



The Flightline



Volume 32, Issue 4

Newsletter of the Propstoppers RC Club

AMA 1042

April 2002

Editorial.

Field Matters

At the March meeting Chris Catania, our field search chairman, gave a rundown on field status. First it seems that we have Sleighton Field for another year as a sublet to the farmer. Although we had entertained ideas of moving the runway to reduce late summer evening glare the farmer does not want us to do so. Furthermore, Chris said that we would almost certainly lose the field at the end of this lease term (spring 2003).

Consequently we need to do two things. First decide and execute a field preparation plan for the 2002 season and secondly, start searching in earnest for a new field.

Maintenance and improvements to the current Sleighton surface was discussed and some kind of surface preparation and seeding will be done. Rock picking is also a good idea at this time. So bring your rakes and wheelbarrows on The 6th April.

Moore field maintenance is to continue development of the runway extension begun last year. Chris will arrange for another six yards of fill dirt for the members to spread during the workday on 13th April.

During the discussion of a new field the question was posed why do we need another field when we have Moore. The answer given by President Mike Black was that Moore field is not suitable for large models, furthermore, if we did significantly increase the flying with larger gas models we would likely draw noise complaints from the neighboring houses.

The status of a possible Elwyn Institute field adjacent to Route 352 was discussed. Two problems were described,

Agenda for April 2nd Meeting

- Approval of March meeting minutes
- Finance report
- Membership report
- Field work plan refinements
- New business
- Show and Tell

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the first is that Elwyn is probably sufficiently close to Moore Field to cause radio interference concerns. The second and probably the most significant is the proximity of any likely flying strip to the road. Flying sites close to major highways are a hazard to the traffic and exposure to many possible spectators would cause all kinds of crowd control and safety concerns. And heaven forbid anyone puts an airplane into the road!

Chris stated that since Elwyn is already our landlord by virtue of their earlier purchase of Sleighton School, they are not currently interested in discussing such a field with us as we already have one. However, Chris is keeping this option open by continuing the dialog.

On the subject search for a new field Chris said that he is pursuing some leads but he could use some help. His view is the best thing would be to find some un-buildable land such as an area designated "wetland" to purchase. Builders frequently find such areas when developing large tracts of land.

Another source of land is the use of a landfill that is deemed unusable for any other development. There are many such fields described in the field development section of the American Modeler.

Finally, Jess Davis (I think) suggested that we should make another attempt to get something in Ridley State Park. Apparently some earlier attempts were made, obviously unsuccessful at the time.

So, what to do? Chris is obviously working his tail off on our behalf but we have no organized plan to augment his activities. It is about time that we institute a committee to methodically examine the alternatives. It is a time consuming process and the clock is ticking. What will you be doing next year if we are without a field? Wanna help?

Well, stand up at the next meeting and volunteer.

My suggestion is to have a core of retired members meet for breakfast each Tuesday at the Country Deli in Lima on Rt. 352 to establish this plan and begin its execution. Are you in? Want to lead it? Take the initiative and start it by calling Mike and volunteering. I'll join you when I return in mid April.

Another viewpoint that I will express, with of course my own bias, is we should examine whether we might have a better chance if we look for an all electric field. Wait wait, let me explain.

First I am convinced that the vast majority of flying that is done by our club members could be electric powered. This includes the general sport models that most fly but it could also include the aerobats that some fly and the large scale airplanes too. All of these things are done well with electric power by skilled modelers somewhere.

With the core of electric flyers in our club, I believe we could make this transition **if we all wanted**.

Why bother? Well, both the Silent Knights of Delaware and the South Jersey Silent Flyers have County-owned fields that are beautifully maintained, vast in size and conveniently located, maybe we could get one. Ridley Creek State Park might be a pushover for such a field. Noise complaints would be impossible so what else could stop us?

Just my view, but one we should discuss and debate.

Meanwhile I would like to offer help to anyone who is willing to convert their .40 or larger powered model to electrics. There are relatively inexpensive options and many of you have already made the big investment in a quality battery charger.

