



The Flightline



President's Message



The Election was held at the last meeting. Eric Hofberg stepped down as Vice President and Jeff Frazier was nominated to this position. The other nominations were

Dick Seiwell for President, Dick Bartkowski For Secretary, and Pete Ottinger for Treasurer. Since there was only one for each post the members present voted the new board.

Per Article #8 B3 the following appointments were made; Safety Officers: Indoor - Chuck Kime, Outdoor- Eric Hofberg, Membership Chairman Ray Wopatek.

The indoor season is here and the dates are shown on the next page. The Club picks up these costs for members, guests are \$3.00 per evening and AMA membership is required.

New Member reminder; Both fields are in good shape.

Elwyn ~ fuel and electric; Monday through Saturday 8am till dusk, Sunday 12:00 till dusk. Christian Academy; Electric only; Monday through Friday, 3:30 till dusk, Saturday 10 am till Dusk, Sunday 12:30 till dusk.

The lock combination will remain the same at C/A field

The November 13th meeting would be a good opportunity to bring your show an tells.

See you at the indoor

Dick Seiwell

Agenda for November 13th Meeting At Middletown Library; Doors open 6:00, meeting at 6:30

1. Membership Report
2. Finance Report
3. Indoor Program Discussion
4. Show and Tell

Minutes of the Propstoppers Model Airplane Club October 9, 2012.

The meeting was called to order at 6:35. 20 members were in attendance.

The Minutes from the September meeting were approved.

The treasurer was unable to attend therefore there was no treasurer's report.

Old Business

The September Picnic was a success with a good attendance from visitors. Thank you to all those that helped.

The paper work for the Tinicum indoor events has been completed. The format for flying was announced as being similar to the last meeting i.e. starting the session with an hour long segment for slow-flyers, but after discussion this was amended to revert to the old 20 minutes for each class format. Visitors will be asked to contribute \$3.00.

New Business

Members have been having trouble locking the C.A. gate due to the short length of chain. Dick S promised to care of the problem.

The good news of the meeting was that our flying privileges at Elwyn have been restored. Elwyn were very co-operative over the matter. The newly defined flying area is more restrictive, but looks very workable: how we use the field must be determined by experience. A letter of thanks (signed by club members at the next meeting) will be sent to the Elwyn president.

Nominations for club officers for the next year were taken. As only one candidate per position was on the slate, the candidates were voted in as below.

President	Dick Seiwell
Vice President	Jeff Frazier
Secretary	Dick Bartkowski
Treasurer	Pete Oetinger

Show and Tell

Jeff Frazier showed his latest lightweight aerobat, the Katana- KMX by Precision Aerobatics, powered by a 6s2p 2000 mah battery.

Mike Keenan showed a 'free' power supply. Al Tambora showed 2 air-boats - not airplanes but still fun machines!

The meeting adjourned at 7:45

Mick Harris for Dick Bartkowski, Secretary.

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Elwyn Field Available Again

On his return from Africa Larry Kuzimin made further inquiries with Elwyn officials on our use of the field. The result following another meeting with our club officials is we have been invited back albeit with a somewhat reduced field size; sharing the land with the farmer. Last week, Elwyn removed the old dead tree at the right of our approach and we are permitted to fly up at the far right also. The farmer will have a low electrified fence to deter deer, but a gate will be provided so that we'll have access to retrieve our planes. Please act like good neighbors and be respectful of the farmer's field.

Brookhaven Indoor Flying
This Saturday Nov 10th
Brookhaven Borough Gym 6till 9:30 pm
Guests flyers OK with \$3 charge, AMA required.

Calendar of Events

Club Meetings

Monthly Meetings
Second Tuesday of the month.
Middletown Library
Doors open at 6:00, meeting at 6:30 pm.
Next Meeting; 13th November

Tuesday Breakfast Meeting
Tom Jones Restaurant on Edgemont Avenue in Brookhaven. 9 till 10 am. Just show up.
Flying after in the Summer at CA Field or Chester Park; 10 am.

