

FAI championships progress at a leisurely pace and swapping positions along the line will even out fairness.

It all sounds complicated but also feasible. What is not clear at present is what happens if hand towing is taking place also somewhere along the line, a potentially dangerous situation can easily occur. A few pilots I have spoken to feel that it won't take long for winches to dominate and hand towing to disappear.

Highlights from the media

The following section contains a selection of edited entries from Facebook, RC Groups and BARCS websites which give a flavour of what the world's pilots thinking.

Darius Mahmoudi: was among the earliest inviting comments on CIAM decisions made by people not wanting us to keep F3J and its quality, or simply don't understand what we do.

Jo Grini: F3K and F5J classes have rocketed sky high, possibly making F3B and F3J smaller. We should have come up with solutions that make it easier for new pilots and younger to enter.

Dominik Prestele: That rules are shit. We maybe gain10 people and lose 100.

Massimo Verardi: The new rules are not enough to change something but enough to make a lot of confusion.

Thomas Schoenbucher: Better decision would be to allow bungee. The funny fact is, I have enough old planes in the basement.

Marco Generali: In many countries the national championships already use winches, a small disadvantage while travelling, but less trouble than bringing a full team of towers. The 20gm/dm2 wing loading is a big limitation given the 1500 gm planes seen in recent years, but only the small amount of dead condition flights will be affected.

Marco Juznic: Keep the rules like they are, people who like F3J will continue to fly and help each other. Sooner or later people from F5J will come back because F5J will be overcrowded.

Tuomo Kokkonen: In many countries winches are needed otherwise running a 10 pilot competition is not possible. But that does not mean that international F3J rules have to be changed. Eurotour flying as we know it will stop, and there is a danger F3J will die in Europe.

Joe Wurts: The conception of F3J was to bring back the "good old days" where stick and tissue open frame aircraft could have a world championship event. Prior to the first WCs I forecast that the event would evolve to very high technology carbon fibre airframes with even higher strength/ weight ratios than the F3B planes. It took a while, but this outcome eventually happened.

Conny Ulvestaf: Not all pilots can get the super duper light models, now with the 20gm limit all will have the same equipment. F3J has had fantastic development in the last 5 years. Will this stop now? Probably. Is this good? Probably not.

Cederic Duss: We need to find a way to push people to come. A winch won't help.

Tobias Laemmlein: Even worse than I was hoping. In a way we need to accept the new rules. I could live with the wing loading thing This will increase the level of competitive challenge and makes the pure thermal task more appealing. The leading edge in aeroplane development anyways has shifted towards F5J already.

The winch will kill F3J, at least from the perspective that I, and let me guess many others too, the simplicity and the team.

Thomas Kiesling: For those that travel by air, winches are far cheaper than bring dedicated towmen. I'm not sure winches will save the class, but I also don't think they should be a reason to kill it. There still will be a team aspect. It will just be different. Not necessarily better or worse, just different.

Graham Wicks: I have a nice Hollenbeck winch for sale. The 20 gm wing loading is like trying to take a step backwards. In the modern world you don't reverse technology.

Joe Wurts: Lots of heartfelt comments. I remember making similar proclamations of doom when HLG transitioned to DLG nearly two decades ago. Then I flew some DLG and got on board with the concept and my negative thought went by the wayside. One of the reasons why I'm not attending this year's F3J WC is that we could not sort out a full team with helpers.

Tuomo Kokkonen: What do you think will happen to F3J Eurotours. Is there a practical way to continue despite the rule change?

Darius Mahmoudi: I just can speak for my Contest in Riesa. If we continue next year, there will be local rules to mitigate this. But my concern is that there won't be a lot of pilots left to participate.

Erik Dahl Christensen: It will always be valuable for subcommittee members to receive as much information and perspective as possible from pilots with hands-on knowledge from all classes. I know that Ralf Decker has made and tested a system to detect the exact release point and height. It was tested 2/3 years ago and can be used to make F3J look even more like F5J with more than time gain from low launches. Is anybody interested?

Daryl Perkins: I for one am good with the winch rule. In this country (US) we had to fly off winches to keep F3J from dying. I do understand that many of you will be against winches. At some point you will have to face the fact that without new blood coming into soaring, the use of winches becomes a necessary evil. I am quite disappointed with the minimum loading rule. It accomplishes nothing but shifting optimum design for each given condition. What it has done is turn the clock back 10 years….I don't like to see technology going backwards.

Ryan Hollein: It would be a pity if we change the rules and start with winches. We were flying in a German/Cyprus mix team (in Lviv) and had no problem getting our planes up. If we needed something there was always someone who offered us his help. This year I participated in three competitions flying with pilots from seven different countries and we had lots of fun - and some problems understanding each other.

Philip Kolb: A minimum weight limit has little or no meaning as long as it does not come along with a maximum span limit. To emphasise thermal flying skills my proposal would be to implement a "sporty" definition of minimum weight and maximum span - say 2 kg and 3 metres??? - FUN!

Joe Wurts: 2kg and 3 metres kinda reminds me of the very first F3J planes! I like the span limitation concept, maybe even more than a minimum weight limit. My only concern is visibility. My eyes aren't getting any younger!

Jim Soars: Holy crap winches are approved. I can't wait to see the logistics of the flight line in a large competition.

isoaritfirst: I would be looking for the thrill of a nice thermal or the fun of hanging onto a small one. I'm less interested in sticking my nose in the dirt. Flying gliders is an attractive and competitive game. Perhaps F3J has concentrated too much on the comp at the expense of the grace, which attracted most of us into flying gliders in the first place.

Maria Freeman: If it is about "thermalling", then reduce launch heights or increase slot times.

Bob Dickenson: I guess that we all ought to just get on with enjoying our flying as much as we can, while we can.

Austin: If they are serious about saving F3J, then this comes to mind… 1. Wing span max 3.1 m 2. Minimum weight 2100g 3. Maximum weight 2200g 4. Nose radius should be fat to reduce dart board landings 5. 5single man tow with pulley and 130m line 6. Line thickness max 1.15mm 7. Pilots must use timer/launcher from opposing teams when not flying 8. Pilots must not receive any advice or spotting from their timer/launcher unless it is a safety matter 9. Bring back discard after six rounds flown I am taking models back in time I know, but wasn't it great then?

Richard Swindells: Austin's ideas are great had they been implemented 10-15 years ago. However the bird has already flown the nest for F3J. Models we are flying today launch higher, travel further and sink slower compared to what we were flying 10 years ago. Although sink rates might not have halved, overall performance has at least doubled.

What happens next?

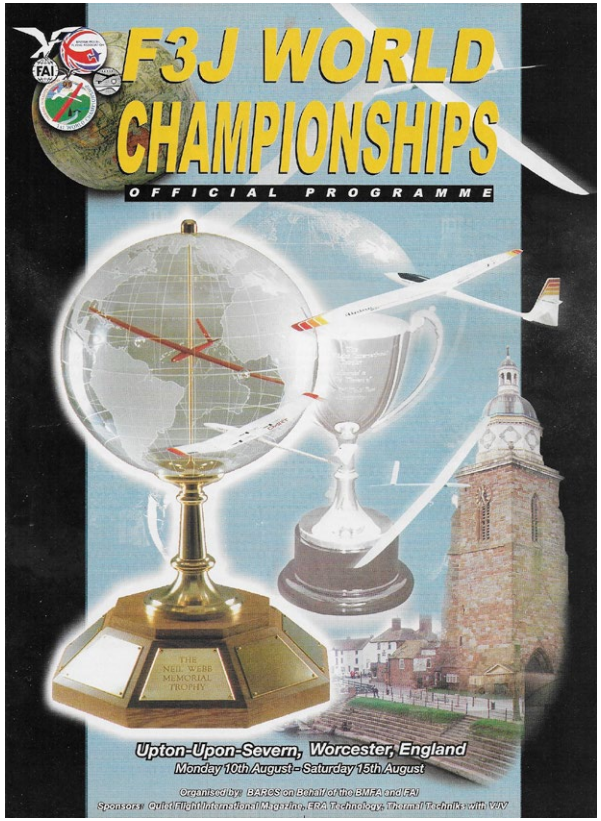
There is still a long way to go to sort out a whole host of questions. It is fortunate that these new rules will not be required until 2019, but I hope that opportunities will be used to test any new systems. We do not want to see a real championship frustrated by having to stop and debate how to proceed.

I think it would also be sensible to clarify the best way to continue with Eurotour events. It would be simple to just carry on with present existing and tested rules. There is a strong and important link between FAI and Contest Eurotour, and most of the Eurotour events carry the FAI symbol and flag. No reason to run championships and Eurotour with the same rules.

From Turbochargers to Airfoils for Model Gliders

Rolf Girsberger, an outstanding pioneer for RC model gliders has died

Tomas Bartovsky has written a memorial to Rolf Girsberger and it has been published in *CIAM Flyer 3-18*. This edition is now available from the FAI *CIAM Flyer* archives at <https://www.fai.org/sites/default/files/ciam-flyer_3-18.pdf>. This PDF document is two pages in length and includes several photos. The file size is under 1MB.



The poster announcing the very first F3J World Championship at Upton-Upon-Severn, Worcester, England. Held from Monday August 10 through Saturday August 15, 1998, the contest was won by Joe Wurts.

Final F3J Festival for Rules Mark One

Babenhausen, Germany - 15/16 September 2018

Sydney Lenssen, sydney.lenssen@virgin.net

02 September 2018

What promises to be a “sweet and sour” weekend of Contest Eurotour flying before the new F3J rules allowing winch towing instead of two-man hand towing come into force - January 2019 - will take place weekend September 15/16 September in Babenhausen just a little way south of Frankfurt.

Why sweet and sour?

After the biggest set of rule changes by CIAM in Lausanne since the stake was banned, many dedicated pilots, with their deep tradition of friendship and fun, say that the winch and new rules spell the end. Entry numbers tell a similar tale. Contest Eurotour F3J entry numbers are down to less than 200 in total compared with more than 600 in previous years. In many countries F3J meetings are being cancelled. That is the “sour”.

