The Flightline

Volume 30,Issue 8 Newsletter of the Propstoppers RC Club AMA 1042 August 2000

Editorial - Park Flyers

Park flyers, they are everywhere, what are they and why are they so popular?

Most of us started in this hobby many years ago when the entry-level model was probably a rubber powered free flight model from a kit. Enough of them flew just long enough to catch our imagination and draw us into more complicated models.

Perhaps we were drawn to powered models but in the early days that meant either control line or free flight.

Free flight has enormous charm as it melds our building and trimming skills with the broad capricious sweep of Mother Nature. There is nothing quite like a scale powered free flight model ROG, steady climb and gentle curving glide back to a perfect landing. Unless it is the full blooded howl of a Class C contest ship cork screwing up to a perfect roll-out into a soaring glide, nibbling at the edges of a thermal and returning to earth just after the "Max".

Well, wake up old timers, it didn't happen that way very often. Usually the scale ship turned tighter and tighter until it corkscrewed in. And if the contest ship did manage to make it to altitude, it then promptly disappeared downwind with you in hot pursuit. Could you run that hard anymore?

Of course, on the East Coast the other outcome was the infamous tree.

(But guess what guys, I did see nirvana while I lived in California.

It is called Lost Hills and is in the San Joaquin Valley Northwest of Bakersfield.

There I did see Texaco powered free flight scale models fly within sight for fifteen minutes and land on their wheels. And I did see Class C gas ships auger to the heavens then float for seemingly hours within sight of the launch point.

Lost Hills is owned by the National Free Flight Society and is six hundred acres of absolutely flat featureless land devoid of any vegetation. The nearest features are the Coastal Range of mountains twenty miles West ……..But I digress.)

In the Olde Days we never had it that good so we sought ways to fly our dreams in smaller fields. That meant the aforementioned control line models or Radio Control. While I flew control line team race and stunt in England the cry from my cohorts flying in the adjacent field was "is that radio controlled?" "No it is just naturally unstable".

Of course the natural path was the desire for complete control over our models, so many have followed the path of RC developments, from the first heavy single channel systems to the lighter "bang-bang" systems then to the multi-channel reed and, subsequently, today's proportional systems.

The development path to more and more capable models lead to today's basic .40 powered four channel proportional trainer and sport model as the standard. It requires a large field with agreeable neighbors.

Continued on page 5

Inside This Issue

The Propstoppers Electric Fun Fly

Sunday 27th August
9 am to 4 pm

Join us and fly up a silent storm. Show the guests our high-current e-fly activities. Still time to build.

See how the visiting experts do it.

Calendar of Events

Club Meeting
Tuesday 1st August 2000
Dallett Field 7 p.m.

Warbirds Over Pennsylvania
Saturday 5th August
BucLe Aeromodelers in Quakertown.

Burlington County Electric Fun Fly
Saturday 26th August, 2000
BCRC Field, NJ.

Club Electric Fun Fly
Sunday 27th August 2000
Dallett Field 9 am to 4 pm.

Regular Club Flying at Dallett Field
Every Saturday and Sunday weather permitting

Daily	**10 am til Dusk**
Saturday	**10 am til Dusk**
Sunday	**Dawn till Noon Electric and Gliders only!**
Sunday	**12 p.m. till Dusk**

Propstoppers RC Club of Delaware County, Pennsylvania.

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The President's Message

Mike Black

Dear Fellow Propstoppers

We had a beautiful evening the night of the July evening. Many of us were able to get several flights in and the meeting was well attended.

You electric fly guys will have to make it a point to get out to the August 1 meeting to hear the finalized plans for the electric fun fly.

So come on out and join us for an evening of friends and flying.

Some of us will be planning to attend War Birds over PA at BucLe Aeromodelers in Quakertown on Aug. 5.

It's a shame that the Parks and Recreation Committee canceled the activities for 7/15/00. Ed Schumacher was prepared and we were ready to put on a great show for the kids and involve them in our hobby. Thanks to everyone who planned to attend and help out. Jeff Sherman (The chairman of this activity for the TWP told me they would reschedule for late August or early fall, so we are going to freeze the hot-dogs and the plans and carry them out at a later date. I hope I called everyone who was planning to attend or help out. I also put out an e-mail to all of you in my address book.

The summer is passing us by quickly with three major events left on the calendar. Plan to attend and participate if at all possible. You won't regret it. It is always a pleasure to meet, greet and fly with you fellas. Keep the wings level and I'll see you at the field.