Regular Club Flying

At Christian Academy; Electric Only
Monday through Friday after school till dusk
Saturday 10 am till dusk
Sunday, after Church; 12 pm till dusk
At Elwyn Field; Gas or Electric
Monday through Saturday 8 am till dusk
Sunday 12 pm till dusk

Indoor Flying

Guests OK, AMA required.
Brookhaven Borough Gym 6till 9:30 pm
Nov 10 Dec 15 Jan 12 Feb 9 March 9
Tinicum School Gym 6 till 9 pm
Nov 2 Dec 7 Jan 4 Feb 1 Mar 1

Special Club Flying

Saturday mornings 10 am
Wednesday Helicopter evening in summer
Thursday evenings in the Summer
Tuesday mornings 10 am weather permitting after breakfast.

Check our Yahoo Group for announcements;
<http://groups.yahoo.com/group/propstoppers/>

Beginners

Beginners using due caution and respecting club rules may fly GWS Slow Stick or similar models without instructors.
The club also provides the AMA Introductory Pilot Program for beginners without AMA insurance.

Indoor Flying

Brookhaven Borough Gym 6till 9:30 pm
Nov 10 Dec 15 Jan 12 Feb 9 March 9

Tinicum School Gym 6 till 9 pm
Nov 2 Dec 7 Jan 4 Feb 1 Mar 1

Guests flyers OK with \$3 charge, AMA required.

Tinicum Indoor Report

Well, it's finally here: the Indoor Season!!!
Last Friday, Nov. 3rd 2012, the big night arrived. I arrived at Tinicum School about 5:45. I had the usual 1st night problems. Nobody knew we were coming. Went around to the back door and rang the bell for the janitor. I let him know we would be there for 5 Fridays. He always takes the time to see that we have anything we need.

Finally, into the gym. It looked like the floors had been refinished just for us. Looked great. People started to arrive just a little after 6. When the count was done, we had 13 flyers, and about 35 planes and helicopters. Flying went smoothly, with 20 minute flying segments. A few planes got Uh bent, but overall, a really good night.

Looking forward to Sat, Nov. 10th in the big Brookhaven gym. Being a Saturday night I'm looking forward to another good night. The time will be a little longer so everyone should be able to get in lots of flying.

So, get your models, tell a friend, and I'll see you Saturday.

Chuck Kime, Indoor flying safety officer

Indoor Flying With A Difference



Recognize anyone in this picture? Know where the "meet" was held? Know what the planes are? Hint it was probably in the 1970s.

Propstoppers RC Club of Delaware County, Pennsylvania. Club Officers

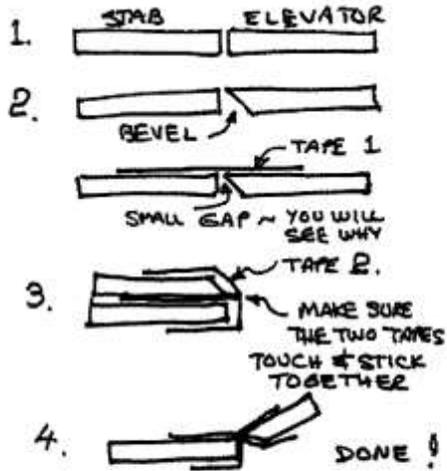
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Control Hinges