One compensation in this sad tale is that F5J is booming. Entry numbers have passed 500 and growing. Pilots who have resisted using propellers and electric motors to launch are expressing surprise at how exciting it is to learn new skills and strategies.

When Philip Kolb heard about the rule changes, he hit upon the idea of encouraging F3J pilots old and new to get together for a final celebration of 21 years of FAI contests and FAI championships under Mark 1 rules, a chance for everyone to enjoy a great reunion, keen competition with plenty of beer and stories old and new. Babenhausen is also the last contest in the 2018 Contest Eurotour series and the new champion will be crowned. That is the “sweet”!

Philip’s call for an F3J farewell party did not go down well at the start: even his good friend Stephan Lammlein described his idea as nonsense. “We must make ourselves strong and press for better rules.”

Darius Mahmoudi thought Philip’s idea was counterproductive at uncertain times for F3J.

Philip backtracked a little. “Let’s call it a retro meeting for F3J and attract as many ex-F3J pilots to come - including me.” Babenhausen is a contest for the F3J family to get together again, and as Erel Cankan says, “if all of us in the family wants, we will find a way to put things back on track again!”

At the time of writing 90+ pilots have entered for the two days. Let’s all hope that the weather is kind. The new flying site is planned to allow 120 pilots to compete, so there is still a chance to enter. Flying or spectating come along and help everyone celebrate in style and joy.

Cheering our world champions

What are our reminiscences? Let’s start with F3J world champions.

Starting with 1998 at Upton-Upon-Severn, the winner was Joe Wurts, still flying today in various classes, and still standing on podiums and revered worldwide, always ready to give expert advice. The start of World Championships as opposed to European friendships.

Two years later the championships were on the island of Corfu, troubled a little by smoking forest fires and won by Jan Kohout from the Czech Republic. He plays a lovely guitar repertoire but was tempted out of thermal flying a few years later by mountaineering.

Next stop was Finland in Lappeenranta where a worthy winner was Arend Borst from Canada who almost won in 1998, and appropriate since the next world championships were already booked for Canada.

2004 Red Deer was a chance for teams to experience the Rockies and compete on a sod farm. The week was almost marred by a typhoon which managed to uproot one of two giant marquees held down by three metre scaffold tubes which were just ripped out of the ground as the cover blew nearly 200 metres and almost onto the main highway. Winner this time was David Hobby from Australia flying in his first F3J contest with no track record in this class. In his job he did fly remote-controlled drones across the Atlantic, a true professional.

Back into Europe for the 2006 worlds and flying in Martin, Slovakia one of the worlds most beautiful model flying sites. What happened? David Hobby won again, and not only that, in the fly offs he had a mid-air which increased the dihedral on the port tip by 20 degrees and tore the surfaces. but he still flew some 400 metres to land safely near the landing spot. He was so far ahead by this point that he didn’t even need his reflight to become champion again.

One country, Turkey, had been F3J keen from the start and had set new standards in how well contests could be organised and managed. The reward was being chosen for the 2008 world championships and again flew on a pristine sod farm at Adazapari. The winner was Benedikt Feigl, younger brother of Sebastian Feigl who had won a team world medal two years before, and son of Peter Feigl who flew models and full-size gliders. The three man Feigl team was and still is a notable force to be reckoned with.

The next world event was in France in Dole Jura, 2010, and although the flying site was not ideal, the food, wine and activities were great. Daryl Perkins who had been world champion some four times in the F3B class became world champion in F3J, much to his delight and my surprise. I had always reckoned mistakenly that Daryl did not have the same keenness for J as B. US teams are selected after one trial contest, not a series or league, and Daryl until 2009 had never gained a team place. But his competitive spirit was not deterred. He came and conquered. Since then he has been the driver for F3J in the United States and encouraging to keep it alive and kicking.

The world championships in 2012 moved to a new continent, held in South Africa at Kempton Park, still flown in mid summer and so that the weather was a testing mix of snow,

wind and cold in the Southern Hemisphere . The event was well organised in an exciting country by Michelle and Craig Goodrum and yet another win for Benedikt Feigl. This was the first WCs that I missed, but I was lucky because I cannot take cold. Vladimir Gavrylko recounted that he looked forward to getting back to his hotel to thaw out, only to find that the bath taps were running cold too!

In 2014 the world championships returned to Slovakia and Martin and a new young pilot with the widest of smiles, Jany Littva became world champion. He was to become one of the young pilots with skills that left the established oldies wondering what they could do to match the pilot skills and reactions.

Slovenia has always held a strong reputation in the F3J circuit with its beautiful and unique flying site in Bovec, surrounded by a wide bowl of mountains. Sadly the sports airport there was lost to models when a new road widening scheme chopped off space. But the site at Vipava is almost as good, just as friendly and blessed with good wines. Champion of the world in 2016 was Arijan Hucaljuk from Croatia, another youngster with a shy smile, a man who seems to smell thermal lift that others cannot see, a man who stands with his feet forming a V-sign around the landing spot and 9 times out of 10 puts the nose down on the spot.

And finally in 2018 the world championships moved to Romania, to Brasov where Arijan Hucaljuk won again, just one of a series of trophies in F5J and F3K which Arijan has won over the last few weeks over the summer.

In his comments last week about the Dupnitsa F5J first European Championships, Graham Wicks reports that Arijan's launch height was 14 metres in one slot, he sank to 7 metres and then thermalled to fly out the slot. What a pilot, another win!

Having reached the end of the list of F3J world champions, the feature which intrigues me is that there are three pilots who have won twice, David, Benedikt and Arijan which is remarkable considering the number of excellent highly skilled pilots from so many countries, any of whom could have triumphed, but these three have something extra. What?

Who will be flying in Babenhausen's F3J Festival?

Not surprisingly, most of the entries are from Germany, this year's end of the Eurotour, and many of these pilots are not people I recognise to date. I hope they will excuse me if I stick to people I know, some going back to when F3J started.

Dieter Rybold will be flying along with Knut Bundgen, one of the organisers, Robert Braune has a strong track record and I am pleased to see lady pilots Catharina Schmidtkunz and junior Carolin Weihe. Stefan Hollein will be flying the flag along with Ryan. A keen sponsor/pilot/guru is Thomas Rossner of Servorahmen fame who enjoys beer and seems to turn up at all the best competitions all over the world. Helmut Rohner is another pilot who flies everywhere, takes lots of photographs and make puzzles on Facebook, and always tells me off - "Sydney, du weiss ich spreche kein Englisch."

Next on the list of pilots is the inspiration for this Festival, Philip Kolb who sadly is transferring his loyalties to bigger and better classes of glider models. Karl Hinsch has flown with Philip for many a year. Stephan Lammlein will be there although at this point his son Tobi who now lives and flies for Switzerland, a former German junior world champion. I remember his mother Gabi going shopping in Lappeenranta because she could not put up with the stress of watching Tobi in the flyoffs.

Jany Littva and his father Dr Jan Littva are entered, Cederic Duss a more recent star pilot, Jaroslav Vostrel of the Pike family, Martin Rajsner another star, Christian Keulerz, Felix and Willi Parsch, Christian and Manuel Reinecke and the keenly competitive Dominik Prestele. Darius Mahmoudi will fly as well

as report I suspect for Aufwind. We shall also be pleased to see Arijan Hucaljuk, no doubt keen to add to his 2018 prizes. I am also delighted that Erel Cankan and Salahi Tezel will be flying in from North Cyprus to fly the Turkish flag.

Italy could not be left out and Marco and Giuseppe Generali along with the Gallizia family Giuseppe, Carlo and Marco. I am especially pleased to see Vladimir Gavrilko and Oleksandr Chekh from Ukraine, but there will not be time over the weekend to assemble the swimming pool.

That's the list as it stands at the time of writing. There could be and I hope there will be more to come. Apologies again to those pilots I don't recognise.

I do not know how Tomas Bartovsky found out that I was intending to attend Babenhausen, but he did ask me to pass on his best regards to the F3J family and all his friends. I do know that Tomas is a firm believer that F3J will survive and thrive, and will get over the rule changes. "There will always be those keen pilots who wish to become champions!"

Finally I am sure that many of us will have lost friends who have passed away over the last 20 years, friends who shared the same enthusiasms and dedication to F3J. I should like to remember Mustafa Koc, Otto Barvels, Utz Giesa, and Hans Fischer, and if my memory was better, others too.

— Uncle Sydney - really gossiping for the last time.

In the next edition of *RCSD*...

Adaptable ballast spreadsheets using array formulae

by Mike Shellim

Ballast makes your model fly faster! The problem is knowing how much weight to add, and where to add it. You can play with your ballast by trial and error, but Mike will let you in on a little secret - it's far easier using a ballast spreadsheet!

In this column Mike explains the principles behind the ballast spreadsheet and how to make it easily adaptable using a "power user" Excel technique. Finally, he'll provide some links to examples.

Watch for it!

Trippp Report: Jumpoff Mountain

elevation 5700', Friday 7/27 - Sunday 7/29

(another too silly travelogue by Philip Randolph, amphioxus.philip@gmail.com)

2 cent ences:

Road: 12.1 miles of "Relentlessly long and bumpy." [Quote of email to Steve Friday night. He came anyway.]

Flying: Durn good.

Mo:

Location: Jumpoff Mountain, near Jumpoff Lookout. About 25 miles ESE of Mt. Rainier. 10 miles WSW of Naches. We picked this for its rare E wind site. You can also fly the cliffs in a west wind.

Road in: That 12.1 miles (GoogMap says 11.6) took 1.5 hours. Steve: "I was in first gear all the way." So Steve's memory from 2005 was accurate. Mike D.'s statement, "It's not that bad," is relative to the vehicle and tire size. Even Chris said, "It just didn't let up." Bill B: "There was one steep rocky spot with 10" rocks where your 2WD van wouldn't have made it. Just after the 12 mile turnoff we dug rocks out Friday night so my CRV wouldn't bottom out."

Hu: Friday: Chris Erikson & Michelle, Philip. Saturday: Steve Allmaras, Damian Monda .

Weather: 12° - 20° cooler than lower elevations, e.g. Naches or Carnation. Clouds shaded us part of the time. Saturday afternoon there was some thunder and 37 rain drops.