Mike

July 11, 2000 Meeting Minutes

Russell Neithammer.

Vice president Dick Seiwell called the meeting to order at 7:00 at Squire Cheyney/Dallet Field**.**

Secretary **Rusty Neithammer** read the roll call - there were 28 members and 4 guests present. The minutes of the May 2000 meeting were approved as published in the July newsletter, by the membership.

Treasurer **Al Gurewicz** gave the treasurer's report with income of $440.00, expenses of $75.30 and a new balance of $3068.41 reported.

Old Business

Fuel Order Pickup: Two additional jugs were needed in order to pump the remainder of the fuel from the drum. 44 gallons were sold on June 10, and those wishing to purchase the remaining fuel should make arrangements with **Bud McClellan**. Money for fuel should be given to treasurer **Al Gurewicz.**

Wildwood Days: It appears that **Al Tamburro** may have been the only Propstopper in attendance.

Club picnic: Thanks to **Mike** and **Kathy DiDomenico** for their efforts in organizing, and to all members who attended and/or brought dishes to share, for yet another enjoyable picnic. The weather was nearly perfect and made for a great day of eating and flying.

Toy for Big Boys: Sunday, June 25, in the afternoon, 54th and Lindberg Blvd., Phila (Bartram Gardens). **Rusty Neithammer** brought airplanes to show. The people running the event did not seem to be very aware that we had been asked to attend, but (after finding the place) it was rather enjoyable.

Thornbury Township Summer Day: Scheduled for Saturday, July 15. The event starts at 10:00 at Squire Cheyney (Dallet field) and runs to 2:30, and will continue at Goose Creek Park (by the old Westtown Train station/Goose Creek Grill restaurant) with an ice cream social and antique car show. **Ed Schumacher**, who has worked hard to organize the event, announced tentative plans as follows:

Have several planes in the air as visitors arrive
Helicopters
Electric's/All up last down. Etc.
Buddy box flying
Hand toss gliders
Lunch
Aerobatics
Combat

A static display of scale models will be available throughout the day.
Ed will ask HobbyTown USA if they are willing to donate prizes to give away for the hand toss glider event.

Chris Catania has issued 18 press releases to various local newspapers publicizing the event.

Electric Fun Fly: Dave **Harding** will again coordinate this event. Outside AMA member participants will be invited, as was done last year. The date is Sunday, August 27. Several people outside the club have already expressed interest in attending.

The Pennsbury Land Trust, Pennsbury Township, PA (near Chadds Ford) is holding their annual Balloon Fest (hot air balloons) on Saturday, September 16, 2000, and has asked if we would be willing to bring and fly RC planes (and helis) as part of their event, from about 2 – 4 PM. It appears that enough members are willing to attend, so we will commit to do this. They have been advised that they will need to prepare a suitable runway, and seem to be willing to do that. See **Rusty Neithammer** for more details.

Night Fly: This is planned for Saturday, September 16 (i.e., over the September new moon), following the Pennsbury Land Trust flying demonstration.

Saturday, June 17, 10:00 AM the Cloud Kings RC Club hosting a fun fly at the Harris Private Airfield, near the intersection of US Rt. 1 and Rt. 896. **Rusty Neithammer** attended and reports that they have an incredible runway (1600 ft), and there were many interesting (and quite a few very large) aircraft present. Unfortunately, there was a fierce crosswind that persisted the entire day.

There were many interesting planes (and only one crash) at last week's Warbirds Over Delaware event, attended by several club members.

The Warbirds Over Pennsylvania event will be held on August 5, near Quakertown.

The membership voted not to pursue any plans to waterproof the roof of the structure at Squire Cheyney, for reasons of excess heat retainage, and concerns about snow load and drainage.

New Business

Mike DiDomenico volunteered the services of his wife Kathy to repair/replace the windsock at Squire Cheyney.

There was no 50-50 held.

There was no show and tell, but there was lots of good flying.

Reminder: Summer meetings at Dallet/Squire Cheyney – 7:00 PM: August 1

Raindates for the above meetings will be the following Wednesday.

Vice President Dick Seiwell adjourned the meeting at 7:30 PM.

Rusty Neithammer

What is a Lomchevak?

Courtesy of Don Stackhouse of DJ Aerotech, djaerotech@erinet.com / http://www.bright.net/~djwerks/,
May 1999 as originally posted to Eflight web list.

