

September, 2004
Volume XVII, issue 9



PEAK CHARGE

Dedicated to the promotion of electric propulsion
in all types of aeromodeling



F5B and F5D World Championships 2004
August 6 - 15, The Knavesmire, York, UK

SEFSD Calendar

Pylon Racing	F5B Contest	Next Meeting	Electrogilde
2nd Saturday 11:00 AM September 11	3rd Sunday 9:00 AM September 19	Aerospace Museum Balboa Park 4th Tuesday 7:00 PM, Sept. 28	Saturday following Meeting 9:00 AM October 2

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Mission Statement

The objective of the Silent Electric Flyers of San Diego is to promote and further the technology of electric powered R/C aeromodeling; encourage competition in Electric Soaring, Pylon Racing, FAI-F5B/D, Scale, Old Timer, and Pattern Electric categories by hosting major Industry-sponsored events and sanctioning "Fun-Fly" types of contests; provide forums for the exchange of technical information, instruction and experience; and participate in demonstrations of electric propulsion in area-wide model aviation events.

AMA Charter Club 3078

web site: <http://sefsd.org/>



September is a great month, especially with less traffic to and from the field! I hope everyone is having a wonderful summer and are looking forward to lots of building and flying this fall. The "show and tell" at the last meeting consisted of only one airplane so finish up your latest creation and let us see it.

The F5B Electric glider team (all club members) survived the rain in York England with varying degrees of success. Hopefully someone will write an article expounding on the many crazy events that happened to the team. I told some stories at the club meeting in August but then realized I forgot some good parts and other story tellers will have a different perspective so I look forward to reading their accounts!

September is the month that the MWE committee is planning to really get the MWE rolling since a few deadlines have been set for the end of the month. So far a very capable group of people has agreed to help with MWE 2005 but there are a few leadership positions that will need to be filled by December so let me know if you are interested. Also, feel



Flying Field GPS Coordinates
Latitude 32.7625480 Longitude 1721415
Zip Code 92109

Aerospace Museum
Monthly Meeting site



AIRPLANES VS WOMEN

David Snyder

- Airplanes can kill you quickly; a woman takes her time.
- Airplanes can be turned on by a flick of a switch.
- Airplanes don't get mad if you 'touch and go.'
- Airplanes don't object to a preflight inspection.
- Airplanes operate inverted.
- Airplanes come with manuals to explain their operation.
- Airplanes have strict weight and balance limits.
- Airplanes can be flown any time of the month.
- Airplanes don't come with in-laws.
- Airplanes don't care about how many other airplanes you have flown before.
- Airplanes and pilots both arrive at the same time.
- Airplanes don't complain if you hose them down.
- Airplanes don't mind if you like to look at other airplanes.
- Airplanes can get high without throwing up.
- Airplanes expect to be tied down.
- Airplanes don't comment on your piloting skills.
- Airplanes don't whine unless something is really wrong.
- When airplanes go quiet, just like a woman, it's a bad thing.

More Member Classifieds

Limited to 100 words or 10 lines of 12 point type, INCLUDING SUBJECT, NAME AND ADDRESS, PHONE NUMBER AND/OR E-MAIL ADDRESS.

Copy must be received by the 2nd weekend of the month for inclusion. The advertisement will be repeated in three consecutive issues, unless the Editor is informed otherwise.

Fliton "Flubber" \$100

3D / FunFly model
Span: 35"
Area: 300sq"
Colors are red and white, with silver and black accent decals.
Includes 4 Cirrus CS-09 servos.
Model has been assembled and flown (never crashed) and is RTF.
Motor, gearbox, ESC, receiver and battery not included.
Call David Fee (760) 583-1926 or davidfee@cox.net





B52

The tragic ending of a magnificent model airplane



free to come to the planning meetings since having a lot of people volunteer to do one or two simple tasks each goes a long way toward reducing the workload for all.

Thanks for following the few rules we have and for being great members.

Happy flying,
David

Toss it!

By Bruce Cronkhite

I am a lousy airplane thrower. Many of you who are at the field a lot know this already. This is a sneaky way into subject of this article, which is hand launching models. Regardless of what “they” say, the takeoff (or launch) of a model is the most critical part of the flight, not the landing. The reason for this is that in the landing maneuver the model is already flying, and satisfying all of the requirements for successful flight. At launch the model must transition from a non-flying condition to the flying state, with all that entails. During a takeoff from the ground the model has an opportunity to make this transition gradually, gaining flying speed and surface control during the takeoff roll, until such time as the model is really ready to fly. In a hand launch all of the requirements for flight must be satisfied very quickly, before the model falls to the ground. In order to fly, the model must acquire enough speed in the throw for the wing to generate the lift necessary to overcome gravity. The speed necessary is not constant, but is dependent on the type of model. If the wing loading is light, such as in a glider, that speed is lower than for a pylon racer. So the launch should be such that the model can attain that speed by its thrust to add to the speed you give it with your arm.