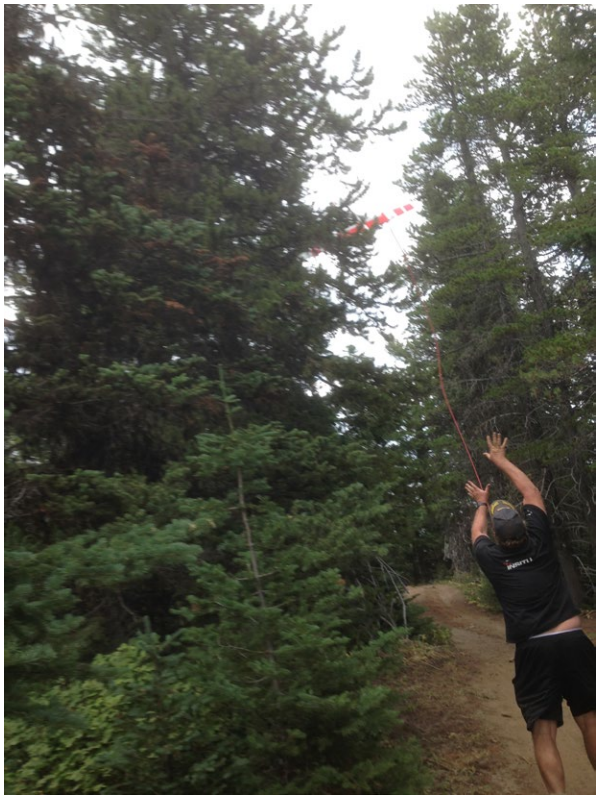
Winds Saturday and Sunday were from the east, 5 -10, sometimes steady and big lift and good winds straight in, but sometimes alternating thermal and sink. So sometimes winds were lift. At other times the strongest winds were with sink in front, thermal behind.

Flying: Friday night (west wind) Chris launched his 6' Opterra powered wing from the point looking west down on Klochman Rock and Rampart Lake. That point is 200' cliffs. Michelle and I took pics of it in front of Mt. Rainier and sunsets. Michelle & Chris took pics all weekend. I only took a few.

Landing zone: The meadow was heather, low sage, and Cascade bilberry (8" high huckleberry or blueberry), plus odds and rocks. The slope dropped off to a Cascade bilberry shelf. Good recovery zone. Safe enough for crunchies.

Saturday morning, great winds for my Mini-Ellipse 60" glass V-tail and curious local hawks. Later it started cycling, and then picked up late afternoon. Steve, Chris, and Damian flew the heck out of 2.6m Phoenix Evos that have cheater motors. Later I flew a 60" DLG wing on an antique Monarch II fuselage with a V-tail. It flew so good it allowed me to mostly stay up with the motored guys. During the trip Steve attempted to fly his Super Scooter, and Damian his 60" Jart. Just not that kind of lift.

Saturday eve: Frisbee golf turning into a 3 mile round-trip walk to Jumpoff Lookout, where we caught up with Michelle. She found a GeoCache and a broken outhouse that she very generously said Chris and I could fix. That's an inside joke. Last October 4 on Timberwolf Mountain, 6300', Chris and I installed plywood and a seat in an outhouse. Flying in clouds streaming up the ridge. Then it started snowing. Heh.



Chris uses a tire iron to get Damian's Evo out of a tree.

Damian up a tree: Well, his Evo. Ran the prop while shredded pine needles sprayed off. Chris threw a cord hooked to a tire iron over it. Jiggling. Someone caught it.

Sunday, ditto, with additions. Chris was doing landings with his 4' Cub, tundra tires. Then he flew this 29.5" electric ducted fan P-15. Alexander Lippisch planned to equip a usually rocket powered ME-163 Comet with Bf-109 landing gear and a Jumo jet engine. Delta. Went crazy fast. It was a measure of his skill that he kept control of it when it looked like a gnat on a polar bear. (Not a polar bear, Philip. A cloud. Well, it looked like a polar bear to me, Dr. Freud.) He rolled it. It had a roll rate so high that if you put a handle on it, it would be a weedeater. I flew a 28" Me-109 pylon racer. Not used to those little fast things. A challenge. Landed okay, tho' downwind which was dumb.

Sunday afternoon the lift was sometimes thermally booming, sometimes sink-cycle wind. My Encore and the Red DLG wing mostly stayed up.

Destruction: Steve and Chris were way way up with Evos. Steve came down a bit too fast. (Over VNE.) Chris yelled, "Part flying." And then, "Look, it's going up! It's Flettner rotoring up!" (Flettner developed rotor-wing sailing ships in the 1920s.) This little white thing flashing in the sun, drifting north. Steve landed okay. An aileron ripped off his Evo's right wing. We walked parallel through the woods for half a mile. All we found were some cows. For materials with which to build a new aileron I offered Steve a vintage coroplast "Bernie for President" sign. He declined.

Evenings: Yeah, well, you know. Intellectual discussions, like (Steve): "While we were throwing peanut husks at each other Philip didn't notice I had got a few hulls in his t-shirt pocket." Philip: "I got a couple in Chris' boot." So yeah, the usual stuff.

Drawbacks: Cows. Everybody said, "There was this young cow who wouldn't get off the road, but just ran up it ahead of me." Damian speculated this was the prey mentality, to run straight. In the case of these cows, running straight was at the ferocious pace of 2 mph. Which was about as fast as we could drive on most of this. The drawback of cows was that they had turned micro-meadow camp sites into slightly torn up sites, thus liberating the normally root-bound soil as dust. They also increased the local fly population. Back in 2005 the last 2.4 miles out were behind a herd of cows, and cowboys. They explained they kept track of at least some of their cows with GPS trackers. Driving out was faster this time, exceeding cow plod by at least one to three miles per hour.

Wildlife: We saw a hummingbird.

Evenings: Yeah, well, you know. Intellectual discussions, like (Steve): "While we were throwing peanut husks at each other Philip didn't notice I had got a few hulls in his t-shirt pocket." Philip: "I got a couple in Chris' boot." So yeah, the usual stuff.

Quorum resolution: Next WAMS trip: Timberwolf or Roaring Ridge, maybe Labor day, or.

En sumo toto: Worth the bumps.

Chris' Opterra against the setting sun, Klochman Rock and Rampart Lake.

Another way to fly!

How to identify the ideal slow DS ridge.
A slow DS challenge.

Philip Randolph, amphioxus.philip@gmail.com

The latest dynamic soaring speed record is 545 mph. That's 26 mph slower than the muzzle velocity of a Colt 1911 .45 pistol. Wow.

But I assume I hold the lowest published speed for DS. Well, slope flyers do it all the time, but I wrote about it. So there.

Back in June of 2005 I had my most blissful flight ever, up on Bethel Ridge, 29 miles east of Mt. Rainier, in the Washington Cascades.

This 2018 Labor Day weekend I tried to reprise it. It seemed possible this weekend, but no such luck. I now think that back then I lucked into moderately rare airflow conditions, as Bethel probably isn't the ideal ridge. I had just got lucky.

Still, I can label the conditions and the ridge shape that should work. An overlooked grassy ridge might turn out to be the funnest site you ever flew. (Provided you're not into that multi-hundred mph stuff. Me, I'm just not that skilled.)

I wrote about this in the September 2007 *RCSD*. But it's worth visiting again.

Title page: Philip flying slow DS circles in the convergence of thermal flows over Bethel Ridge. Photo by Erik Utter, June 1, 2005.

The weather: Sunny, no wind, no thermal inversion.

You'll need a thermal day. Basically one of those high-pressure days where you went out to slope and there wasn't any wind. Or just a little. That's because you'll need warm air coming up both sides of your ridge and converging.

Wind will shift the convergence zone, which you have to cross to DS. Or worse, wind will make sink on the aft side of your ridge. Or sheer.

Plus you'll need a day without a thermal inversion. Thermal inversions, warm air sitting on top of cooler air, kill thermals.

The ridge: rounded, not knife edge.

Over a rounded ridge top flows will converge at a relatively flat angle. That's better than over a knife-edge ridge, where flows angle up more steeply.

A knife edge gets you more ridge lift, but the flows converge at less opposed angles than over a rounded ridge.

We're after the flattest opposing flows we can find, rather than a bunch of up. Though up helps, and makes the flying easy.

See Figure 1 on the opposite page.

The glider: Polyhedral is easiest.

The great thing about poly's is that they stay upright. It's harder to make a fatal mistake. Especially since you'll be flying close to the ground.

Ailerons are just a good way to get into trouble, unless you are pretty skilled. They do have status, but. Feel free to skip the ailerons.

Bethel Ridge: Not ideal, but.

Bethel isn't ideal. It has shards of basalt sticking out all over the place. The bump at the end is all broken basalt. The landing zone is flat area about where I drew the DS circle in Figure 2 (on the last page of this article), but it's full of basalt shards. The south side of the ridge is a steep mix of dirt with shards sticking out all over the place. The north side is talus slope, all rock, with a couple bands of conifers above a cliff. Below the cliff, to the west and north, is a huge talus field.

See the included photos.

Plus, access is only by 4x4.

The good thing, back in 2005, was all that talus warmed up and started cooking thermal uplift. So did the south-facing slope. And it all converged.

Here's the description from that old *RCSD* article:

The easiest dynamic soaring: Where warm air wicks up both sides of a ridge—slow DS plus thermal lift. (From *RCSD* September 2007.)

Intermediate flyers with light slope planes, here's an example of a kind of dynamic soaring you can do. It won't set speed records, but it's a delight.

