



The Flightline



Volume 32, Issue 7

Newsletter of the Propstoppers RC Club

AMA 1042

July 2002

The Propstoppers Picnic

The annual Propstoppers Picnic at Sleighton Field was blessed with good weather and Bill and Monica Shellhase's usual excellent organization and "incredible" refreshments.

The turnout included only seven members, but some of them brought their families.

For once Al Tamburro did not carve up the sky as he had forgotten to bring his transmitter!

Sam Nevins brought his usual collection of airplanes and took some pictures, as did Steve Boyajian. We will include some of these pictures in the next newsletter.

Rusty flew his Wasp fun-fly and Dave Harding's new electric powered Hanger 9 Piper Cub that is finished as a Navy NE-1 so it can be flown at the Warbirds meets (Rusty will fly it at the Warbirds over Delaware on July 13th).

All in all, a disappointing turnout, but for those who were there it was a great time. Thanks for all those who contributed and appeared.

Al Tamburro

Agenda for July 2nd Meeting at Sleighton Field 7 pm

- Approval of June meeting minutes
- Finance report
- Membership report
- Field report and committee establishment
- Bye Laws Revision Status
- Club Night Flying Event Planning
- New business
- Show and Tell - Wow us with something.



Picnic organizers, Bill and Monica Shellhase at Sleighton Field



Sam Nevins with one of his vast fleet at Sleighton Field

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Wildwood Beach Fun Fly

John Zebuski and Al Tamburro represented the Propstoppers at the WASPS flying-on-the-beach meet in Wildwood, NJ. The weather was beautiful although with the usual offshore sea breeze.

There were many outstanding aircraft including lots of electrics and they flew them all in the wind, from the biggest to the smallest.

Some of the most unbelievable models showed up. Such as a two meter glider with an 0.20 and a tuned pipe and rudder and elevator control. It did about every trick in the book, and at a very high rate of speed.

John put on a dazzling performance with his G-Bee.

No photos were taken by any of us, but we will try to get some from the club for a future news letter.

Al Tamburro

Calendar of Events

Club Meetings

Regular Meeting
Tuesday 2nd July at Sleighton Field

Regular Meeting
Tuesday 6th August at Sleighton Field

Flying Events

Sunday 30th June SAM 37 Contest
Wall Township, NJ
All the usual events, ignition, glow
and electric. Call Roy Hulse for
information 732-458-2394
rhulse@comcast.net

Warbirds over Delaware
Thursday 11th through Sunday 14th
July, Lums Pond State Park.

Sat 24th August Propstoppers Electric
Fun Fly at Moore Field.

Regular Club Flying

At Moore and Sleighton Fields

Daily	10 am til Dusk
Saturday	10 am til Dusk
Sunday	12 p.m. till Dusk

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Propstopper's Web Site:
www.propstoppers.org

Check the web site for back issues of the
newsletter, pictures of club events and the calendar
of future events.

Pictures courtesy of Bob Kuhn and Dave Harding

The President's Message

Mike Black

Disappointing news is always difficult.

I spoke to one of the Thornbury Township Commissioners, Mr. Ron Giacinto, the other day about our possible return to Dallett. He informed me that Orleans Builders purchased the Dallett property and will be building almost to the creek bed. He informed me that there was no way that they would approve our return, because planes would be flying too close to residences. He was unsure how soon they would begin building, but felt it would be in the near future.

I thanked him for the straightforward answer and asked him to keep us in mind if there was some other property in their community that would be suitable. He told me he would do that. He also told me he would call if the building plans change.

As a result of the above, I will suggest the formation of a field acquisition committee. We will need to research topographic maps, seek out realtors and possible properties to rent. We will then need to approach potential lessors with a proposal and obtain a lease.

Please plan to attend the regularly scheduled meeting on July 2 at 7 PM at Sleighton Field.