With a club purchase of Nicad cells at \$2 / \$3 each and inexpensive brushed, geared, motors; bring on those 21 cell 1/3 scale Cubs.

Perhaps we should work both approaches. Find suitable sites then examine their probability on the basis of either gas or electric fields.

"Hold on" you say, we already have Moore for electrics. True, and it is a wonderful place but it would be nice if we had **one** club field where we **all** fly, big and small models.

Dave Harding

Calendar of Events

Club Meetings

Tuesday 2nd April 2002 7:30 PM
Marple Newtown Library

Field Maintenance Events

Sleighton Field workday 6th April
Moore Field workday 13th April

Flying Events

South Jersey Silent Knights
Indoors April 17th
Electric Fun Fly April 21st
See their web site or call Dave
<http://www.sjsf.org>

Silent Knights of Delaware Indoor flying.
Jewish Community Center, off 202
See Dave or Dick Bartkowski
April 30 "
May 28 "

NOTE: These dates may change.

http://www.silentknightssoaring.org/club_indoor_flying.htm

Regular Club Flying

At Moore and Sleighton Fields

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

Propstoppers RC Club of Delaware County, Pennsylvania. Club Officers

President Mike Black
1 (484)-494-8054 mikeb10027@rcn.com

Vice President Dick Seiwel (610) 566-2698

Secretary Russell Neithammer
(610) 565-9549 neithammer@aol.com

Treasurer Al Gurewicz (610)-494-8759

Membership Chairman Ray Wopatek
(610) 626-0732 raywop@juno.com

Field Marshall Al Tamburro
(610) 449-4102 kaosal@webtv.net

Newsletter Editor Dave Harding
(610)-872-1457 davejean1@home.com
4948 Jefferson Drive, Brookhaven, PA, 19015

Webmaster Bob Kuhn
(610) 361-0999 kuhnrl1606@kuhnfamily.com

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

If you missed the March meeting, you missed one of the most active Show'nTell's of our recent history. There were so many models that Dave volunteered to move his battery soldering demo to another month. We did not get finished until 9 PM. Hopefully next month will be just as productive.

Please mark your calendars and plan to help out at the two field work dates. Picks should not be needed this time. Please bring gloves, rakes, shovels, buckets and maybe a wheelbarrow. We always get done in short order so pack a plane and plan to fly when the work is done. I look forward to seeing all of you out there. If you can't help out with the heavy labor, maybe you can push the seeder, spread fertilizer, or just cheer us on.

Eight of us met and drove up to Lebanon on the 9th. Al Tamburro, Eric Hofberg, Sam Nevins, Greg Dugan, Dave Harding, Jess Davis, Al Gurewicz, and yours truly. Thanks especially to Dave and Al for driving. Greg Dugan came home the big winner with two kits he had been looking for. Ed Goretzka, Marty Bakalorz and Ray Wopatek had tables at the fair grounds. I hope they made out well. We also saw Mark Berkemeyer and Diamond Xenos at the sale. Former member Mike Deneste spoke to me and asked me to say hello to all of you and give you his best. He is currently flying in Oxford. This is always a nice outing, especially on a dreary windy Saturday.

Let's get out there and do some flying on these seventy degree days. No need to wait for the official first day of spring.

Keep'em level!

Mike



Field Work Time, Let's Get To It. Dick Bartkowski and President Mike Black ready for action at last year's Moore Field Work Day.

March 4th Meeting Minutes

The meeting was called to order at 7:35 PM at the Marple Library by Vice President **Dick Seiwel**. There were 21 members and 1 guest present. It was noted that club member Al Yoncha has passed away.

The minutes of the February 5, 2002 meeting, as published in the March 2002 newsletter, were approved by the membership.

Treasurer **Al Gurewicz** gave the treasurer's report with income of \$432.25, expenses of \$230.50 and a new balance of \$5307.56 reported.

There are still club hats available - \$6.00 each.