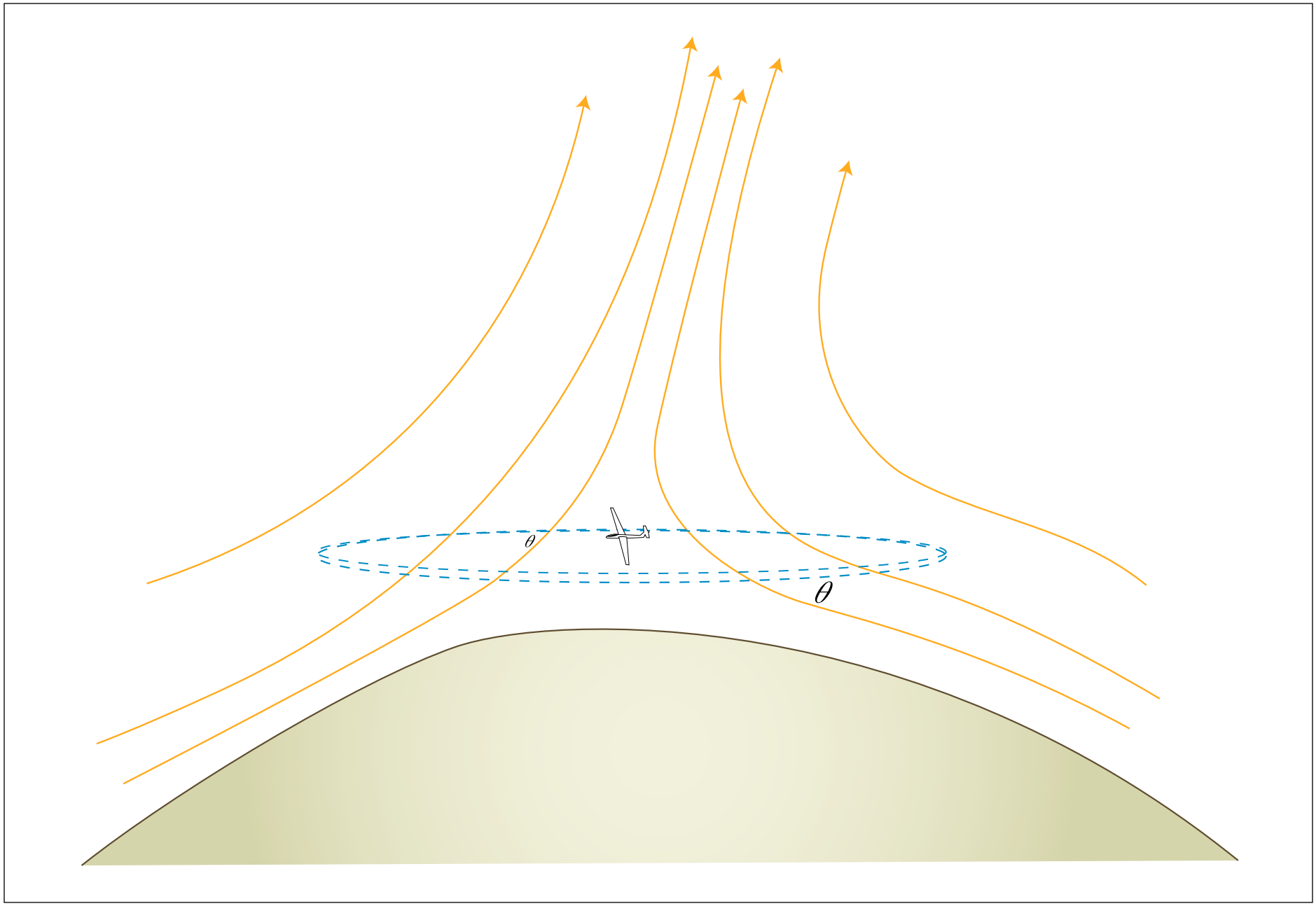


Figure 1: The easiest dynamic soaring is in converging thermal airflows above a rounded ridge. Graphics by Alex Hart, September 2007.

Above: Bethel ridge from road. Lots of talus makes for good thermal generation but poor landing zones.

Right: Erik and Cole Utter on Bethel Ridge, 2018. Mt. Rainier in the background. The Bethel Ridge landing zone is a flat area about where I drew the DS circle in Figure 2, but as you can see in this photo it's full of basalt shards.

Late one summer, southwest of Mt. Rainier, WA, CEWAMS (Chris Erikson's Wild Arsed Mountain Slopers) camped on a narrow ridge surrounded by a huge, steep talus field. Its basalt had warmed all day in the sun. So near sunset, thermal lift was coming up both sides of the ridge. But the lift was so light not even the EPP Herrings were doing very well.

The only hand launch glider (HLG) we had along was my 40", "underhand launch," polyhedral Ionosphere, from Thermal Grommet Works. It floated around quite happily until I started flying circles over the ridge. Then, even in that light air, it started whipping. The other guys stopped trying to fly, and just lined up to watch and take pictures. A balmy evening, Mt. Rainier twenty-nine miles to the west, the sun setting just to its south, probably the most blissful flying I've done.

In search of this is why we fly where we fly.

I had a vague notion that I might be doing something sort of like dynamic soaring. In retrospect, yes: My Ionosphere, in addition to having a little thermal lift, was punching back and forth between opposing air streams, gaining the difference in their velocities twice per circle. And it was also getting slope lift! See Figures 1 and 2.

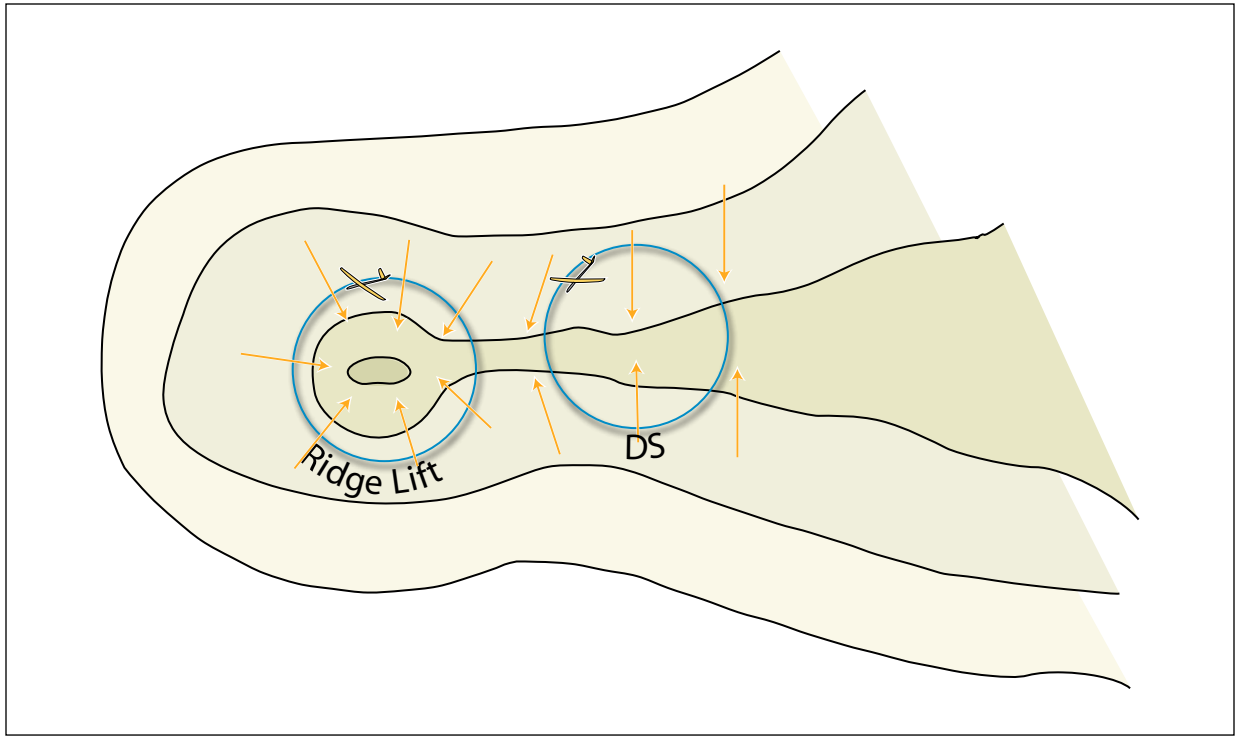
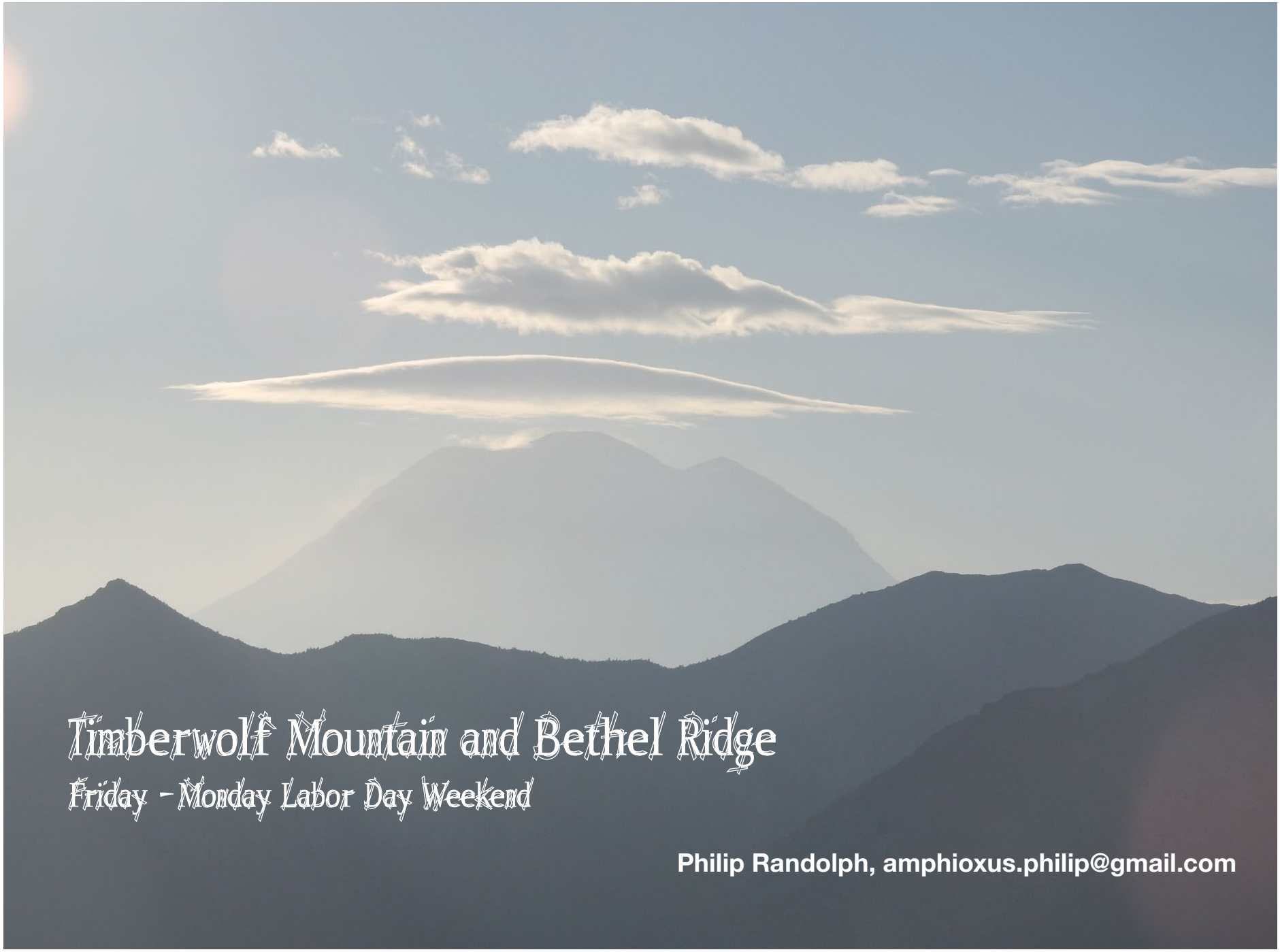