Without the required airspeed the airplane will not generate enough lift to climb, regardless of how you point the nose up. Unless the model has enough power to pull itself up, pointing the nose up will do just the opposite of what you want. With the nose up, and the wing at a high angle of attack, the induced drag of the wing will be more than the thrust

can overcome, and the model will likely slow down and stall (and crash). The best thing you can do is to throw your model in the way that it can most easily gain that flying airspeed: level, straight out. Not up into a stall, and not down into the ground (as I do sometimes). Always throw exactly into the wind if there is some. That wind is a free increase in airspeed. My little Flattie requires a lot of launch airspeed. I wish I had a Caminiti arm, but most of us don't. So I throw the Flattie into the ground occasionally trying to get that speed. You don't have time to control your way out of a bad launch if you throw it yourself;. Unless you know that you can throw your model safely, get someone else to throw it for you, or build a model that doesn't require that gun-arm. (I should listen to my own advice, but it is not manly to admit that you don't have a good “arm”.) With someone else throwing you keep your fingers on the sticks so that you can recover from whatever the stupid model tries to do. And whatever you do, don't throw the model “up” unless you know that the model will continue to go “up” on its own. One other thing. For a model to gain the required airspeed it must accelerate above the throwing speed, which takes a little time. Sometimes throwing the model slightly up will give you that time. When you have a “thrower” to launch your model, he can do that while you have your thumb firmly on the stick to correct any launch problem. Another possibility is to have a little “up” trim in the elevator at launch. This is particularly useful for aerobatic models that are normally trimmed to fly level at full throttle. You have to remember to take that trim out, later. My

transmitter (JR8103) has a neat gimmick that puts in a fixed amount of elevator trim at the throw of a switch. I use this feature at launch for the Flattie and the Bare Bones. If you're throwing a glider this up-trim is probably already in it to make it glide well, and will cause the nose to go up under power. But whatever you do, it is best to have someone else (a known good thrower) throw your airplane the first

few , or until you know its flight characteristics. While I have actually done a "bounce-and-go" on launch with the Bare Bones, trying to throw myself, and recovered, the prop tips sure do get dirty. And then there are those Gorilla-arms who don't need to worry about any of this who can throw a pylon racer with one hand while holding a transmitter in the other, with no run-up.

SEFSD Book, Video and DVD List

As of August 1, 2004

Book Title

Electric Motor Handbook
 Entering Electrics
 Foam Wings
 The Quiet Revolution
 RC Airplane Finishing & Detailing
 RCAirplane Building Techniques
 RC Airplane Workshop Secrets
 Also Available: Some back issues of S&E Modeler Magazine

Video Title

1994 KRC Electric Fly
 1996 KRC Electric Fly
 1997 KRC Electric Fly
 1996 London Bridge Seaplane Classic
 1996 NATS Highlights
 2000 San Diego Midwinter Electrics
 Advanced Kit Conversions
 Airborne R/C Video (Fred Harris)
 Airplane (Joe Wurts)
 Airforce Top Gun
 A Celebration of Eagles
 Basic Construction for Beginners
 Building with Foam
 Byron Originals show season 1985

Desert Storm/ Tornado
 Double Eagle
 Electric Jet Factory
 Electric Flight (Building & Flying)
 Electric Flight & Schneider Cup
 Electrifying the FANTASY (Vol. III)
 F-16 Falcon
 Float Flying – John Sullivan
 Gas to Electric Conversions
 Learn How to Build a Power Airplane
 Let's Get Serious About Electric Flight
 Mini-Max Power Gliders
 Monokote I
 Monokote A
 Neat 2001+
 Power for Performance Electric Flight
 Schneider Sport Electric
 T-Birds
 U.S. Air Core Basic Building Tips
 Vacuum Bagging tips
 Warbirds over Schenectady
 Wring it Out (Vol. 1)
 Wring it Out (Vol. 2)
 Mid-Winter Electrics 2002
 Mid-America Electric Fly In, July

2001
 Six Minutes of Pure Fun
 NEAT Fair 2002
 Triad E Fly
 Joe Nall 2002
 Diablotin, Ferat-MORE
 Hacker Brushless Motors

Pro Aero Tow
 Secrets of Thermals
 Endless Lift III
 Just Want to Fly
 Airshow 2 (2001 MWE)
 Composite Molding and Vacuum Bagging Construction Techniques.