Old Business

Field Search: Field Search chairman **Chris Catania** has discussed with farmer Rick Slossberg the relocating of our runway along Valley Road as has been previously discussed at club meetings. Unfortunately, Rick has not agreed to this request so the runway will stay in its present location. Otherwise, there is no new news on any potential new fields.

One issue for consideration is, that if we are successful in obtaining a field on the Elwyn property, the proximity to Moore field may require some sort of frequency coordination.

Chris is also discussing use of a field with the Westown School.

Chris requests that club members be observant for locations such as wetlands, unused industrial sites, etc., that may serve as a more permanent home for our field.

Indoor flying: This past Friday's event was the last one scheduled for this spring, and was probably the most successful in terms of the number of planes and number of successful flights. The Silent Knights Soaring Society plan several more sessions, to be held at the Jewish Community Center in Delaware, on Rt. 202. (See the Calendar)

Central Penn Aeromodellers/Lebanon flea market – will be held March 9 at the Lebanon Fairgrounds. As usual, plan on convoying with other club members. Meet at the Granite Run Mall Parking lot, across from Boston Chicken, at 7:15 AM. There will be a breakfast stop along the way.

The box of aviation items contributed by club members was sent to Kenya.

Send classified ads for sale items or items wanted, to newsletter editor **Dave Harding**, for free publication in the newsletter.

Mike Black was asked to provide an RC aircraft demo for the Interboro High School, Wednesday, March 20, 7 – 9:00 PM. Volunteers have signed up to bring planes to display and answer questions on RC topics. It is possible that the gym (which is 3 times the size of the one at Tinicum) will be available for indoor flying.

Newsletter editor **Dave Harding** asks members to provide him with reports of events they have attended. This can be done in any way that is convenient, including a simple phone call. Pictures are also most welcome.

New Business

Club events for 2002:

Picnic: Tentative date selected is June 22, pending **Bill and Monica Shellhase's** ability to host the event on that date.

Electric Fun Fly: Tentative date selected is August 24. **Dave Harding** will chair the event and confirm the date.

Night Fly: Date will be in the late September/Early October time frame, final selection pending obtaining information on the phase of the moon at that time.

By Laws revision: The AMA has given all sanctioned clubs a year to revise their by-laws to more closely conform to AMA requirements. We currently have by-laws, however, these need to be reviewed in light of AMA's requirements and revised as/if necessary. **Dick Bartkowski, Jesse Davis, and Dave Harding** have volunteered for this effort.

Dave Harding's daughter is involved in a home schooling group, which is having a program to build and fly Delta Darts tomorrow at the Chester/Upland school gym. Members who wish to help are requested to call Dave.

Show and tell awards for the past season were given out.

Due to the number of show and tell models brought in for this meeting, **Dave Harding's** presentation on battery pack assembly originally planned for this meeting will be re-scheduled.

Break

The 50-50 was **Mike Black**, who donated his share of the winnings to the club treasury.

Show and Tell

Rusty Neithammer showed his Fast Freddy indoor model, scratch built from the kit plans.

Power is the GWS IPS "B" motor, with the GWS Pico flight pack plus one additional servo, for 4 channel control. Covering is "Solite" (Solarfilm Light), which is available from Anything RC, Balsa Products, and Penn Valley Hobby Center, and most likely others.

The first batteries tried were the Ray-O-Vac 150 mah 9V NIMH, reconfigured into a 10 cell pack. Performance with these was disappointing. However, with an 8 cell 50 mah NICD pack, the plane jumped into the air at last Friday's indoor fun fly. The next packs to try will be 8 cells 120 mah NICDs (N120TA cells) from BatteryStore.com.



Club Membership Chairman, Ray Wopatek, Secretary Rusty Neithammer and Treasurer Al Gurewicz admire Rusty's Fast Freddie at the March Meeting Show and Tell.

Jesse Davis showed his Phantom Electric, built from internet plans, which are an enlargement of the old Comet Phantom Flash. Power is the GWS motor. The first covering tried was Saran Wrap, but this was removed after disappointing results and replaced with lightweight Mylar film, which was originally white but turned clear after heat shrinking.