Figure 2: A rough contour map of Bethel Ridge, all surrounded by thermal producing talus fields, cliffs, and trees. DS requires a turn across airflows. So DS requires crossing the ridge and turning. Circling the rocky bump at the end of the ridge was a mix of slope lift and DS. Graphics by Alex Hart, September 2007.

Back to the present:

What I left out of that old article were speeds. The uplift was only a couple mph, again, not enough to float a herring. But punching back and forth got me higher speeds, maybe 5 to 20 mph, maybe more. Yeah, I'm sure someone can beat that record, for slow.

In the five times I've revisited Bethel Ridge those conditions didn't happen again. They didn't this time, with light winds from the north. I did find a little of the same sort of convergent uplift on the west end of Saddle Mountain, one time when we were all about to leave. So it's out there. Look for it.



Timberwolf Mountain and Bethel Ridge

Friday - Monday Labor Day Weekend

Philip Randolph, amphioxus.philip@gmail.com

Friday afternoon I drive south and east over Chinook Pass, with views of Mt. Rainier. I meet up with Chris Erikson, his twelve-year-old son Jacob, and his father, Erik, at Rattlesnake Creek. Weather: Clear and sunny all weekend.

Swimming into the current around rocks. Friday.

Timberwolf Mountain is a ridge that curves in front of Rattlesnake Creek, about twenty-nine miles east of Mt. Rainier. A few miles further downstream and four thousand feet lower are a few swimming holes. Two are upstream from a washed out bridge. But someone laid a couple 4x6s across the gap. So Chris and his twelve-year-old son Jacob and I get across. Erik has dogs, Sam and Sally. Sally won't walk the plank. So Erik E. takes the long way around, with a couple fords.

Now, starting a slope trip at a swimming hole makes perfect sense. Because I like to swim in the venturi around a rocky outcropping that speeds flows. In the spring high water deepens such pools, ripping anything loose off the bottom.

Chris dunks. Jacob swims, and follows me up to a second pool.

Title page: This is why we fly up here. Mt. Rainier with lenticular cloud from Timberwolf Ridge.
Telephoto by Chris Erikson.

Once before here the water was high enough so I could swim into the current until exhausted. But this has been a dry summer. The water is low. Deep enough to swim, but. Still, absolutely beautiful. There isn't anything like swimming into the current around a rock in a mountain stream. I swim until I am thoroughly chilled. I remain chilled for half the night. Worth it.

Camping Rattlesnake Creek. Philip compares redeposition of tungsten on halogen light bulb filaments to ice stability in lunar polar craters, but that's another story.

Chris' dad Erik is a retired geologist. So he has lots of good questions about cosmology and aerodynamics. And he brings up the recent story about surprisingly large quantities of ice in the lunar pole craters. It's great to have someone to ask questions. Chris and I blather. That halogen thing, I'll write a short paper on that. Not here. So everyone has a good time nerding out. Jacob plays video games before falling asleep in the back of Chris' Forerunner.

To Timberwolf and yellow jackets. The Leaning Tower of Pissoir. Super lift. Ivan specked out for hours.

We swim again, in night chilled 56°, and head up to Timberwolf, where we meet up with Chris' sweetheart, Michelle, her son Ethan, 15, and Ivan Somvi. Well, we won't see Ethan until later. He's down at the campsite attempting to avoid the yellow jackets while playing video games in Michelle's rig.

Philip swimming upstream in Rattlesnake Creek. The water is so cold it's hard to keep my head under. Jacob is supervising. Photo by Chris Erikson.

Yep, there are yellow jackets all over the place. We bat them away while we fly.

We'd know we were at 6391' if some idiots hadn't used the top third of the sign for kindling.

Ivan has been there a couple hours already, and has gotten long flights. But the lift has gotten light.

So we wait an hour, while Chris and I make a further minor repair to the Leaning Tower of Pissoir. Uh, that's the local outhouse. The one we installed a toilet seat in last October, with plywood to cover the 2' square hole on which one had to perch. It's tipped twenty degrees. We noticed last June that the local chipmunks had chewed the edge of the plywood. So I brought up metal edging. Next time it gets a new roof.

Chris puts up his 2.6m Phoenix Evo. "This is terrible. Don't launch." He's fibbing. I fly my old Encore 60" DLG. Ivan launches his Radian 2m rudder-elevator foamie. He lands four hours later.

Ivan has this low chair in which he can lay back. Every once in a while someone asks, "Are you awake?" "Yep." He's flying his Radian so far up we can barely see it.

Chris' Evo tears up the sky. I put up my fifteen-year-old Javelin. 60" foamy V-tail. I hadn't flown it for five years, not after the battery wires shorted out. It had a LiFePO4, so no fire. Redeuxded. Flies great.

Jake starts telling everyone it's time to head down for dinner. His dad says, "Not yet."

5:30, Erik and Cole show up. Disambigution: Not Chris' dad Erik, who we had better call Erik E., vs. Erik Utter, and 9-year-old Cole, sports fanatic.

6:15, and we're all trying to land. It is plain hard to get the things down. There is lift all over the place.

Erik U. starts flying his 34" Red Herring delta. "It's still my favorite plane." It zips around. Fast and agile. I hang out.

Before vandalism the top of the nearer sign read, "Timberwolf Mtn. Elev. 6391'." Ivan with Radian, way up. Philip & Javelin. Erik Erikson. Bethel ridge is 3.7 miles south in center of photo.

Saturday night

There is this about enjoyable kids. You put three in a bag and shake them and they multiply exponentially.

Erik U. manages to tell Cole that he has to talk instead of yell. It's a bit better when some random two of the three are playing chess, except when Jacob is the odd kid out. Then Jacob wants to stir up dust with an RC car, and he wants to do it right near folks who will yell at him. I tell him, "You get that near me again and I'm going to throw it over the cliff." He retorts, "Then you'll have to pay my dad two-hundred bucks for it," but retreats.

Left: Ivan climbs the tree from hell. He makes it half-way to Michelle's little plane.

Right: Chris after retrieving his son Jacob's Ranger from the bottom of a tree.

Sunday morning

"It looks like a Christmas Tree ornament." Ivan climbs the tree from hell.

Just a bit down the ridge there's a bit of meadow that drops off a knife edge to a steep slope on the backside of the ridge. It would be great in a good east wind. There is a light east wind. Perfect time for Chris to test fly Michelle's and Jacob's planes.

Chris flies Michelle's 25" Flyzone Calypso. Rudder-elevator with prop. He's setting it up for her. I wander over to where three guys are looking up.

Quote: "I'm used to bigger planes. I thought that plane was five times farther away."

It's about thirty feet up, near the top of a clump of what may be some kind of Hemlock. Plenty of branches, which usually makes for an easy climb. But. The branches slope down, at about thirty degrees from vertical. Ivan gets about twenty feet up and rescues the wing. In retrospect it's amazing he got that far.

I gain appreciation Monday when I try.

Chris flies Jacob's four-foot Ranger off the backside. It has a pusher prop behind a high wing. He doesn't put it in a tree. "It flies good."

Ivan's and Philip's gliders barely stay up.

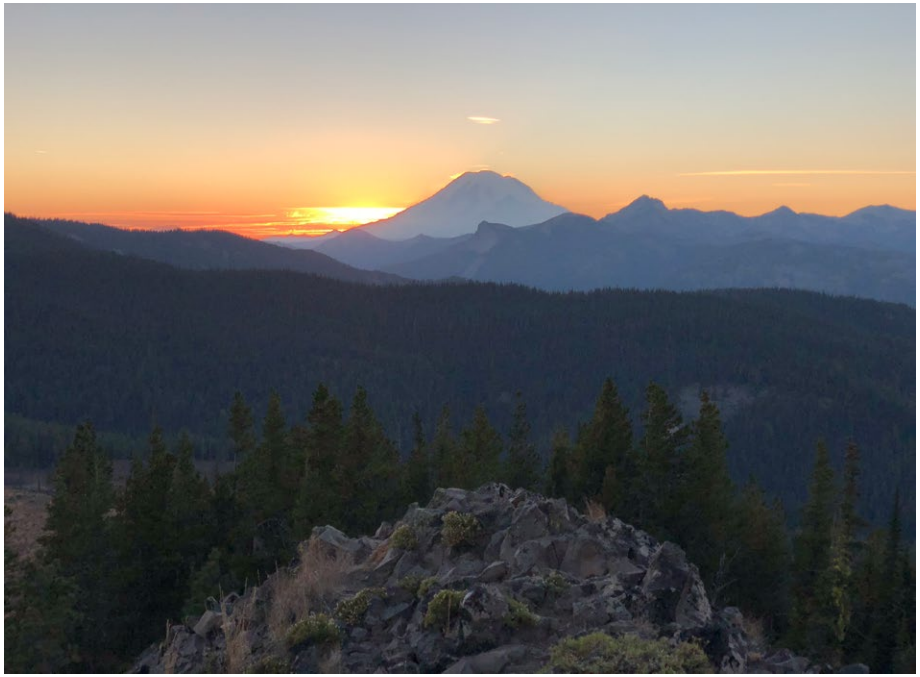
Philip, Erik, and Cole head for Bethel. Attempted recreation of my most blissful flying ever fails.