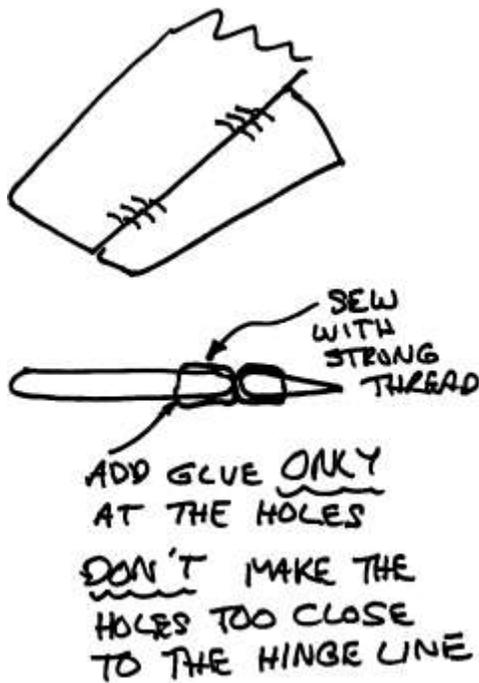
Some like the old fashioned hinge with a pin, others like the clever Robart Hinge Points, still others like the Nylon push-in and CA hinges originally from Sullivan.

I prefer tape hinges or hinges using the covering material. Here is how you do this one;

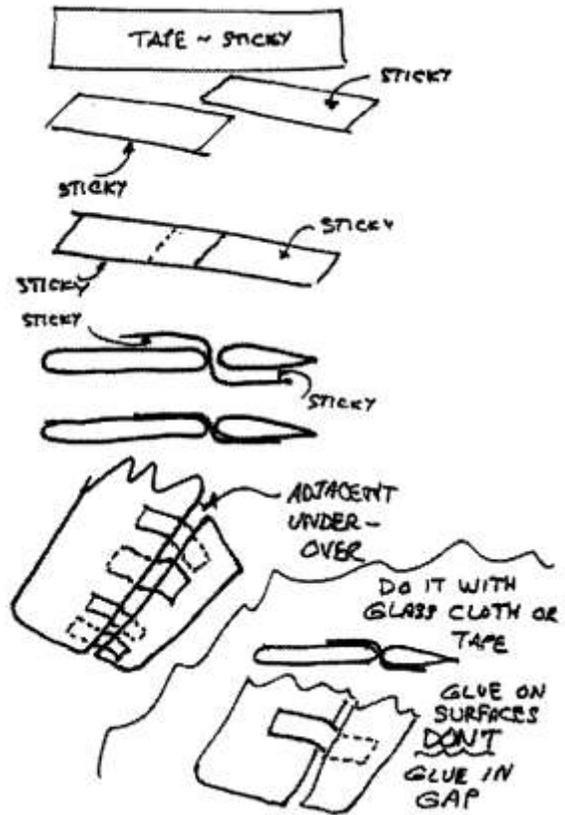


NOTE
 THIS METHOD CAN BE DONE WITH TAPE OR WITH THE BASIC FILM COVERING

And here is another using strong thread and a sewing needle.



There are other tape and thread hinges originally popular with the U/C fliers of years ago, but they are still viable, indeed they can also be applied in the field as a hasty fix. Here is an over and under tape hinge using packing tape;



Dave Harding

Phil Wittingham with his ex Jim Burrows SIG LT-40



Fun in the California Sun

The John Pond Annual SAM Contest

Organized by SAM 26 at Taft California

I had an excellent weekend with my West Coast flying buddy Mike Myers. On Friday we loaded up and drove to Taft California, a famous desert flying site in the Central Valley (San Joachim Valley). Taft is an old oil town that has seen better days. There are still many oil pumps but they only operate when the price of oil is high as the oil is like tarmac and can only be pumped by injecting the well with steam.

The San Joachim Valley produces a quarter of America's fruit and veg and the extensive orchards and fields encroach on the flying sites. And what is not in cultivation will be when they find buyers for the land although further growth in that sector depends on fighting the various water / wildlife conservation folks. Currently the battle is to save the river smelt in the upper Sacramento.

Anyway, for the time being there is a flying site at Taft although we don't know for how much longer as it is up for sale. So we make the most of it with several meets per year.

SAM 26 run the John Pond Memorial meet this time of year for RC flying. There are other meets for the free flight folks, many of them at the desert site they own in Lost Hills, about 100 miles north of Taft, although that site too is becoming limited due to encroaching agriculture. In their case pistachio trees having been planted on two sides. (political note; Iran was a leader in worldwide pistachio production, but the embargos brought on them have curtailed that export crop making US production profitable.)