I'll look forward to seeing you there,

Mike

Piper Cub, NE-1 and L-4



At the beginning of WWII both services, Army and Navy, purchased Piper Cubs for various applications, initially mostly for training. These initial machines were designated NE-1's.

Later the Army had modifications made to increase the viewing area among other things, these later versions were named L-4's and were finished in a more appropriate OD color schemes.



Dave

June 4th Meeting Minutes

Vice-president **Dick Seiwel** called the meeting to order at 7:00, at Sleighton Field.

There were 20 members and one guest present. The guest was prospective new member **Micky Callahan**, who recently moved to the area from Virginia.

The previous meeting's minutes were approved as printed in the June 2002 newsletter.

Treasurer's Report – Treasurer **Al Gurewicz** reported an income of \$26.00 and expenses of \$457.00. Our total available funds are \$3624.00.

Old Business

Field Committee – Due to somewhat unknown circumstances, we were not able to get time on the agenda for the June meeting of the Thornbury Township supervisors, so there is no new news to report. The proposal has been prepared and is ready to present to the supervisors. Hopefully, we can be included on the agenda for the July meeting.

By-law Committee Report – The committee met and has finalized their proposed changes to the club's bylaws, thus conforming them to the AMA requirements. The proposed new bylaws will be presented to the membership for approval, at a future monthly meeting.

Club Picnic - **Bill and Monica Shellhase** have graciously volunteered to host this year's picnic at **Sleighton Field on Saturday, June 22, starting at noon**. Please mark your calendars. A sign up sheet was available for members to volunteer to bring food items. However, more volunteers are needed. Please call Monica or Bill at (610) 583-2919 to sign up.

Pennsbury Land Trust Balloon Festival - Saturday, September 14, 2:00 to 4:00 PM. Plan on attending and doing some demonstration flying for an appreciative audience.

The **American Helicopter Museum's Rotorfest** will be held on October 19 and 20.

New Business

A new area for heli flying at Sleighton Field has been cut. This area is located at the end of the pit area, and should be used for flying and testing activities that do not conform to the normal pattern.

Show and Tell

An impressive collection of old-timer style models was displayed and flown by Ed Goretzga, Mick Harris, Dick Bartkowski and Dave Harding. Power plants included electric, glow and even a few antique ignition engines.



Ed Goretzka with his Comet Clipper Mk. 1 powered by a Brown Model D spark ignition engine. Dick Bates is impressed.



Ed with Lanzo Bomber powered by a Merco 29 glow engine. Micky Callahan, Mick Harris, Sam Nevins, Al. Gurewicz, Eric Hofberg, Del Glennon and Rusty Neithammer look on.



Ed with 70% Buzzard Bombshell powered by electric Astro 05



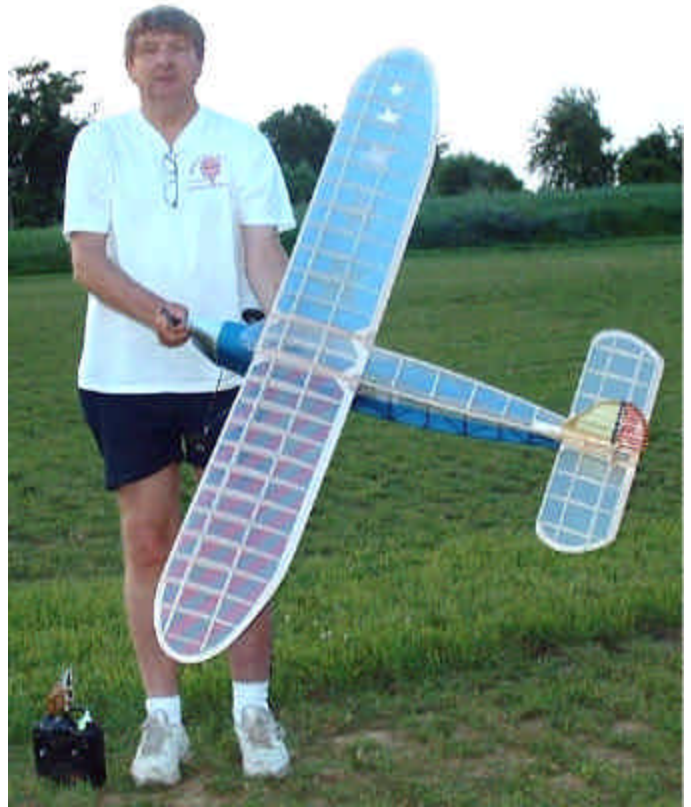
Three new models, three successful first flights in one evening! Wow Mick, that's 100%!