Bethel Ridge is a few miles south of Timberwolf. Most of the guys we fly with don't like it, so Erik U. and I haven't had success steering a trip there. It's always, "No, let's just go to Timberwolf. It's got the big lift."

Quote, Erik U: "I don't see how anyone could not be overwhelmed by the beauty of this place." Between Timberwolf and

Left: The light east wind mostly didn't keep up Ivan's Radian or Philip's old Encore. Photo by Chris Erikson

Right: Rainier from Bethel Ridge point. Photo by Erik Utter.



Mt. Rainier is 7,766' Mount Aix and a bunch of high ridges, so you see only the top quarter of Rainier. Bethel looks up the valley, so you see the top two-thirds. Plus Adams and the Goat Rocks. Erik: "This is my favorite campsite." So that's the first reason we've wanted to get back there.

Well, I did get back to it another summer in 2006, a couple Octobers, and on one fall trip when it was cloudy, no views, cold, and with unflyable sheer from the east.

But the second reason I want to go to Bethel is it's where I had my most blissful flying experience ever. I want to recreate

Philip's Encore. Timberwolf Ridge is to the far right, north. The high point is Mt. Aix. Photo by Erik Utter.

Philip launches Encore from Bethel. Photo by Erik Utter.

Erik Flying his Herring with Mt. Rainier in the background.

that. It didn't work. See the previous article.

This time the flying is marginal. But so scenic it's worth it.

Evening conversation with Cole goes like this: "If your bag is wet, you'll get warmer as it dries. So to get you warmer we should pour water on your bag." Cole doesn't buy it.

Four planets are visible. Venus and Jupiter in the East, Mars bright in the south, Saturn high above Mars. Milky way and satellites.

Monday morning

Cole finds a couple big crickets. They head back to Seattle.

Winding down

I head for Timberwolf, 3.7 miles distant, 8.2 by road. Chris and Jacob are packing up. All else are gone. Ivan left Saturday afternoon. Chris says, "I can fly alone any time." Bother. He says, "The lift was huge."

I make my attempt up the tree for Michelle's Calypso.

I get about fifteen feet up and can't find anything to rest my right foot on. My feet slip off a couple times. I start down. The branches are so steep it's more like holding onto a climbing rope than brachiating. By the time I'm about five feet from the ground my hands are giving up and I can't find a branch to shift my right hand to. It gives up. I fall on my butt.

Left: Cole with rare passenger cricket on the Javelin.

Right: Either local wildlife or Chris Erikson's spirit guide. Photo (spiritual selfie?) by Chris Erikson.

Tree hugger. I didn't get as far up as Ivan. I used to weigh less. And was younger. Calypso remains a Chris' tmas tree ornament. Photo by Chris Erikson.

No damage. But I'm impressed Ivan got as far as he did. Still, he's a young guy, in his fifties. Well, I'm only 69. My hands cramp for the next half hour.

Chris, Jake, and I head down to Rattlesnake Creek. We try out a third swimming hole. Chris jumps right in, stays in long enough to do a Pantene shampoo commercial. Jake cannonballs off a rock. I get him to push me off. I swim until I'm chilled.

Video

Giant Scale Eta

<https://www.youtube.com/watch?v=hWHxWbe58Qg>

Here are some stills from a video showing a 1:2 scale Eta. The model has a span of 15,45m/50.5'+, a length of 4,89m/16', and weighs 40kg/88 lbs. An retractable electric motor can be used as a sustainer. The pilot is Gernot Bruckmann.

The tow plane is a Swiss Trainer with a wingspan of 3,5m.

The Eta appeared at the 24th 2018 JETI model meeting at the RC model airport at Czech Heaven, Czech Republic.

Thanks to Pavel Šíma for the YouTube link!

Hobby Club A20CHS, A26CHR, 1.7g Micro and C1.5CLS servos

Bill and Bunny Kuhlman, bsquared@rcsoaringdigest.com

Hobby Club owner Alberto Dona was kind enough to forward several servos for us to review within the pages of *RCSD*:

- A20CHS, a servo with standard mounting tabs, configured for use in the fuselage to drive either elevator or rudder.
- A26CHR, a thin wing servo with three tabs oriented for surface mounting.
- 1.7 gram micro servo with standard mounting tabs, designed for lightweight aircraft.
- C1.5CLS, an ultra micro servo for very light weight (indoor) aircraft and surface mount.

All of these servos are made by Hobby Club Models.
<http://www.hobbyclub.com>

We'll review each of these in turn, providing the information provided on the data sheets and then describing in detail the results of our bench testing.

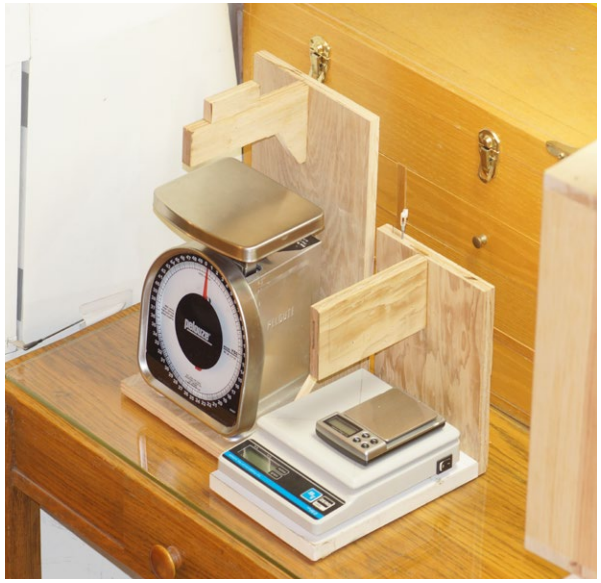
NOTE: Our previous experience with testing servos has consistently shown that the torque indicated on the data sheet is greater than what we measure using our equipment.

Test equipment

Scales:
- (No manufacturer) jeweler scale
  Recommended by several F1D flyers
  200g x 0.01g / 17.6oz x 0.01oz
- Pelouze PE-5
  2200g x 2g / 5lb x 0.1oz
- Pelouze Y50
  50lb x 2oz

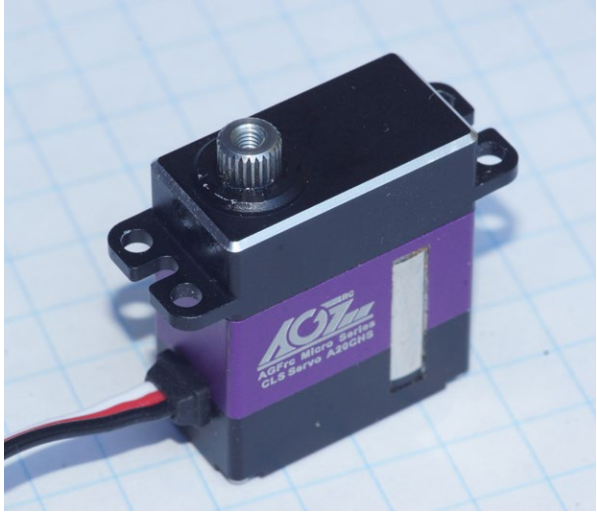
Power supply:
- Seikosha (Japan) Power Pack #LT-2004AC, input 120V 60Hz 0.3A, output 12VDC 1.3A

Servo testing unit:
- G.T. Power Professional Servo Tester
  Output is consistent 4.8V
  Modes used -
  - LN = linearity; output 1000µsec. - 2000µsec., adjustable @ 1µsec. increments
  - FP = centering; output 1000µsec., 1500µsec. and 2000µsec., selectable
  - DB = deadband; adjustable output from 0 to 30µsec.
  - SP = speed test; automatic measurement to 0.001 sec.



Scales and test fixtures

G.T.Power Professional Servo Tester <https://www.motionrc.com/products/gt-power-professional-digital-servo-tester>



A20CHS exterior

A20CHS all metal gear train

<http://www.hobbyclub.com/index.php?main_page=product_info&cPath=24_43_128&products_id=1776>/<https://tinyurl.com/y8jzunho>

US$29.95

HCS A20CHS

The A20CHS is a standard configuration servo for mounting within a servo frame, making it ideal for use within a fuselage to drive either the elevator or rudder. Dimensions are 23mm x 12mm x 27.5mm. All gears are metal. The data sheet for this servo states the operating Voltage to be 6.0V to 8.4V. The stall torque is stated as 5.5kg·cm (76.4oz·in) with an operating speed of 0.11sec/60° at 6.0V, and stall torque of 6.8kg·cm (94.5oz·in) with an operating speed of 0.09sec/60° at 7.4V. These are impressive numbers for a servo of this size (23mm x 12mm x 27.5mm).

The A20CHS CLS motor is cylindrical and, because the surface of the motor is flush with the exterior of the metal housing, the case thickness is exactly the same measurement, just 12mm or slightly less than a half inch. Even with the metal case, the weight of this servo is just 20g. The connector wire uses a JR plug and is 180mm long.