Paul Gleeson asks:
"Can anyone describe what a Lomchevak is. I have heard it several times and don't know what it is? "

That's easy! It's simply one of the most misunderstood families of maneuvers in the history of aerobatics

If you REALLY want to understand Lomcovaks, find a copy of the book "Aerobatics" by the British champion aerobatics pilot Neil Williams, pub. by Airlife Publications, ISBN # 0 9504543 0 3 . Turn to page 189, the beginning of Chapter 22, "What is a lomcovak?"and begin reading.

After you finish, go back to the beginning and read the entire book, you'll be glad you did. This is simply the best book on the general subject of aerobatics I've ever read!

A Lomcovak is NOT an inverted spin. It is NOT a non-precision maneuver. The pilot is NOT "just along for the ride".
Recovery does NOT just occur at random without any control by the pilot.
It is NOT a single maneuver, but rather an entire family of maneuvers, all of which are very precise and controlled from beginning to end IF they are properly done.

The key element in a Lomcovak is that the airplane's attitude and motion is controlled by four primary flight controls rather than the usual three. The fourth attitude control in this case is gyroscopic precession from the prop, controlled via the throttle. This is why it's extremely difficult (that's spelled i-m-p-o-s-s-i-b-l-e) to do a true Lomcovak with a model;
in most cases our props simply aren't heavy enough to provide sufficent precession forces.

There are five main types of Lomcovaks. There are also variations within each type. All are performed under negative "G".

The one most folks are familiar with is the "Main" Lomcovak. This begins from an inverted climb.

As airspeed decays to near zero, the pilot initiates something initially resembling an inverted snap roll, so that the aircraft has a rotation rate about the pitch, yaw and roll axes as it reaches zero speed. The aircraft performs three foward tumbles, each one at 45 degrees to the plane of the previous tumble.

At the end of the third tumble, the aircraft recovers into a vertical dive.

The "Cap" Lomcovak begins like a hammerhead, but as the airplane rotates to the halfway point, with the fuselage horizontal and the wing vertical, a combination of gyroscopic precession (caused by the yawing rotation from the vertical entry) and down elevator cuases the airplane to perform a single forward tumble, with the plane of the tumble horizontal. As the plane returns to its initial position, throttle is closed and the aircraft yaws the rest of the way to a vertical downline for recovery.

I haven't done a complete true Lomcovak myself, but I once did part of a positive "G" variation of this by accident in a DeHavilland Chipmunk, which is how I discovered that Chipmunks do not like to do hammerheads to the left! It's a really weird feeling the first time.

The "Positive Conic" and "Negative Conic" Lomcovaks describe a cone shape in the sky, with the airplane pointed upwards as it sweeps out the cone shape with its underside. The point of the cone is at the prop for the positive conic, and at the tail for the negative conic

Finally, there is a version resembling the "Main" Lomcovak, but entered from knife edge rather than inverted flight. This one is particularly violent.

The pilot is near the center of rotation for most Lomcovaks. These maneuvers are very disorienting, but not generally too stressful in terms of "G" forces on the pilot. However, since Lomcovaks use the precession forces from the prop as one of the flight controls, as you might imagine, the forces on the prop, crankshaft, engine mounts and engine are extremely severe. The centrifugal forces on things like wing panels can also be surprisingly high, and usually totally different from what the engineers were thinking when the airframe was designed. It is prohibited in a number of aircraft, and results in severe life limits on the rotating components in a number of other aircraft.

Shortly after the maneuvers were invented by the Czechs, some of the top Russian pilots started trying them in their Yak 18's.
Shortly after that, there were a series of prop, crankshaft and engine fractures on Yak 18's, including one where the entire engine was yanked off of the firewall by its roots! Right after that, the word went out from "upstairs" to the members of the Russian aerobatic team that anyone caught doing Lomcovaks in a Yak could expect his address to be changed to a gulag in Siberia IMMEDIATELY.

There are a number of other manuevers that also impose severe stress on props and engines. Snap rolls and flat spins are some of the worst. However, nothing can break a crankshaft quite so well as a good Lomcovak.

One project I was involved in during my previous career (before I quit to go into the R/C model business full-time) was assisting development of a Kevlar-bladed prop for aerobatic aircraft that would have the strength to tolerate this sort of abuse, and low enough inertia to protect the engine as well. It was well received by the aerobatics enthusiasts, a number of whom had already been through the harrowing experience of landing an already sensitive and tailheavy aerobatic aircraft deadstick, with a few score pounds of aluminum missing from the nose.