Jesse also showed his SR Batteries Cutie – laser cut kit. Power is a speed 400-gear motor. Jesse found out that not all geared speed 400's are alike, mainly due to differences in the gearbox design. Covering is Fab Film.



Dave also showed his Hobby Club Puma- E-Fluffy ARF electric glider. Weight is 18 oz., speed 400 6V with 4.5:1 planetary gearbox, 7 cells and 14" x 9 folding prop.

Dick Bartkowski showed his free flight P40 indoor flyer, built from Depron Foam with a Takeoff 2000 motor, wiring harness and battery pack.



Al Tamburro showed his Wattage B2 Stealth, which he purchased at the club auction last month. Al is using the GWS receiver with the supplied Wattage speed control and motors. Al reports lively performance, as the model slammed into a pine tree during glide/"low power" testing in his back yard.

Dave Harding showed his Lancaster bomber indoor free flight model, also built with Depron foam wings and uses 2 Takeoff 2000 motors



Dave next showed his De Haviland Dragon Rapide indoor free flight, this time using mostly balsa construction with the Takeoff 2000 motors. A Dragon Rapide was his first airplane ride.

Rusty Neithammer - Secretary

Tech Note; Lift, Laws and Legends

One of the aspects of our hobby is the development of theories to explain the behavior of our models. Since the physics of what we do is quite complex and careful experiments to quantify the behavior difficult, impossible or just not fun we can assert almost anything without the immediate fear of contradiction. Its part of what we do and its fun.

In the March Model Aviation magazine Gregory Romine published an article on wing lift. Now this is a field on which a great deal is known so it is kind of upsetting when a major magazine publishes something that is just wrong.

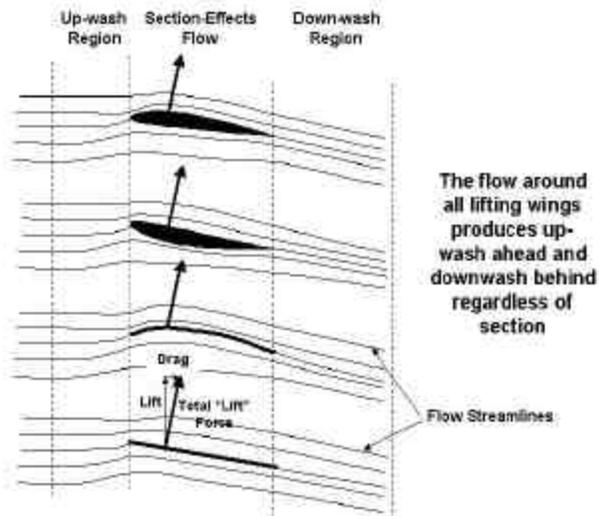
Gregory's article "The Lift From an Aircraft's Wing" seeks to describe wing lift as arising from a variety of phenomenon and states that conventional theory which ascribes much of the understanding of fluid flow to Bernoulli as being wrong. Unfortunately he is the one that is wrong and although I have corresponded with Bob Hunt, editor of the magazine, they refuse to condemn it because he is a University professor!

Anyway, I thought I would share with you my comments to Bob Hunt and his reply, so here goes but read the AM article first;

Gregory Romine's article "The Lift From an Aircraft's Wing" (Model Aviation, March 2002) is an excellent explanation of how Bernoulli's equations apply to wings but it is misleading to suggest that there are other phenomena that replace Bernoulli for flat wing sections. Neither is he correct in saying that there is a different lift phenomenon that arises from an angle of attack.

All wings that lift generate flow fields that produce pressure differentials between upper and lower surfaces. This applies to Clark Y, inverted Clark Y, symmetrical sections like NACA 0012 or flat and curved plates. It is true for those that lift at "zero" angle of attack like the Clark Y and for all other airfoils or shapes that require an angle of attack to produce lift.