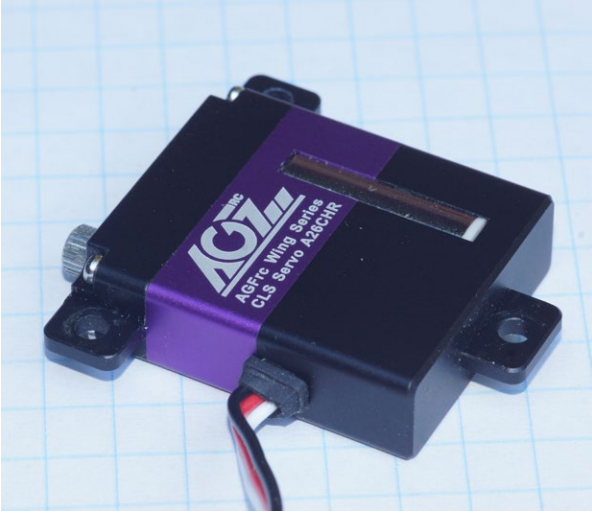
Our testing equipment uses the standard 4.8V output for servo testing, so the output torque was extrapolated using 0.92Kg·cm / V to estimate 4.4Kg·cm (70.4oz·in) at 4.8V.

The servo arm we used has a 0.75" arm length, so we expected the actual force to be 1.5 times the oz·in data sheet measurement, 105 ounces. We used the Pelouze Y50 for this measurement and consistently read 96 ounces, substantially less than predicted. However, it should be kept in mind that this is still a large value and the power being supplied to the servo is 4.8V rather than the minimum 6.0V called for in the data sheet. Additionally, as stated previously, we find our force measurements to nearly always be less than the data sheet values.

The time to rotate through 60 degrees varied between 0.073 and 0.079 sec. with no load. This is substantially faster than the data sheet indicates, despite running on the lower 4.8V.

The deadband was ~5µsec. which is quite good as it provides at least 200 “steps” between the 1000µsec. and 2000µsec. signal limits. A 10” length of 1/16” music wire was attached to the servo arm and the servo tester FP function was used to determine errors in returning to neutral after excursions to both swing limits. There was never a discernible difference in the location of the wire end during ten trials.

The A20CHS is supplied with a servo arm retention screw, four servo arms, and mounting screws. Our only concern is that the servo arms supplied do not seem to be as substantial as we would expect with a servo of this power. The holes in the arms are too small for standard nylon and metal clevices. During our testing we substituted a sturdier arm with holes sized appropriate for the nylon clevis we used.



A26CHR exterior

A20CHR all metal gear train

<http://www.hobbyclub.com/index.php?main_page=product_info&cPath=24_43_128&products_id=1777>/<https://tinyurl.com/y959w8eu>

US$34.95

HCS A26CHR

The A26CHR is a thin (10mm / 0.39") servo for surface mounting within a wing, making it ideal for driving ailerons and flaps. Dimensions are 30mm x 10mm x 35.5mm. All gears are metal. The data sheet for this servo states the operating Voltage to be 6.0V to 8.4V. The stall torque is stated as 8.2kg·cm (115oz·in) with an operating speed of 0.15sec/60° at 6.0V, and stall torque of 10kg·cm (140oz·in) with an operating speed of 0.09sec/60° at 7.4V. This servo is 30mm x 10mm x 35.5mm in size.

The A26CHR CLS motor is cylindrical and, because the surface of the motor is flush with the exterior of the metal housing, the case thickness is exactly the same measurement, as stated above just 10mm or slightly less 4/10 inch. Even with the metal case, the weight of this servo is just 26g. The connector wire uses a JR plug and is 180mm long.

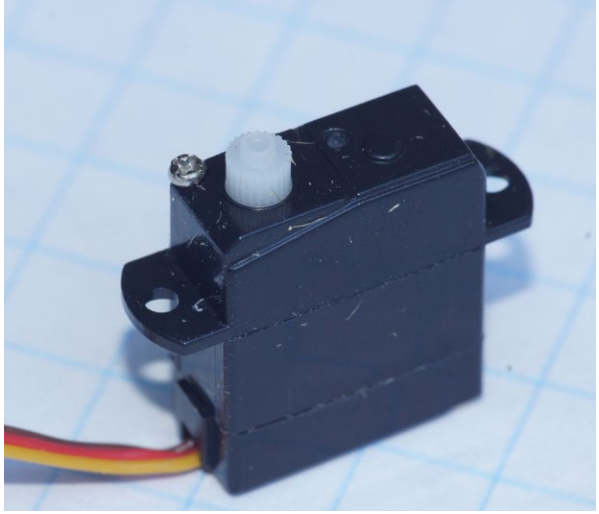
Our testing equipment uses the standard 4.8V output for servo testing, so the output torque was extrapolated using 1.37Kg·cm / V to estimate 6.5Kg·cm (91oz·in) at 4.8V.

The servo arm we used has a 0.75" arm length, so we expected the actual force to be 1.5 times the oz·in data sheet measurement, 136 ounces. We used the Pelouze Y50 for this measurement and consistently read 128 ounces, substantially less than predicted. However, it should be kept in mind that this is still a large value and the power being supplied to the servo is 4.8V rather than the minimum 6.0V called for in the data sheet. Additionally, as stated previously, we find our force measurements to nearly always be less than the data sheet values.

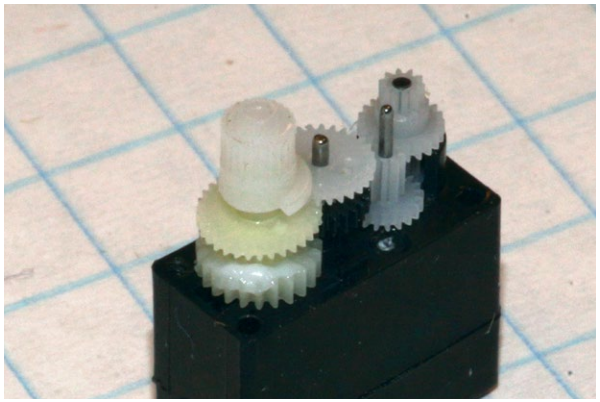
The time to rotate through 60 degrees varied between 0.122 and 0.128 sec. with no load. This is substantially faster than the data sheet indicates, despite running on the lower 4.8V.

The deadband was ~5μsec. which is quite good as it provides at least 200 “steps” between the 1000μsec. and 2000μsec. signal limits. A 10" length of 1/16" music wire was attached to the servo arm and the servo tester FP function was used to determine errors in returning to neutral after excursions to both swing limits. There was never a discernible difference in the location of the wire end during ten trials.

The A26CHR is supplied with a servo arm retention screw, four servo arms, and mounting screws. As with the A20CHS, our only concern is that the servo arms supplied do not seem to be as substantial as we would expect with a servo of this power. The holes in the arms are too small for standard nylon and metal clevices. During our testing we substituted a sturdier arm with holes sized appropriate for the nylon clevis we used.



1.7g Micro Servo



1.7g Micro Servo gear train

Inquire <http://www.hobbyclub.com>

US$12.95

HCS 1.7g Micro Servo

Alberto sent us a sample of this servo which arrived in a small clear plastic bag without a data sheet. An included flyer showing other Hobby Club items had a photo of the servo but there was no further information. This servo is new and is not yet listed on the Hobby Club web site. Thus all of the information noted in this review comes from our examination and testing of the item.

This is a very small servo, 13.4mm x 6.2mm x 16mm. As stated in the name, this servo weighs just 1.7g. The case and all gears are plastic. There are two mounting tabs, each with a single hole for attachment to a frame. The servo comes with a servo arm set screw, four servo arms, and mounting screws.

Internally, this servo is necessarily a tight fitting unit. The motor length is under one centimeter and the electronics are nearly invisible. Two screws hold the case together, the longer screw is inserted into the bottom of the case.

This servo is so quiet that determining the deadband was difficult. It appears the value is surprisingly low for a servo of this size, between 3μsec. and 5μsec.

The servo arm used in our testing placed the pushrod 0.75cm from the center of the output shaft, so the values we obtained for thrust are 1.5 times the usual g·cm standard. Over ten trials, the thrust averaged 135 grams at 4.8V, so a data sheet should indicate a stall torque of around 90g·cm or about 6.4oz·in.

Unfortunately, we were unable to determine the 60 degree swing speed using our testing equipment.

This servo is very quiet in operation, due no doubt to the very small size of the components and the use of plastic gears throughout.

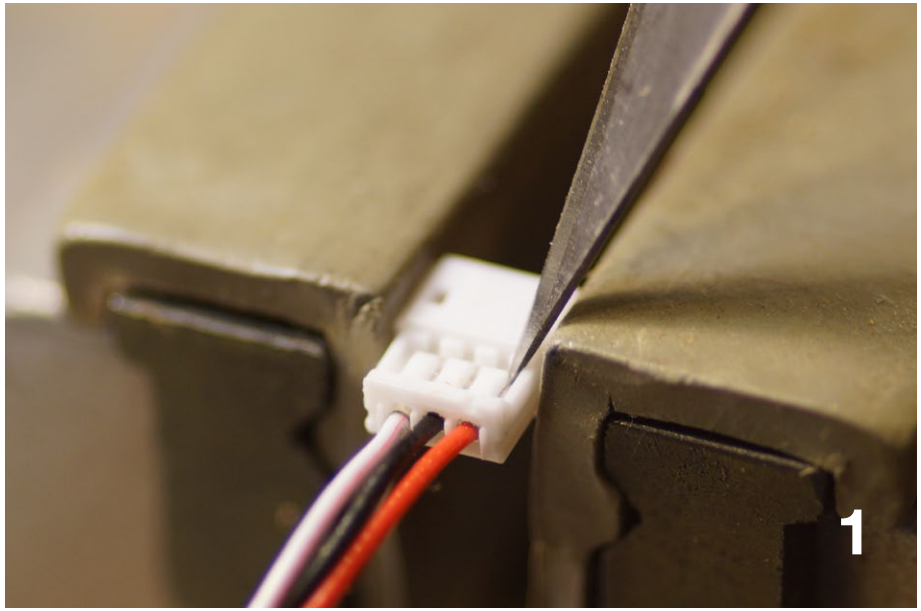
This servo has a 110mm cable and uses a 1.25mm pitch connector.