Bill Booth



Carl Jackson



Peter Soutowood



Bob White



The August Meeting

The troops came straggling back from the "battle of York", otherwise known as the F5B and F5D World Championships 2004, at The Knavesmire, York, UK , one by one, exhausted, and perhaps disappointed that their results didn't quite match up to their expectations.

President Pitcairn arrived at the meeting just in time to fill us in on all the nitty gritty going on at the big show. Steve Neu was also in attendance but had very little to say. I am promised a full report by F5B Team Captain Chuck Grim in time for the October issue of Peak Charge.



There was no business meeting as such and no raffle, but one interesting model was on display for show and tell.

The meeting was adjourned at about 9:00 PM.

Bill Fee



Back to the Drawing Board



Bird Bait

Penny-weight model has 3 control channels

MICHAEL A. DORNHEIM/LOS ANGELES

A recently built scale model shows how small a viable remotely controlled aircraft can be.

Matthew T. Keennon, program manager for micro air vehicles at AeroVironment, made a 4.4-in.-wingspan 1/72-scale model of a Royal Aircraft Factory SE5 biplane weighing only 2.5 gm. (0.088 oz.)—about the size of a hummingbird and the weight of a penny. It has proportional rudder, elevator and throttle control.

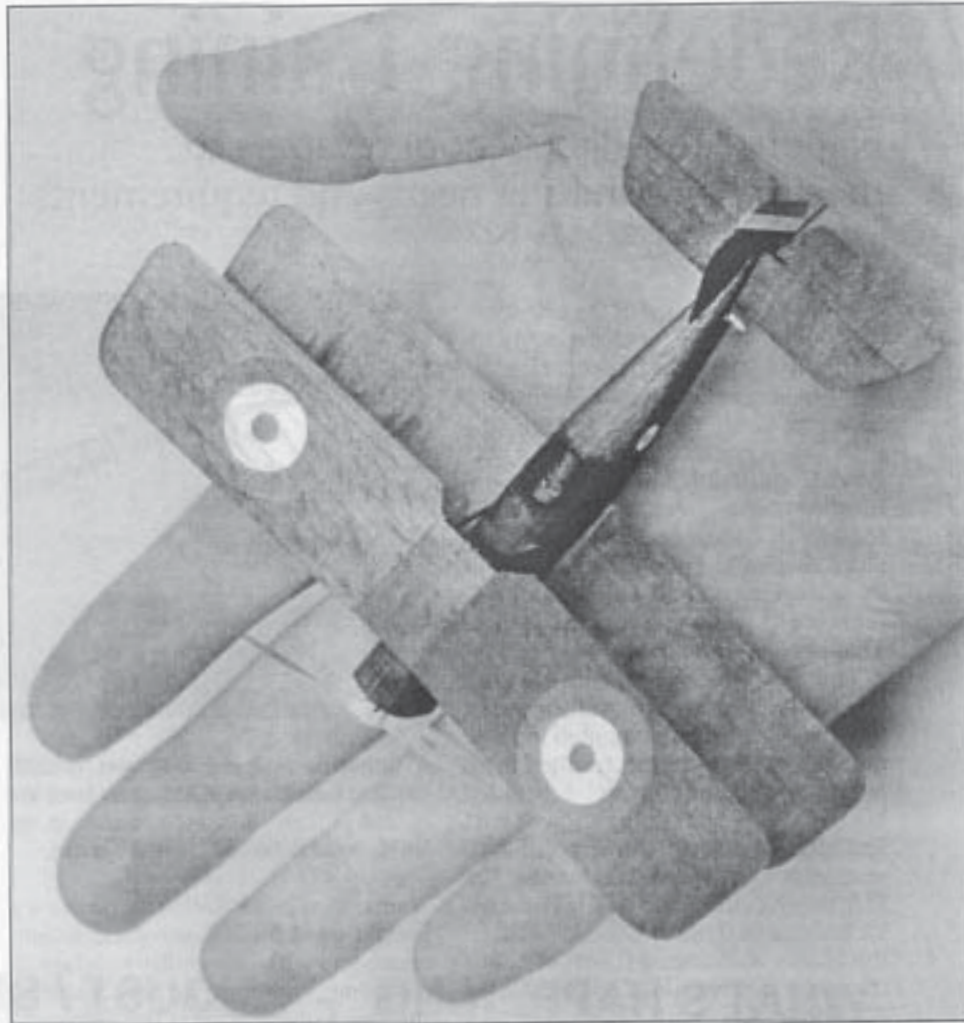
Key technologies making it possible are a novel homemade actuator powered by shape memory alloy wire, and a tiny high-performance battery. The aircraft has flown 4 min. at a time and should be able to go 10-15 min. on a charge.