Don Stackhouse

Park Flyers *continued from page 1*

Beyond that is the path to more and more capable models in terms of aerobatic performance and overall realism. This is accomplished by shear size. Let's face it; large models perform and look great. And there seems to be no end to the trend, but at what cost? Well, there are two; the absolute cost of the airplanes and their equipment and secondly, but perhaps more important, the size of the field required for their operation.

Now we are getting somewhere. In our society successful development means satisfying a need and frequently it is a need that we didn't recognize. Who needed a Volkswagen in 1960?

So what is the need that Park Flyers satisfy? (Thought I forgot where we were headed didn't you?)

Well, it is the desire to build and fly model airplanes, which excite us. What are the ingredients?

Control, modest cost and convenience of use.

In other words, affordable models, which fly great, ***and we can fly in the neighborhood***.

But why the sudden interest?

Because the industry which feeds off our desires has built the equipment which allows us to do it. And our buddies and cohorts have designed the airplanes, which take advantage of this stuff.

Let's examine this revolution, because that is what it is. But it is not a single revolution, it is a family of revolutions which include outdoor park flyers and indoor park flyers and extends down to indoor micro flyers which can stay aloft for hours and hours.

The first element in the revolution has to be the control means. We now have a seemingly endless choice of low cost radios, servos and batteries which afford complete control with various control mixing functions and numerous model memories in airborne weights measured in grams rather than ounces.

The second element is the wholesale successful development of electric power for such models. This includes motors, gearboxes, motor controllers, batteries and battery chargers. These devices are also inexpensive.

The models themselves cover all of our possible interests from sport to scale to aerobatic.

With our up and coming Electric Fun Fly in mind let's examine one approach to the park flyer that you could build for our meet (I will help you if you ask).

On a my recent business / vacation trip to California I just happened to be in San Diego while the local electric club, Silent Electric Fliers of San Diego, flew at their field adjacent to Sea World. They offer flight lessons to the public three days a week using a park flyer called the Dragonfly. The Dragonfly is a kit sold by Steve Belknap of Diversity Model Aircraft. http://flydma.com/

I bought one so I could fly later in my vacation up in the foothills of the Sierra's. Now my daughter lives in Pasadena which just happens to have a Hobby People store which is open seven days a week. So I was able to buy the things I needed in addition to the kit. These included a speed controller, battery pack and two Cirrus C20 micro servos at about twenty dollars each. Note that all of these parts are reusable in other models.

The Dragonfly is a very simple model to build; it consists of a hot wire cut, undercambered foam wing, a balsa tail and an arrow shaft as the main fuselage member. Additional fuselage structure is provided by laser cut 1/16 inch ply wing pylon supports, which also mount the servos, receiver and battery.

The wing is simply joined with a tape doubler and an undersurface packing-tape re-enforcement.