Mick Harris with Fairy Facula he showed at Sleighton and the Vic Smeed Mam'selle and Daedalus electric powered Old Timers at a subsequent Moore Field evening.



Dick Bartkowski explains his electric powered Pacer 'C' Old Timer Limited Motor Run competition model. An inexpensive Speed 600 motor and belt drive speed reducer powers it.

Below; Ed shows his electric powered Lanzo Bomber to Diamond Xemos, Dick Seiwel, Ray Wopatek, Charlie Crowell and Dick Bates. Model is powered by an Astro FAI 05



Dave Harding with his Miss America SAM Limited Motor Run electric competition model. Aveox brushless motor with Astro 2.3:1 gearbox turning a 17 x 11 prop.

The meeting was adjourned at 7:30 PM. The next meeting is scheduled for July 2nd at Sleighton Field. Rusty Neithammer



SAM 58 Old Timers Contest

The challenge of competing in the Society of Antique Modelers events was thrown down by Dick Bartkowski in the spring. He argued that the electric competitions under SAM were fun events and allowed us to exercise our competitive drives and technical challenge in some local meets.

Of course he had already been building a Pacer for this event so he was set and Ed Goretzka and Mick Harris had several candidates so I had to play catch-up. What to do?

The Limited Motor Run Electric event rules are for the models to be of a model that was flown before 1940. It could be scaled to match the needs of the event. The power plant must be a DC electric motor of any kind and the batteries must be NiCad's with 800-mah capacity, seven cells. The prop must be of the non-folding variety. The wing loading must be at least eight ounces per square foot.

The event is flown with a ninety-second motor run after an ROG takeoff. The score is the total time in the air up to a maximum.

So the challenge is to pick an airframe and motor/prop combination that allows you to gain maximum altitude then the minimum sink speed.

The airframe choice was made easy by the fact that there was only three weeks till the contest so I selected the Miss America because Mick had a plan I could copy!

The maximum altitude is obtained when you have the lightest model and a propulsion system that exhausts all the battery energy in the climb;

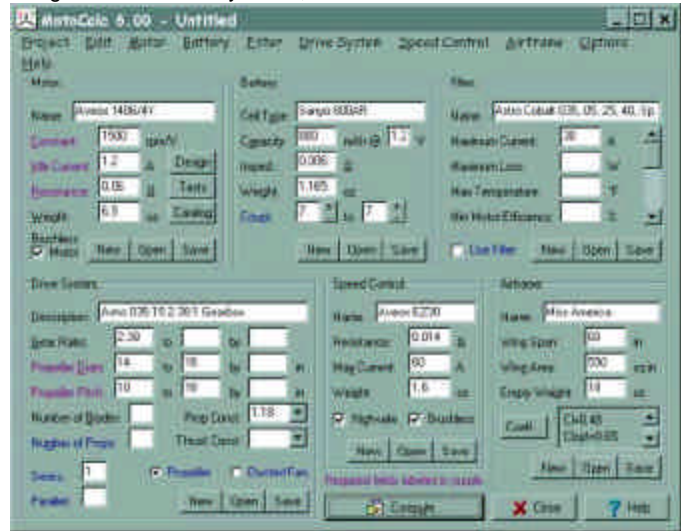
800 mille amp hours = 48 amp minutes or 38 amps for 90 secs. Say 30 amps with losses.