Wing loading is about 2 oz. per sq. ft. and the 12-mph. flight speed gives a lift coefficient of 0.34. The wings are a single sheet of 0.015-in. balsa wood steamed to an undercamber with a root rib holding the curvature. "It has a very thin leading edge, not too different from a butterfly or dragonfly wing," Keennon said.

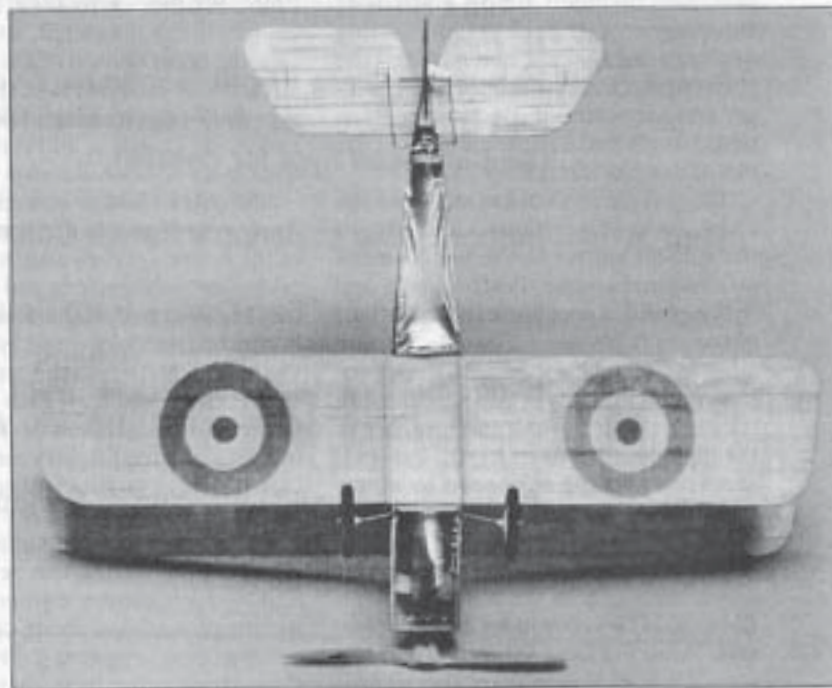
"Birds chase it constantly, but I can turn much sharper and they zing on by." It can take off from the floor and do loops, and is stable enough to fly hands-off in gusts. There is no stability augmentation.

The 4 X 8-mm. (0.16 X 0.31-in.) electric propeller motor comes from a pager vibrator and is geared down 1:3.5 to drive the 1.6-in.-dia. numerically machined maple prop. Current consumption is about 110 milliamps from the 3.2-volt 20-milliamps-hr. lithium polymer battery weighing 0.7 gm. "The battery wasn't doable five years ago."

The combined elevator and rudder actuator is more than ten times lighter than an equivalent electromagnetic coil actuator, and half the weight of the tiniest coils that have much less strength. It is powered by shape memory alloy wires that shorten about 5% when heated above 150F. Keennon credited modeler Bob Bailey with solving several problems dealing with the "muscle wire."



"Muscle wire" actuator and tiny battery are key to small size, which is near limit of inflight visibility. A similar actuator weighs 0.12 gm. and has 2 gm.-cm. of torque with roughly 2-Hz. response. Motor, gearbox and prop weigh only 0.6 gm.