This year the John Pond meet was held in perfect weather; cloudless skies, strong sun, 75 to 80 degrees high temperatures and in the 50's in the early morning. The winds were calm or a mild breeze. This made for some fine flying weather although you still have to pick your time to fly and find the big thermals.



One of the SAM guys just loves to make these takeoff pictures and this one gives some indication of the Taft flying site and the excellent weather we experienced this year.

I have made a new 1400 sq inch 118 inch span Stardust Special, probably the best aerodynamic Old Timer by US rules, I have build probably eight of them in different sizes over the last ten years.



This one is as big as I can make it and still fit in the hard sided golf bag so I can take it cross country or ocean; I still may go to the Euro SAM RC Champs in Hungary next year and if so will fly this model in Old Timer Ignition, with a McCoy 60, Electric Old Timer and Texaco with one of my diesel engines; Irvine 40, MVVS 61 or PAW 61. The model has a four piece wing and a removable piece at the fuselage aft end, of course the horizontal and vertical stabs are removable too.

I flew the model for the first time at the SAM Champs and found that despite my extensive experience with the model I got the CG way off and the wing fluttered in the climb. My SAM flying buddy Dick Bartkowski practices with his models so he doesn't suffer these teething troubles at the meets. One of these days I will learn!

My practice when building a model is exactly what we do in the real airplane business; I maintain a weight and balance spreadsheet, starting with estimates for element weights and replacing the estimates with measured data when it is built. This time my late estimate required 15 ounces of ballast at about the trailing edge of the wing. So I made a mold and cast a lead block to just fit between the servos. The model was almost un-flyable! As for the flutter, the Stardust Special has just the upper surface of the LE sheeted and of course I put shear webs between the upper and lower spars. I also put diagonal members between the spar and LE in each rib bay, these members were balsa and graphite. Still fluttered! Guess I forgot that I had a fully sheeted D box in my very successful 1100 sq inch version.

So after the Champs I removed the lower covering and completed the D box with +/- 45 degree graphite sheet! As you might imagine, that solved that problem, but the Champs was a bust.

Before leaving for California I did one hand launched flight to a good glide and a steep dive with no flutter so it went in the box. The hand launch was because now I had fitted the Electric Texaco powerplant for the first event and this has a 24 inch prop vice the 17 inch one for the Limited Motor Run event. I made a really tall single wheel gear in California but didn't get the chance to test it before the meet; another mistake.

The other event we fly at most meets is Speed 400. This is a limited motor run event with the motor being a Graupner Speed 400 6volt running on two LiPo cells of any capacity. The model must weigh at least 16 ounces and we get a 3 minute motor run which takes it basically OOS, and a 15 minute max. I have an old Stardust Special for this event and win about 50% of the time. It has a still air time of about 11.5 minutes, so it take a thermal or two to max. We score the best out of four flights.



At the meet I flew Speed 400 first and maxed on the first flight with good air. The battery is an old 1800 mah piece with more than enough capacity for two successive flights without recharging; you need ballast so a big battery is a good way to do it.

So I immediately went up for the second flight and didn't get nearly as high, nor did I find good lift but put in a 13:30 flight and waited for the rest of the guys to beat my times before flying again. When I charged the old battery I found it to be way down initially and woefully short of capacity, still, it was good for one flight so I was ready. It turned out nobody exceeded my time so I won that one.

When the weather looked good I took out the big SS and attempted my first ETexaco flight. The long whippy L/G took me by surprise as it caused the model to pogo and strike the prop, which in turn caused the gearbox pinion to come loose from the shaft; drat! So I took my time to disassemble the whole thing, clean the parts and although I had the correct high strength Loctite on hand I decided because the cure time was indeterminate, and probably longer than I had, I would use CA. this worked and we tried a second attempt with a hand launch but my flying buddy aimed it at about 30 degrees, and although I knew it probably couldn't handle that I let him launch. Sure enough, it settled back and into the ground again. That was my two official flights gone. But flying buddy, who is the Old Timer editor for Flying Models, said he wanted a picture of my model so why don't we fly it for grins, which we did.