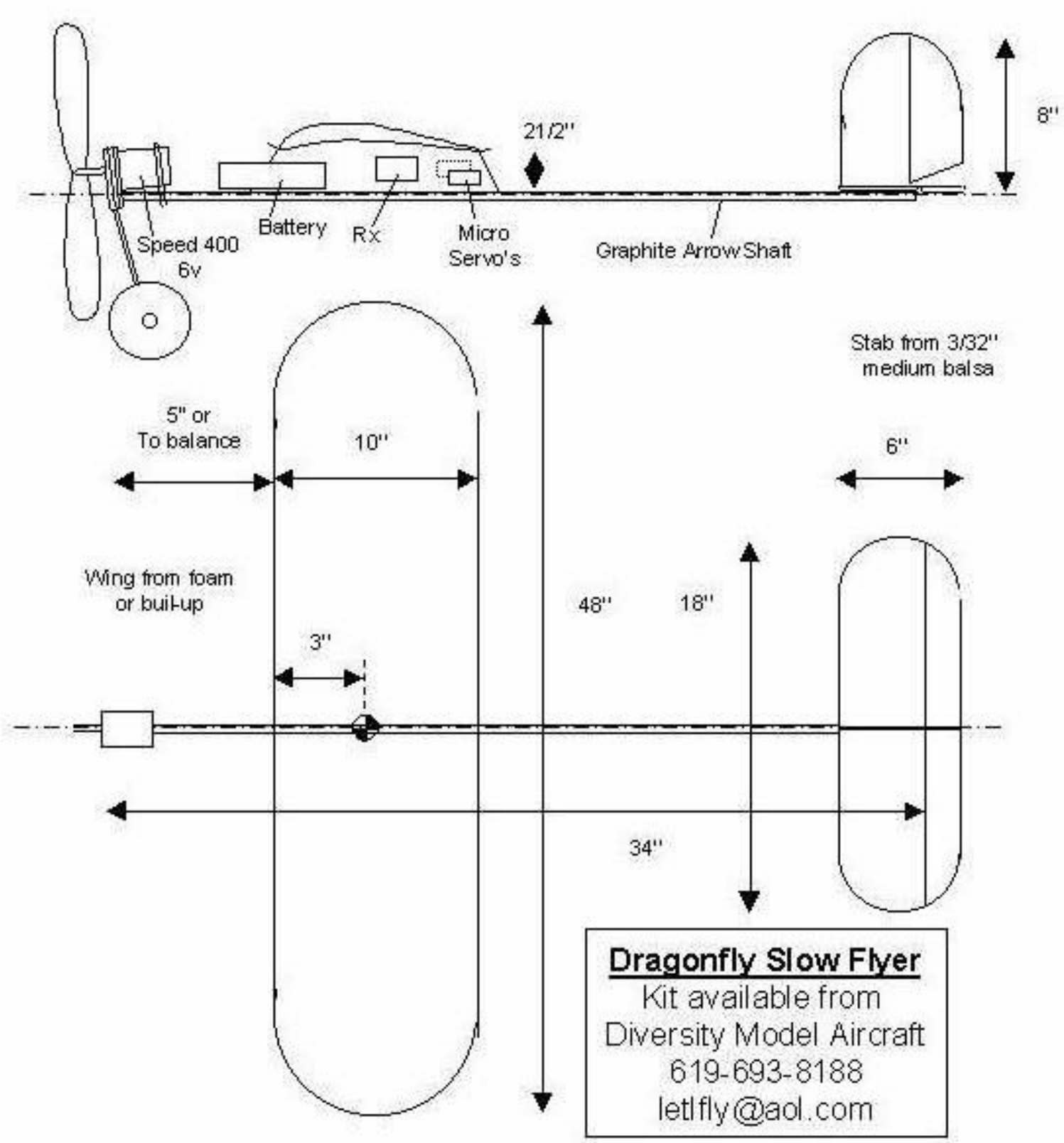
The real "secret of this model is that it so well matches the ubiquitous Speed 400 direct drive motor and prop with a seven cell 600 ma battery pack. These motors can be had for four to ten dollars although one is included in the kit.

Also, if you can use seven cells or less you can charge them with one of the inexpensive "car" chargers. They are inexpensive because they can be powered directly from a 12-volt car battery. (*More cells require that the charger include circuitry, which steps up the voltage from 12 volts. This is expensive!)*

On the back cover you can see the results of my work. Flying in Paradise! The loop by my feet is the G gauge outdoor railroad that my airplane flying, boat sailing buddy plays with! He was such a good host that I left the Dragonfly for him to use.

I am going to build another one like it. Won't you join me?

You probably don't absolutely need micro radio gear for this model. I am sure that a conventional receiver and standard servos will be acceptable so you don't have any excuse there. Isn't it a requirement of the club to own at least one radio set?


8''
21/2''
Speed 400
6v
Battery
Rx
Micro
Servo's
Graphite Arrow Shaft
Stab from 3/32''
medium balsa
5'' or
To balance
10''
6''
Wing from foam
or buil-up
48''
18''
3''
34''
Dragonfly Slow Flyer
Kit available from
Diversity Model Aircraft
619-693-8188
letlfly@aol.com

I am making the hot wire templates and will make additional wings for those who express an interest.

I also have several spare motors, specifically speed 400 six volts. These need a prop adapter and 6 x 4 prop or the best stuff is the Gunther prop that comes with the Zagi. They are readily available and require no adapter.

There are many choices for speed controller however, for a model of this size it is wise to buy one with BEC. What is BEC you ask? Well it is the circuitry built into the controller, which allows you to power the radio and servos from the same battery which powers the motor. The device is smart enough to know when the motor has used most of the charge but leaves enough to operate the radio and servos. At this point it shuts down the motor for a few seconds. You have to then make your approach and usually a little reserve power is available for those last minute precision flight path adjustments, which we all make!

I like the Castle Creations Pixie, which can handle 14 amps and weighs a fraction of an ounce. They cost about forty-five dollars. The California Dragonfly used a Hobby People, Watt Age controller that weighed about an ounce and cost only twenty-seven dollars.