F5B World Championships York 2004



Final Team Results

Position	Country		Scores	Total
1	Germany	3 Fickenscher W	4000.00	11799.52
		18 Rueb G	3975.56	
		33 Kugler H	3823.96	
2	Switzerland	1 Bossard P	3786.18	11599.08
		31 Moeckli M	3975.55	
		16 Cantoni M	3837.35	
3	Italy	22 Cavaggioni P	3771.98	11564.11
		37 Frattini R	3925.73	
		7 Mossa A	3866.40	
4	Austria	44 Freudenthaler R	3901.41	11428.57
		30 Starzinger J	3713.06	
		15 Safarik D	3814.10	
5	USA	38 Neu S	3839.41	11414.68
		8 Pitcairn D	3705.25	
		23 Keesaman J	3870.02	
6	Great Britain	35 Dixon D	3810.81	11206.78
		20 Seale M	3729.06	
		5 Shering G	3666.91	
7	Denmark	42 Bech P	3663.24	11131.68
		13 Hansen H	3598.11	
		28 Tonnesen C	3870.33	
8	Sweden	36 Sjoberg B	3739.18	11121.86
		6 Johannson B	3713.03	
		21 Karlsson T	3669.65	
9	Japan	34 Sakai H	3618.19	10913.09
		4 Katayama G	3670.43	
		19 Nagai S	3624.47	
10	Australia	39 Pike R	3579.12	10533.54
		24 Hines D	3524.39	
		9 Soloman R	3430.03	
11	Belgium	40 Verschoren W	3800.94	10412.40
		10 De Hauwere S	2857.26	
		25 Lefebvre H	3754.20	
12	Poland	2 Ochman J	3497.33	10355.84
		17 Gaudynski S	3424.90	
		32 Stefanski W	3433.61	
13	France	14 Uzan M	2180.05	8296.26
		43 Beguin C	2777.83	
		29 Noro F	3338.38	
14	Russia	27 Sobakin S	3748.58	7434.01
		12 Anashin S	3685.43	
15	Spain	26 Ramos M	3404.26	3404.26
16	Canada	41 Terrattaz J-C	3280.65	3280.65



F5D World Championships York 2004



Final Team Results

Position	Country		Scores	Total
1	Germany	83 Bartels J	488.62	1474.36
		84 Belting D	488.94	
		85 Wanner M	496.80	
2	USA	87 Flynn T	522.41	1573.59
		88 Kane D	510.26	
		89 Peterson T	540.92	
3	Austria	70 Meisinger P	550.61	1607.13
		71 Fraundorfer S	550.28	
		72 Mayr D	506.24	
4	France	80 Brouquieres Guy	573.24	1756.68
		81 Brouquieres Gill	587.84	
		82 Leclerc B	595.60	
5	Finland	77 Pietinen T	556.16	1771.94
		78 Saikkonen	562.38	
		79 Mannerberg J	653.40	
6	Canada	74 Andrassy R	1478.59	3474.83
		75 Sawers D	1126.44	
		76 Thannhauser P	869.80	
7	Belgium	73 Maes S	602.97	4802.97
			*2100.00 *2100.00	
8	Poland	86 Westwal	771.38	4971.38
			*2100.00 *2100.00	

* = Penalty for missing team member(s)

Member Classifieds

Complete new kits, unopened except to inspect the contents: contact Bill Fee, phone (760) 967-7259, or dwfee@cox.net.

- Astro Challenger - Astro Flight
- Eclipse - Airtronics
- Prairie Bird 50" - Peck Polymer
- Astro Challenger - Astro Flight
- Curtis Robin - 41" - Flyline Models
- Super Sinbad 62" (RC glider) - Sig
- "Lil Whistler" - by Larry Jolly



Steve and Jeff

Banquet Gathering

San Diego Electroglide for August 28 August 2004

Pilot	Freq.	Model	Toss 1	Toss 2	Toss 3	Total
Bob Anson	31	Ascent	90	34	24	148
Daniel Belknap	38	Filip V	0	93	53	146
Roger Pedersen	55	Pulsar 2000M	23	49	24	96
Don Wemple	43	Lil Bird 2M	15	36	24	75
Sean Belknap	56	Filip V	25	48	0	73
Pedro Brantuas	59	Lil Bird 2	DNC	0	64	64
Bill Woodfine	32	Filig V	23	19	17	59

There was no Open Electroglide for August. But, we will have one for September (so promised several pilots).

Two new ships showed up for this Electroglide -- the Lil Bird 2's. The reason for Pedros DNC for the first toss was due to the fact that he started his final work on the ship at 3AM Saturday morning and barely got to the field with it for the second toss! I have no excuse other than to have crashed twice in early testing due to the CG being too far back! Test flying under "contest conditions" can be trying!!

To my knowledge this is the first time that a non-g geared ship, an Ascent piloted by Bob Anson, has won an Electroglide. Congrats, Bob.

The next Electroglide will be on October 2nd -- the Saturday after the general meeting. Be there with your sp400 or your open ship. The 400's go for the first toss at 9:30, the open's, 15 minutes after the 400's finish.

Don Wemple