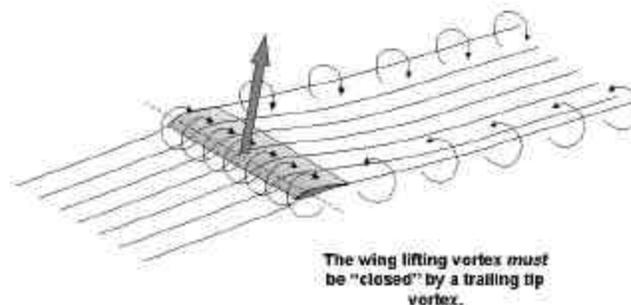
These flow fields can be analyzed using Bernoulli's equations to predict the magnitude of the lift without the addition of other Newtonian effects.



All wings produce drag and all lifting wings result in a downwash field aft of the wing. This downwash is simply the effect of the upper and lower pressure fields on the downstream flow. If lift is produced there must be downwash. These aren't different effects they all result from the mass of fluid reacting to the disturbance. Indeed, the energy equations must be satisfied at all parts of the fluid, at the wing, ahead of and behind it.

You might have introduced that other "old chestnut" that lift is caused by the circulation or vorticity generated by the wing. This of course is also true and is simply yet another way of explaining the same phenomenon. Wings that lift produce downwash, and viewed along the wing axis this effect can be replicated by a vortex or circulation. The circulation theory approach to lift description leads us to a better illustration of another factor in wing lift; the tip vortex.

When we solve the energy equations throughout a fluid we find that a vortex cannot exist as a simple line element such as generated by a wing. It must be closed into a ring or circle for the energy to be balanced and continuity satisfied. In the case of a simple un-tapered, un-twisted wing there is a tip vortex that closes the ring.



"Wait" you say "that makes a U not a ring, where is the other part to close it?" Well that is on the runway when you first rotated to generate the lift.

All of these flows obey Bernoulli's laws; there are just other ways of explaining it.

So;

- All lifting wings produce velocity differentials and thereby pressure differentials on top and bottom surfaces.
- All lifting wings produce downwash aft of the wing
- All lifting wings produce drag
- All lifting wings have circulation or vorticity along their axis
- All lifting wings produce tip vortices

Regardless of the wing section.

Bernoulli works for all these phenomena.

By the way, there is an excellent book that describes Bernoulli's achievement and the grief it caused him; "Five Equations That Changed The World: The Power and Poetry of Mathematics" by Michael Guillen.

Yours Respectfully

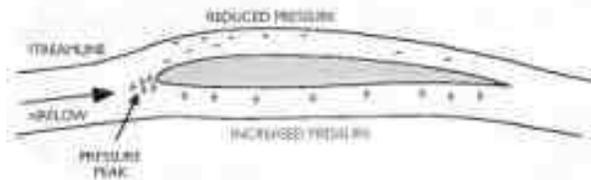
Dave Harding

Engineer, The Boeing Company. (Retired after 46 glorious years in aviation).

Following the AM article I found that a similar piece had been written in a British magazine and I also found the rebuttal from a noted aerodynamicist, Alistair Sutherland.

"In the RCMW's September issue Dr. Legg's six page article made the same point, that the Lift force on the wing has an equal and opposite effect which pushes the air down. (Newton's Laws - Ed.) What he says about Newton's Laws is correct but his violent and irrational attack on Bernoulli has done a good job of bulldozing to rubble the aerodynamic teachings of most books including Martin Simons' and mine. Sadly, the constructive part of his article does not make up for the opening blast.

The Bernoulli explanation of lift is by no means "fundamentally incorrect". Bernoulli's Theorem predates aerodynamics and is a cornerstone of science. Energy is neither created nor destroyed but can swap from one type to another, and Bernoulli says that when an airstream gains kinetic energy it loses pressure energy, and vice versa. The air pressure reduces on the top surface of the wing, where it speeds up (and may rise slightly underneath) which directly creates a tangible lift force."



Science

Mankind's limited and patchy insight into 'Nature', which we call 'Science', is a single body of knowledge which Academics slice up into their own little specialties, but we should not forget that they all inter-relate. Some individuals may infer ownership of their own particular patch, and promote its importance over other peoples' patches. Maybe there is a territorial "my bit of science is better than your bit" argument going on here.