This allows us to pick the motor/gearbox and propeller.

The magic of electric power is that we can vary a gearbox ratio and either turn a small prop very fast or a large prop very slowly.

We could do all the calculations from first principles, and indeed that is what Dick Bartkowski does but I am more intuitive and lazy so I use Motocalc for this chore.

Motocalc is a \$40 program that you download from the Internet. It allows you to do all the electric flight "what if" examinations with a click of a mouse. Here is a typical screen shot of the inputs for the Miss America using an Aveox 1406/4y motor;



You can see that we have input the basic airframe parameters and the Nicad battery pack. We have also selected a motor and gearbox as a starting point. Motocalc has libraries of motors, cells, controllers, gearboxes and propellers from which to choose.

The next step is to pick a range of propeller diameters and pitches. As you can see in the input screen I have selected props with diameters from 14 to 18 and pitches from 10 to 18 inches.

The initial output screen looks like this:

Static Analysis - Untitled

Motor: Aveox 1406/4Y; 1500rpmV; 0.06 Ohms; 1.2A idle
 Battery: Sanyo 800AR; 7 cells; 800mAh @ 1.2V; 0.008 Ohms/cell.
 Speed Control: Aveox EZ30; 0.014 Ohms; High rate.
 Drive System: Astro 036-15 2.38:1 Gearbox; 14x10 to 18x18 (Fconst=1.18; Tconst=0.85) geared 2.38:1.
 Airframe: Miss America; 550sq.in; 34.7oz; 9.1oz/sq.ft; Cd=0.058; Cl=0.48; Clopt=0.65; Clmax=1.14.