I now have three seven cell 600 ma nicad battery packs. They suit the six-volt speed 400 perfectly. Hobby People have them for twenty-two dollars. These can be used over and over and seemingly never wear out.

The simple “car” battery chargers can be had for about twenty-five dollars or even less if you can find one used. They are fine for these small packs. Most operate off both your automobile 12volt battery and 110vac at home.

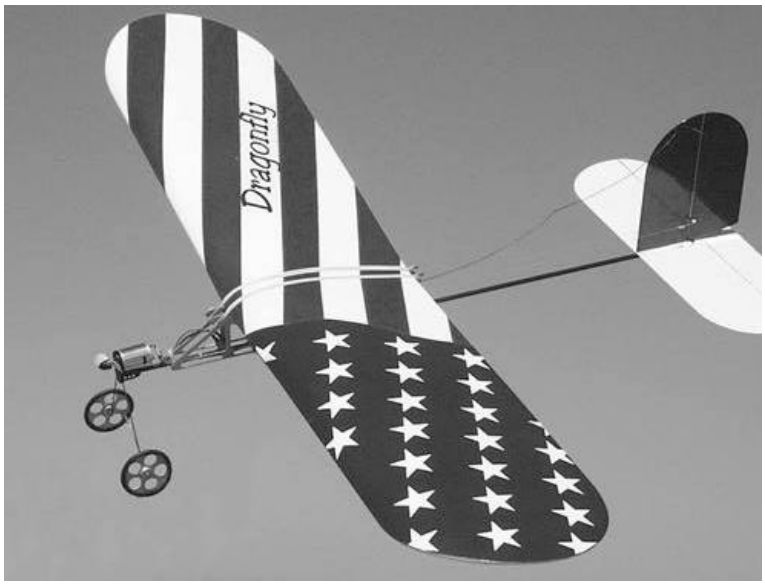
If you want to try a Dragonfly type model have a go at building one using your own approach to construction and materials. Our hero, Al Tamburro did in the spring. He made a simple electric powered model with a built up wing and stab and a simple crutch balsa fuselage. The initial power plant; motor, prop, gearbox and battery were a little weak…..Or at least that is what I told him as I augured into the long grass to avoid the trees.

Anyway, this last weekend, I took the motor, controller, battery pack and micro receiver from my foam delta and taped it to Al’s model. Flew great but once again did not survive the landing. Oh well, put it back in the cue with the other three I crashed on Saturday.

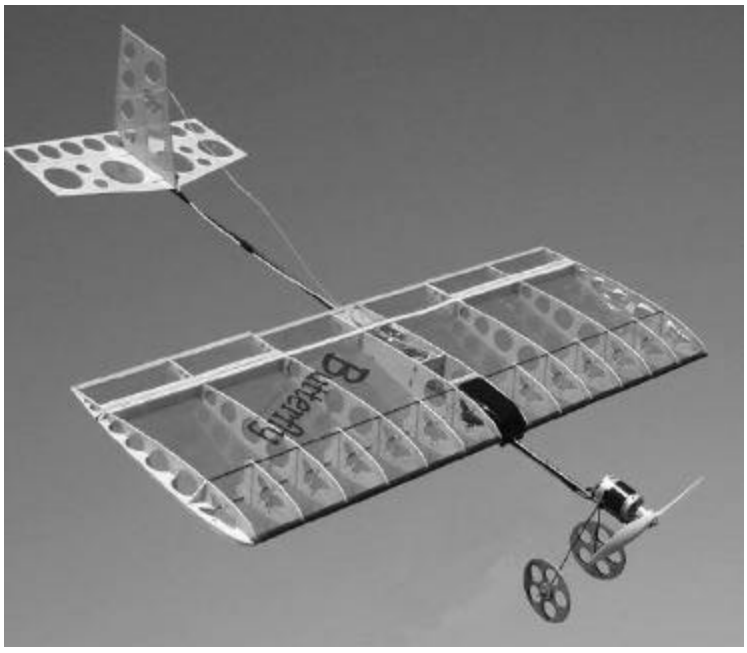
Why not try a park flyer? Need help? Give me a buzz. You can fly “in the park” and at our Electric Fun Fly too.

Dave Harding

Diversity Model Aircraft



Dranonfly



Butterfly Speed 400 Fun Fly Aerobat

Volume 30,Issue 8 Newsletter of the Propstoppers RC Club August 2000

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PROPSTOPPER NEWS

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