But ALL the laws of nature must be satisfied when explaining Lift. An aeroplane must obey Newton's Laws, Bernoulli, Coanda and all the others. It can't select one and cancel the others."

Alsitair suitably illustrated his rebuttal with this picture of a trainer with at flat-bottomed "Clark Y" type airfoil flying inverted!



Here we see Newton, Bernoulli, and inverted flight with a trainer wing all demonstrated simultaneously by Stuart Savage's MBS 28 powered 'Peppi', a Phoenix Models kit

The response from Bob (Robin) Hunt, Editor of AM.

The Last of the Indoors?

Well we sure had fun. Overall this season's indoor activities have expanded the aeromodeling experience of many of our members. The new airplanes and equipment seem to change daily as each session has brought out new stuff and members and guests triumph over their new challenges.

The plane of the meet was undoubtedly Mick Harris's Bleriot. This huge model, 52 inch span, four square feet wing area weighs only 4 ounces. It is powered by the ubiquitous GWS geared IPS motor driving a 9 x 4.7 inch GWS prop on eight NiMH 120 mah cells.



Mick Harris's stunning Bleriot XI flying at the last Propstoppers indoor session in the Tinicum School gym.



Mick with Rusty on the sticks for another slow flyby.

This model flew so slowly you could watch the control surfaces move before the model responded.

Hi Dave:

I appreciate your efforts on this, but to be quite frank, I've received enough feedback on this subject. We ran (probably will be in the May issue Ed.) a long piece in letters to the editor and a response from Mr. Romine. No doubt there were some who took exception to his findings, but there were also those who agreed with him. He's a Physics professor, so I have to think that he knows a bit about the subject.

I'm sorry that this article has caused such a stir, and, believe me, I'll be more careful about printing this type of piece again without first passing it by several other experts on the subject.