Sea Level, 80°F

DC	Gear Ratio	Prop Diam (in)	Pitch (in)	Weight (oz)	Batt Amps	Motor Amps	Motor Volts	Input (W)	Output (W)	Loss (W)	Temp (°F)	Motor RPM	Motor RPM (W/Lb)	Out RPM (U/Lb)	Elect E (ft)	Prop EPM	Thrust (oz)	VSpd (mph)	Time (m:s)	
7	2.38	17.0	11.0	34.7	25.8	25.8	7.0	179.5	121.7	57.8	169.1	67.8	7418	82.9	56.2	56.1	3117	42.1	32.5	1:52
7	2.38	15.0	15.0	34.7	26.4	26.4	6.9	182.9	122.0	60.8	194.7	66.7	7259	84.4	56.3	55.0	3050	34.2	43.3	1:49
7	2.38	17.0	12.0	34.7	26.6	26.6	6.9	183.7	122.1	61.7	196.4	66.4	7214	84.8	56.4	54.7	3031	40.9	34.4	1:48
7	2.38	15.0	16.0	34.7	27.0	27.0	6.9	185.8	122.1	63.7	200.3	65.7	7107	85.8	56.4	53.9	2986	33.1	45.2	1:47
7	2.38	18.0	10.0	34.7	27.0	27.0	6.9	185.9	122.1	63.8	200.4	65.7	7104	85.8	56.4	53.9	2985	46.3	28.3	1:47
7	2.38	17.0	13.0	34.7	27.3	27.3	6.9	187.4	122.1	65.3	203.3	65.1	7024	86.5	56.4	53.3	2951	39.7	36.3	1:46
7	2.38	15.0	17.0	34.7	27.5	27.5	6.9	188.4	122.1	66.6	205.6	64.7	6963	87.1	56.3	52.9	2926	32.1	47.1	1:45
7	2.38	18.0	11.0	34.7	27.8	27.8	6.8	190.2	121.9	68.3	208.8	64.1	6879	87.8	56.3	52.2	2890	45.1	30.1	1:44
7	2.38	17.0	14.0	34.7	27.9	27.9	6.8	190.7	121.9	68.9	209.9	63.9	6849	88.1	56.3	52.0	2879	38.4	38.2	1:43
7	2.38	16.0	16.0	34.7	28.0	28.0	6.8	191.1	121.9	69.3	210.7	63.9	6829	88.2	56.3	51.9	2869	31.1	40.9	1:43
7	2.38	18.0	12.0	34.7	28.5	28.5	6.8	193.9	121.4	72.5	216.8	62.6	6673	89.5	56.1	50.7	2804	43.8	31.9	1:41
7	2.38	17.0	15.0	34.7	28.5	28.5	6.8	193.7	121.5	72.2	216.2	62.7	6686	89.4	56.1	50.8	2809	37.1	39.9	1:41
7	2.38	17.0	16.0	34.7	29.0	29.0	6.8	196.3	120.9	75.4	222.3	61.6	6534	90.6	55.8	49.7	2745	35.9	41.6	1:39
7	2.38	18.0	13.0	34.7	29.1	29.1	6.8	197.1	120.7	76.4	224.2	61.2	6484	91.0	55.7	49.3	2724	42.4	33.5	1:39
7	2.38	17.0	17.0	34.7	29.4	29.4	6.8	198.7	120.2	78.4	228.0	60.5	6391	91.7	55.5	48.7	2686	34.6	43.2	1:38
7	2.38	18.0	14.0	34.7	29.7	29.7	6.7	200.0	119.8	80.2	231.3	59.9	6310	92.3	55.3	48.1	2651	40.9	36.2	1:37
7	2.38	17.0	18.0	34.7	29.8	29.8	6.7	200.8	119.5	81.3	233.5	59.5	6257	92.7	55.2	47.7	2629	33.5	44.8	1:37
7	2.38	18.0	15.0	34.7	30.2	30.2	6.7	202.5	118.8	83.7	238.0	58.7	6149	93.5	54.8	46.9	2594	39.5	36.7	1:35
7	2.38	18.0	16.0	34.7	30.6	30.6	6.7	204.7	117.7	87.0	244.3	57.5	5999	94.5	54.3	46.7	2521	39.1	38.2	1:34
7	2.38	18.0	17.0	34.7	31.0	31.0	6.7	206.7	116.5	90.2	250.2	56.4	5860	95.4	53.8	44.7	2462	38.7	39.6	1:33
7	2.38	19.0	18.0	34.7	31.4	31.4	6.6	208.5	115.3	93.2	255.9	55.3	5729	96.2	53.2	43.7	2407	35.4	41.0	1:32

Motor performance calculations take ambient temperature and heating effects into account.

Color Key: Propeller Stated

Buttons: Save, Print, In Flight, Graph, Close, Help

Lots of information here. I have sorted the data by motor amps. So I can examine the performance at the limits of my motor.

Among the data you can examine at this level of analysis is the duration of run with these batteries, the static thrust (although this is not the end parameter that interests us) and the motor and prop rpm. We must watch the motor rpm limits also although with this motor we are nowhere near them.