After several low passes for the camera he said why don't you fly it for an hour, so we did that too, getting it so high on several occasions that I had to spiral down. At the hour mark I was out of lift and thought I was out of power too; we can turn the power on and off in Texaco, but when the model approached the landing I saw the folding prop, which we lock in place as we are not allowed to fold, was swept back some so it had become entangled with the L/G and the pylon. After the flight I found I had only used 2/3 of the battery energy so a 90 minute flight was certainly on the cards. I guess the spiraling down increased the airspeed to the point where it overcame the folding "lock". The winning ETexaco flight was 45 minutes.

The next day I flew the Limited Motor Run event with the big Neu motor pulling about 75 amps for 90 seconds. This model has a still air time of about 17 minutes against a 10 minute max. I made two easy maxes and waited for the competition. It took all day but one competitor did two maxes so I prepared with relish for the flyoff. They are great fun, especially if there are only two of you; tactics win. Anyway, in the event the competition decided he was too tired and waived the flyoff, so I won that too.

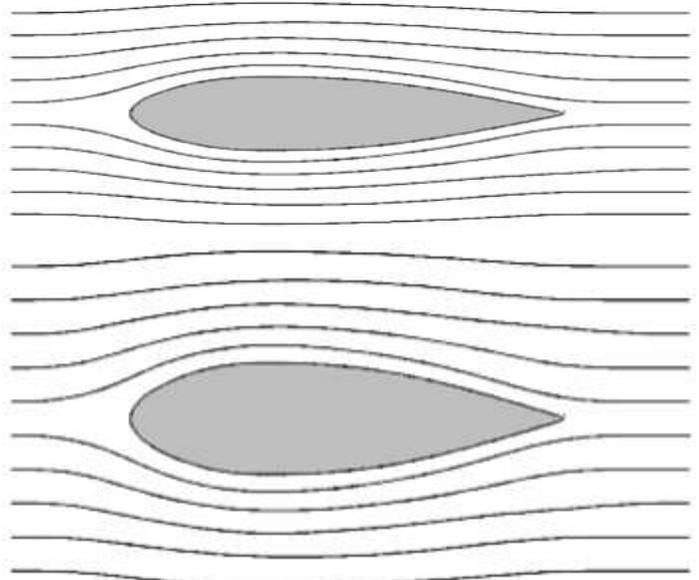
A great meet for flying and just being out in the desert air was wonderful too. Taft is about a two hour drive from the northern part of Los Angeles so we were home in time for dinner.

Is frontal area a valid measure of airplane drag?

It is not. Thin airplanes and fat ones have about the same drag, everything else being equal. Drag is more closely related to total surface area and shape than frontal area.

But the fat body has to move more air out of the way and move it farther. Doesn't that require more energy? Not necessarily.

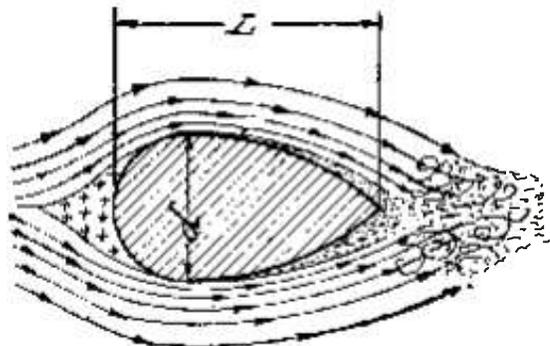
Air speeds up as the body pushes it aside and the pressure it exerts on the front of the body drops. Then, once the thickest portion of the body has passed, the air converges behind it. Velocity decreases and pressure rises, increasing pressure on the rear of the body and pushing it forward as you might squeeze a watermelon seed out from between your fingers.