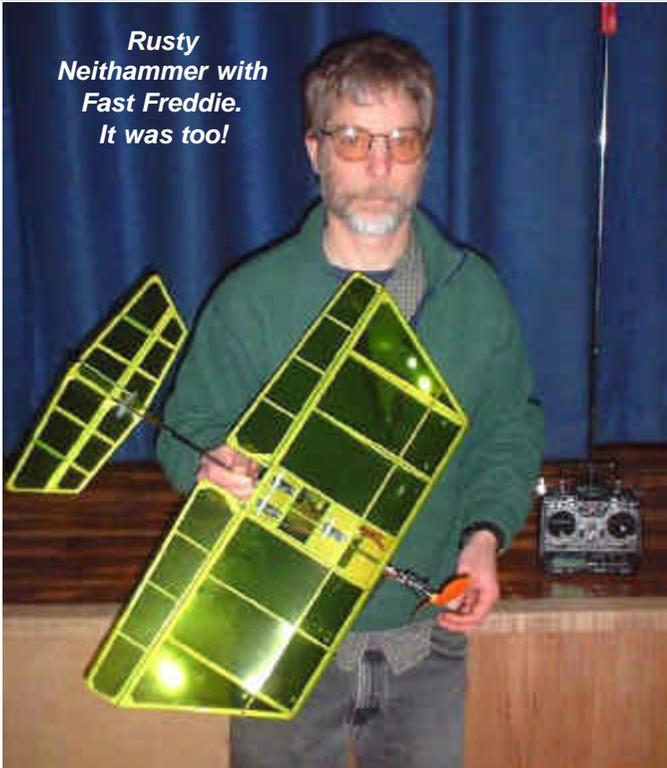
Yours for better modeling

Bob Hunt
Aeromodeling Editor
Model Aviation
AMA 1114

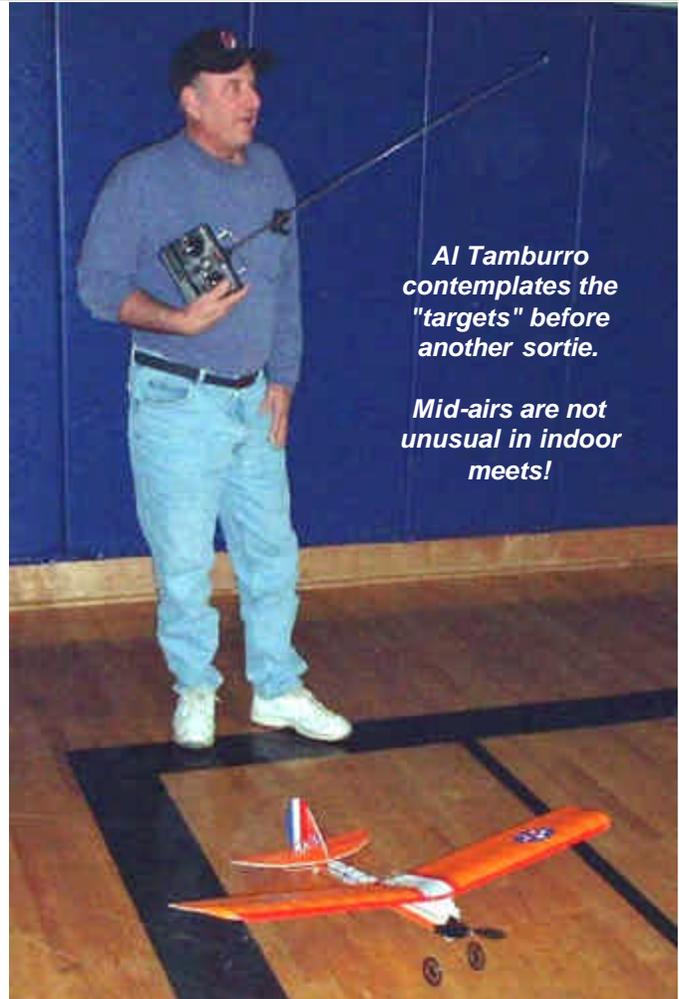
"So what"? you ask! Nothing really, just wanted you to know the article was wrong, and for myself, I couldn't let it go after a lifetime working with it.

Dave Harding





Rusty Neithammer with Fast Freddie. It was too!



Al Tamburro contemplates the "targets" before another sortie.

Mid-airs are not unusual in indoor meets!

Rusty flew his long awaited Fast Freddie although the experience was not what he anticipated. This one is a handful indoors. It's fast and falls-off as soon as you blink. Rusty, you should have waited to read last month's Flightline and incorporated maneuver flaps coupled to the elevator. It not only improves maneuver performance but at low speed the flaps droop significantly increasing the lift capability and lowering the minimum speed. Of course you need two servos in the wing to do it and this adds weight.

The free flight crew made many fun flights with their Delta Darts and small electrics. Here Dick Bartkowski makes a catch on his P-38. My Lancaster made a brief flight before battle damage.



Dick Bartkowski snares his P-38 electric powered free-flight after a great flight.



Dick Seiwel with his J3 Stick. Flies great and Dick is really pleased with it.

Dick Seiwel and Mike Black succeeded with their GWS J3 sticks and the IFO / Mini IFO guys have mastered these unique aerobats. Bodes well for the calm summer evenings over at Moore Field.

Al Tamburro tore up the sky with his IFO and this bargain basement ARF that was a little too heavy for comfortable flying in a gymnasium. We were all diving for the benches when Al fired this one.

Gentlemen, repair your aiplanes, the Summer Outdoor Season is about to begin.

Dave Harding

Dave Harding – Editor
4948 Jefferson Drive
Brookhaven, Pa. 19015
610-872-1457

Propstoppers R.C. M.A.C

Let's get out and fix those ruts.

*Saturday 6th April for Sleighton
Saturday 13th April for Moore*



Field Work Dates

- Sleighton Field - Saturday 6th April, 9:00 am
- Moore Field - Saturday 13th April 9:00 am

Be there! Bring tools and wheelbarrows



Bill Shellhase deals with Sleightons ruts in December.

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