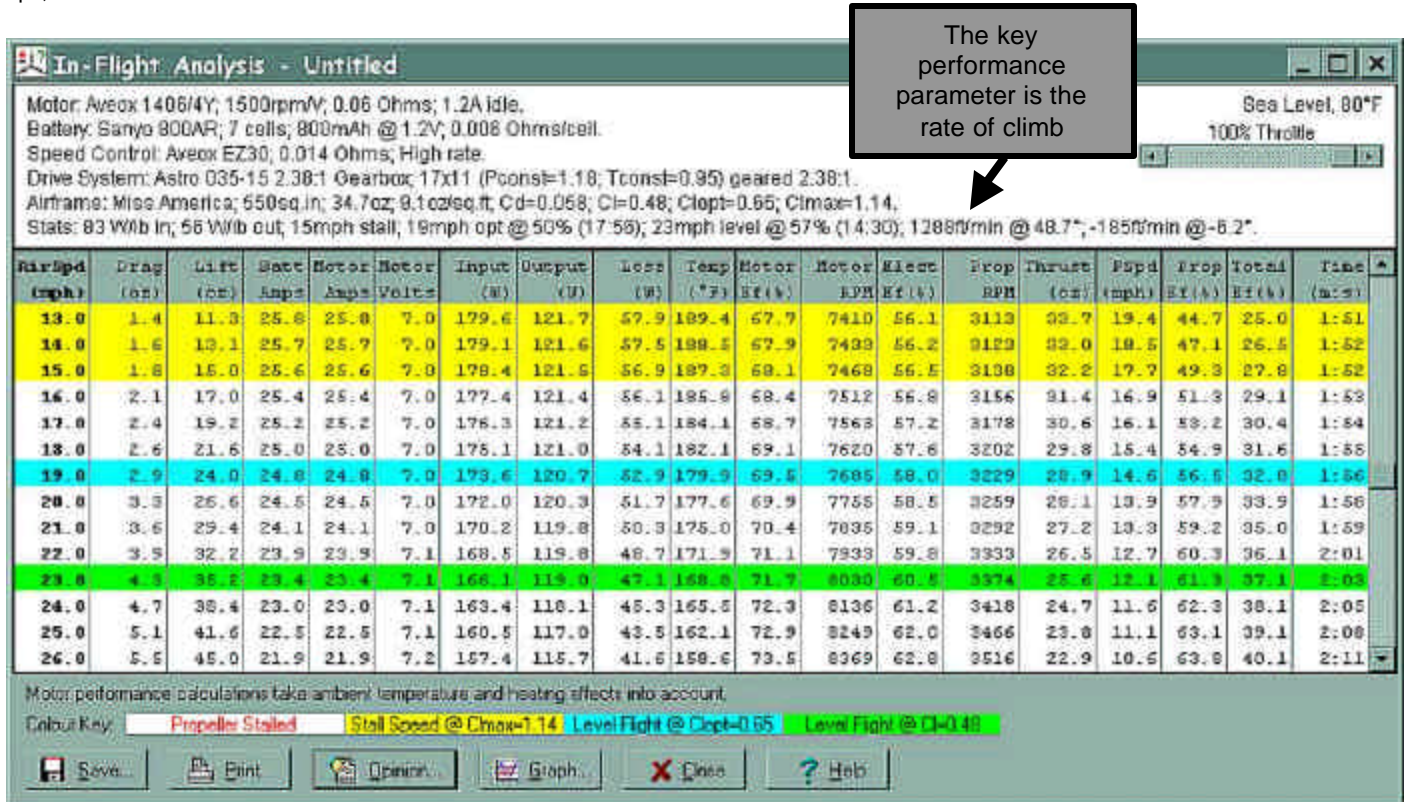
The next step is to examine the in-flight performance and here I show it for the 17x11 thin folding prop that draws 25 static motor amps;

suitable Speed 400 propulsion system from my recently "bent" E Fluffie glider so could I do it?

Give it a go as they say on the other side of the pond.

So I designed and built a 1/2 A Cub the same size as the Electra Cub I bought from Sam Nevins at the 1999 club auction. This 59-inch span model is probably too big but it was easier to simply copy the dimension than scale them.

At the 8 oz wing loading the Cub would have to weigh 24 oz so I decided to make a 1/16-inch balsa slab sided fuselage. The wing is a



The output shows the rate of climb to be 1288 ft per minute at a climb angle of 48.7 degrees. This would occur at a speed of 20 mph or just above the most efficient level flight speed. Battery duration at this condition is predicted to be almost 2 minutes. This indicates that we could go to a bigger prop and draw more amps but we are close to the motor limit. However, I did buy a 17 x 13 prop so I had one more step to go in the development process.

I could also examine a gearbox with a lower ratio that would allow me to turn a smaller prop at higher speeds but I had the Astro box in hand.

This is the model shown at the June meeting Show and Tell and flown also at that meeting. A picture is shown on page 4.