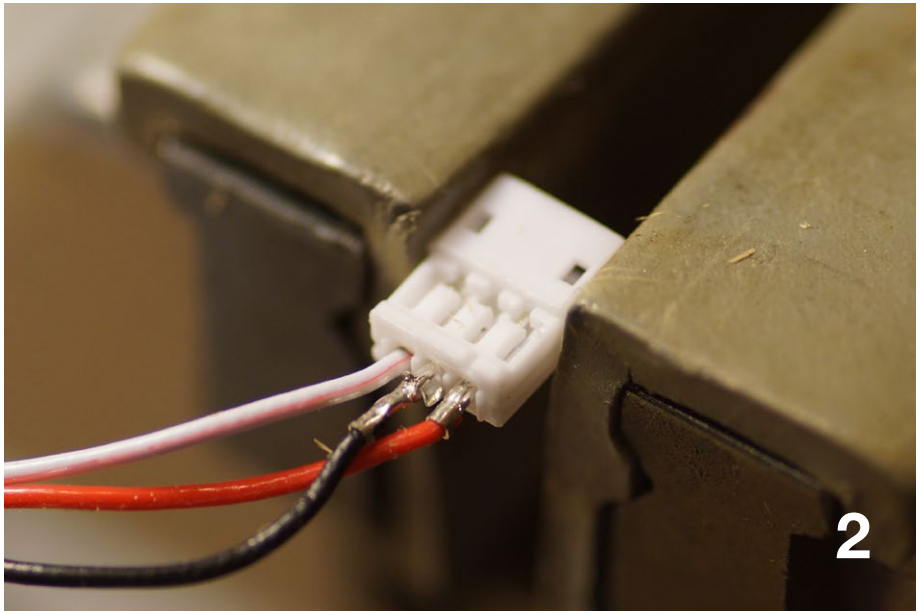
One thing to keep in mind is that this wiring may not be a good fit for the receiver you're using. Our own Lemon receiver, a micro light DSM2 compatible 6-channel, for example, is configured to use connectors with a 1.0mm pitch. The solution to this problem is to purchase a set of adapters from Hobby Club. These are very inexpensive and come as a set of two 100mm adapters (1.25 to 1.0mm and a 1.0mm to 1.0mm extension cable).

The adapter wiring configuration is likely to be different than expected. It is imperative that the wiring be arranged so that the negative, positive and signal lines are connected to the appropriate receiver terminals.

Despite the incredibly small size of these connectors and the wires involved, switching the wires to where they belong is a simple albeit tedious process.

Take a look at the next page for basic instructions on how to do this.





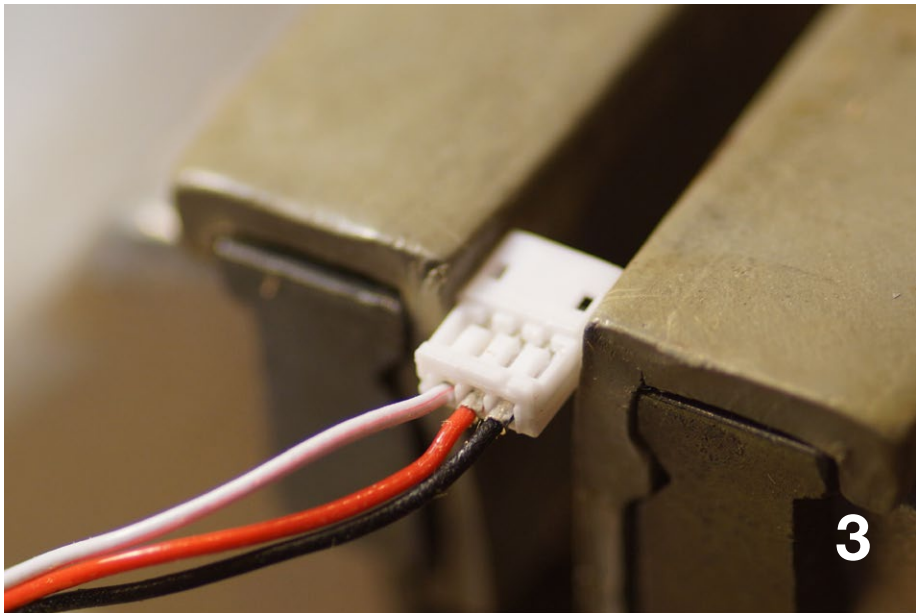
Reconfiguring connector wiring

You will need to examine the receiver receptacles, the receiver instructions and/or a properly working servo to determine which pins are signal, positive and ground. Once assured of the proper sequence, you may find you need to reconfigure the servo wiring plug to match. Here's how perform that configuration.

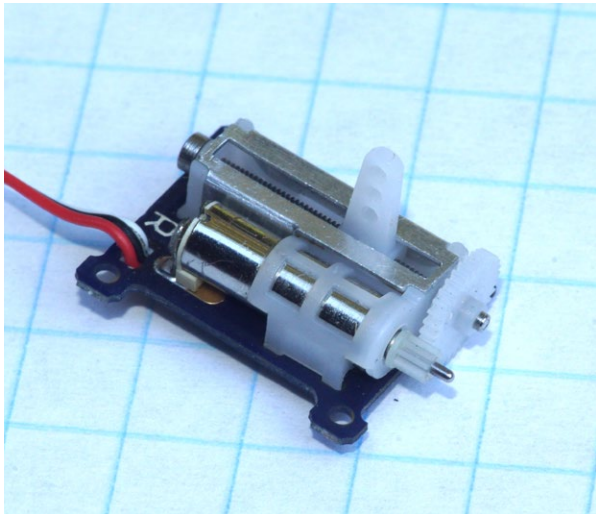
Step 1. Place the connector in a small vise with padded jaws. Using a #11 X-Acto or similar blade, insert the point end into the connector and while gently pulling on the connected wire, pry up the fixing pin until the wire is released and slides out.

Step 2. The wires should now be loose from the connector as shown in the photo. If you look closely, you'll see the lower portion of the pins have a small tab. The pin must be reinserted so the tab remains down.

Step 3. Pull the wires out completely and reinsert them in the appropriate holes. Make sure they go all the way in and are held in place with those tabs you previously lifted with the X-Acto blade. This can be done with a blunt corner of the #11 blade.



The photos show a 1.25mm pitch connector. You can do the same with a 1.0mm connector, it's just a more delicate job. An OptiVisor or similar magnifier makes it a lot easier.



C1.5CLS (on 1/4" graph paper)

<http://www.hobbyclub.com/index.php?main_page=product_info&cPath=24_43_128&products_id=1754>/<https://tinyurl.com/ycprmxto>

US$7.95

HCS C1.5CLS

The C1.5CLS is an extremely lightweight servo with simple plastic gears — a pinion gear driving a single large gear connected directly to a worm drive. This provides roughly 0.6cm of linear travel, about 0.3cm both sides of neutral. The base is 21.4mm x 15.2mm and the servo (without arm) is 6.0mm thick. This servo weighs 1.5g and is rated for 3.7 to 6.0V. The C1.5CLS is available in right (shown) or left drive configurations. There is also a C1.5CHS which has a Voltage range of 6.0V to 8.4V and is stated to have more power.

The control arm has three holes and is an integral part of this servo, so there is no option for a different arm configuration. The servo is delivered in a simple sealed plastic bag with a data sheet sticker. Mounting screws are not included.

According to the data sheet, this servo is rated at 160g·cm. This is odd as the drive is completely linear and thus there is no arm rotation to provide a torque value. The force value we obtained using our jeweler scale was 90g or 3.9 oz.

As with the 1.7g Micro Servo, we were unable to obtain a speed for the linear movement equivalent (in µsec.) to a 60 degree swing. The deadband was a relatively wide 8µsec.

On the topic of mounting screws, the mounting holes are of very small diameter and the screws you'll need may be hard to find. A double-sided foam tape mounting method therefore seemed to us to be ideal, but the bottom surface of the circuit board is not flat - it has components which protrude - and it's difficult to obtain sufficient purchase for a firm attachment. Additionally, we found the foam for some reason hindered free operation and the motor quickly became very warm. We found the best mounting method to be with the use of two balsa rails along the long edges of the board. These rails must be placed so their inner edge closely matches the outer edge of the board as otherwise electronic components will be pressed by the rail. An equivalent rectangular frame could also be quickly constructed.

This servo is a specialty item and is designed for very light loads as would be found in indoor aircraft built with sheet foam or stick and tissue. If heavier loads are anticipated we very highly recommend the 1.7g Micro Servo as it puts out at least 1.5x the thrust using the outermost hole (0.75cm) of one of the included servo arms.

The connector is of the 1.25mm pitch type; an adapter and a change to the servo and/or adapter wiring may be needed to connect the servo to the receiver. Take a look at the previous page for basic instructions on how to do this.

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Larissa F5J MEETING

PRESENTATION

1

F5J Meeting is a celebration of the aviation spirit that started from Thessaly and the city of Larissa. It begun with initiative between friends and members of different clubs with the aim of highlighting the aeromodelling culture and at the same time the promotion of the region as a tourist destination

The purpose of the event is the exchange ideas, creation of relationships and links with other pilots having the opportunity to compete with the top glider pilots of F5J. The meeting is organized for second year and pilots have been invited for all over the world as well as from Greece too and will be hosted for 4 days, (4th to 7th October) in the city of Larissa .

During their stay, through a series of events at Terpsithea's airport and trips to areas of beauty and history of Thessalian region, they will be initiated into the aeromodelling and airsport's culture of Thessaly as well as to the culture of hospitality

2

Larissa F5J MEETING

Larissa F5JMeeting also reveals all the points of Larissa and Thessaly in general, which are considered to the worth visiting

3

Larissa F5J MEETING

The Guests

Larissa F5J Meeting has hosted some of the best glider pilots with distinctions at European and world level

For this year's event which aspires to be recognized as International statute, have been invited top pilots from Italy, Germany, Slovenia, Croatia, Bulgaria, Czech Republic, Romania, Ukraine, USA, Greece and finally a gliders legend *Joe Wurtz* from New Zealand

4

Larissa F5J MEETING

Program's Structure

During at F5J Meeting from 4th to 7th October 2018 the guest's and his partner (wife's or couples) from all countries will be touring in Larissa and selected places of Thessaly's Region

They will be practice and compete at Terphithea's airport with it's demanding fly field area.

Greek's and visiting guests will deliver seminar's to improve their abilities

5


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