If air weren't viscous, the work done in moving air aside would be recovered as it converges behind, and there would be no drag at all. This oddity of physics was discovered by the French mathematician, Jean d'Alembert (1717-1783). It is known as D'Alembert's Paradox.

Reality is more complex. Air develops a boundary layer, which contains turbulent air that is dragged along with the body, thickens toward the tail, forming a wake. The wound that was opened in the air as the body arrived does not heal completely after it has passed. The scar left behind is drag.

Of course if you get too greedy there is a lot of drag.



(Summarized from an article by Peter Garrison in *FLYING*, May 2002.)

SAE Aero Competition at Widener

Each year a team of senior engineering students at Widener University compete in the Society of Automotive Engineers Aero competition. This event requires them to design, analyze and fly a model airplane using an OS FX61 engine to carry the greatest payload and takeoff in 200 ft or less, landing in 400 ft or less. The students must also write a report describing their design and its rationale. It must also predict the expected performance and the score reflects not only the actual performance but also how accurately they predicted it

An article on this event was included in a recent Model Aviation article which described the activity for the West Coast flyoff. This took place at the Sepulveda Basin's Apollo Field, one of the flying sites I visit on my SoCal stays.

Dave Bevan has been supporting the Widener students for many years and I have for about the last four or five. Chuck Kime has joined us this year to help with the engine and prop testing shown here.



There are other rules, among them is the maximum dimension; span plus length plus height. This latter rule leads to some interesting configuration options. The design logic starts with the available thrust both during the takeoff run and in flight. The in flight thrust determines the maximum drag that can be overcome. The next step is to define the lifting surfaces and their airfoils ~ this in turn defines the maximum lift. Since the span of the tail does not increase the dimension of the airplane in these rules, you can make it bigger than required for stability so it can carry a portion of the lift. Now because the tail is flying in the wake of the wing it does not lift as efficiently, in other words it produces more drag per increment of lift than does the wing. But since you need a tail for stability and the drag of that is included in the total it follows that some increment of lift is almost free and there is an optimum size. I was so intrigued with this possibility that I decided to build a model to test the theory. I have a stash of wings in my shop and realized all I needed to build was a suitable fuselage. It should accommodate a range of wing and tail sizes and placement and allow for CG changes via moving the battery or adding ballast.

Here is the result using an old foam Butterfly wing, one with a deeply undercambered airfoil, not unlike those usually used in the event. This is important because such airfoils have a significant nose down pitching moment which increases the stabilizing requirements of the tail. I also had a small tail with integral elevator and associated servo from old experiments with canard designs. Finally a suitable aft wing / large stab was from a very old Goldberg Jr. Falcon. I added elevators with tape hinges and mounted the servo on top. The fuselage was fabricated from fanfold foam and 1/4 inch square balsa longerons. It incorporates a small outrunner in the nose and a vertical fin/rudder with servo in the back. There is no landing gear as hand launches over our "long grass test patch" at CA field was planned. I whipped it up in a day and asked flying buddy Chuck Kime to assist with the test flights.

The first configuration was with the small tail. I calculated the approximate neutral point; the point at which all aerodynamic forces apply, then set the CG ahead of it. We were ready for the first attempt, a hand launch with slight power into the tall grass. The flight was to check the CG and trim settings without full commitment to flight. A couple of tries and we were ready for a full flight, which turned out to be a real handful; it was tail heavy but it flew. Probably the deep undercambered airfoil meant the neutral point was a bit ahead of my crude estimation (note to self; if theory and practice disagree; always trust the practice!).



But we were running out of daylight so decided to try the bi-wing configuration. So with a replacement prop provided by Phil Wittingham we did some test launches. It seemed ok so we did a full flight. Wow; a pussy cat! Flew great, just like a sport model.



Dave Harding

The Great September Club Picnic and Air Show