Dick used a different propulsion system for his Pacer, also shown on page 4, but it has comparable performance.

In addition to the LER event the SAM meet had an event called A Electric Texaco. This event allows the same models and batteries as the LER event but you are allowed to run the batteries to exhaustion.

My calculations suggested that the Aveox powered Miss America was suitable and competitive in this event without change.

Dick examined his Pacer and decided to re-motor it for this event with a quick-change geared Speed 400 motor system. This worked out fine, as one event was Saturday and the other Sunday.

Now Dick explained that the SAM 58 meet also had two additional electric events; 1/2 A Electric Texaco and 1/2 A Scale Electric. These events both mandated Speed 400 motors and 600 mah Nicad cells. Wing loading was also at the 8 oz per sq. ft level.

Well, why go to a meet with one model when you can go with two? I had two days to go and I had a very efficient and effective

sheeted LE design and the tips together with the stab and fin used laminated 1/16-inch soft balsa strips formed over my pink 1/3-inch foam board. (Still using the same \$30 stack).

These parts cured over Thursday night and by Friday afternoon I was mounting the radio gear and covering the model with the lightweight Mylar I used on the Miss America. Still a little underweight, I was able to use the rather heavy wheels and 3/32-inch music wire gear. Although the Cub was "finished" by the departure time of 6 pm Friday, I did not have a chance to finish the Mylar with doped yellow tissue and visibility was a concern with these types of contest models. So, just as we approached the SAM 58 field, first we saw a red Cub at a local strip then we found a Dollar Store that had spray paint. Unfortunately they didn't have yellow but they did have red so first thing at the flying site was to mask the windshield and spray it red like the one at the local field!

My Cub was legal for both the 1/2 A Scale Electric event and the 1/2 A Texaco. Dick modified his much used Trenton Terror Elexaco in the 1/2 A Texaco event with the model now fitted with the 600 mah battery in place of the 270 mah of the Elexaco specification.

Dick did the analysis on propulsion as I have described above only using his own suite of spreadsheet analysis programs. These indicated that adding a gearbox and using a larger prop would have a longer duration. However, he decided that the small gain was not worth the uncertainty in the losses of such a system so he stayed with direct drive but he changed the motor and prop combination.

Both these 1/2 A events allow you to run the battery to exhaustion so you also need to decide whether to run flat out and go for altitude then coast or go for a long slow cruise. Dick's analysis indicated that he should have way in excess of the 20-minute maximum timed for each competitive flight.



Old Timer Electric Contest Models
Dick with the Pacer 'C' and Trenton Terror and Dave with Miss America and Two-Day Red Cub taken at Moore Field after the meet.

Dick amuses the "serious competitors" with his Trenton Terror at the SAM 58 meet before the fly-off! Roy Burke from Canada on the left was meet Co-Champion.



So, there we were at the SAM field in Caughdenoy, New York on a beautiful June Saturday. Dick had managed to test fly both his models but I needed to see if the Cub would fly and trim it. No worries, flies perfectly with not quite straight up performance but pretty good.

We flew the A electric Texaco first and I was lucky enough to put in a flight of 13 min 26 seconds. I followed this with a 19 min 5 second flight against a 30 min max, the best single flight scored. Dick had a poor initial flight with his A Texaco as it had difficulty in getting above the turbulent lower air. His second flight was better but suffered from the same malady. Lesson learned; still air performance calculations don't always translate to real world conditions. Nobody else bettered my time so I had won my first event.

Second Saturday event for me was the 1/2 A Scale Electric, flying against a fifteen minute maximum scoring the best combined two flights. My first flight with the Cub came in at just over the max at 15 min 5 seconds. The second was 14 min 21 seconds, which made for another winning combination.

Sunday events were the A LMR and 1/2 A Texaco. We both flew our A LMR planes in the early still air. Dick had a poor flight for unknown reasons but my model maxed at 10 minutes. Our second flights were reversed as Dick maxed and I fell a little short at 8 min 17 seconds. The regional expert from Canada, Roy Burke, maxed his first flight and put in a nine minute second so he won and I finished second.

Now for Dick's specialty. The little Trenton Terror doesn't look like most modelers idea of a competition model and it generated much curiosity at SAM 58 particularly as Dick put in his first flight of over 20 minutes, a max. The Cub was not up to these kinds of times as I tried punch and coast, cruise and eventually a monster 13 x 13 prop. My best time was a 13 min 45 sec. However one other modeler made the max so Dick was in a fly-off.

As the two contestants prepared for the fly-off the contrast in the two models was evident. The "other" model was a larger Lanzo Bomber pylon duration model that should have much better performance than the Trenton Terror.

Following the simultaneous launch Dick encountered an uncontrollable pitch-up followed by a pitch down which caused him to be immediately 100 feet deficient in altitude. For some time it looked like Dick was on the short end of the stick but twenty minutes is a long flight and slowly Dick's model literally gained the upper hand. Then it became evident that the other competitor was using punch and coast strategy while Dick was in the cruise mode. The other guy was out of gas and Dick was rolling. Soon this difference became obvious, as Dick remained at altitude in the strong wind while the competitor descended to land.

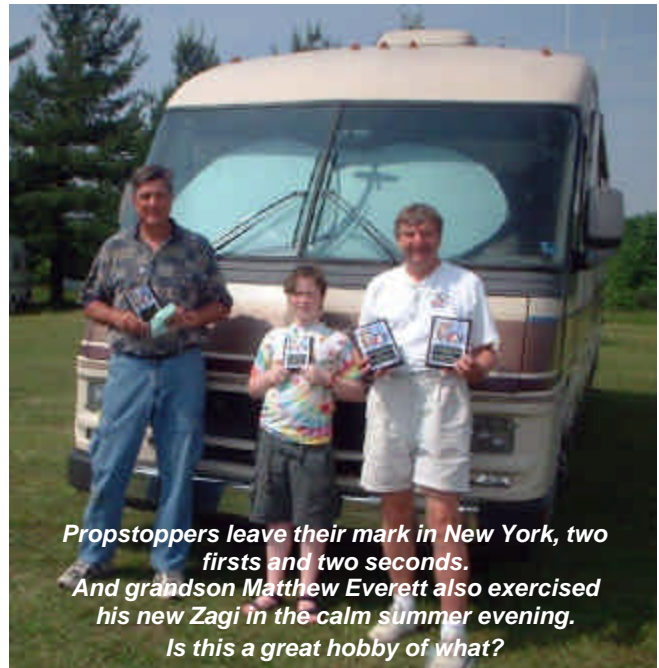
All that was now required was for Dick to descend and land on the field. On final downwind turn the little Trenton suddenly dipped just a little but it was enough to clip the long grass only five feet from the "in bounds" strip. The rules were clear and tested from the beginning; you must land on the field for the attempt to be legal. Dick fell short in the rules and came second but he was a clear winner in everybody's eyes.

So, was it worth it? You bet, where is the next meet Dick?

Dave Harding



Dick readies and Dave prepares the Trenton Terror for launch in the 1/2 A Texaco Fly-Off



Propstoppers leave their mark in New York, two firsts and two seconds. And grandson Matthew Everett also exercised his new Zagi in the calm summer evening. Is this a great hobby of what?

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Propstoppers R.C. M.A.C



Propstoppers June Meeting at Sleighton Field Old Timers Show and Tell

Note; the Meeting this month is 2nd July at Sleighton Field at 7 pm. Come early and bring a model to fly. Got something to wow us?

Dave Harding's grandson Matthew Everett with his Zagi after the first flight. Do you have your zagi ready for the Propstoppers Electric Fun Fly on 24th August? Zagi combat will be a feature event again this year. Go get one now! They are easy to fly and have amazing aerobatic performance. They are also almost indestructible.



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