



# The Flightline



Volume 34, Issue 4

Newsletter of the Propstoppers RC Club

AMA 1042

April 2004

## Editorial: The Great Outdoors

The moment is upon us, and it starts this Saturday, the 3<sup>rd</sup> of April. What is it? Why our outdoor season, that's what! It begins with our usual field preparation day, weather permitting. So, plan to join us at Sleighton Field at 10 a.m.

Bring your rakes, gloves, wheelbarrows and tools to trim the hedges at the access points. We will also address any repairs and improvements required for the shelter.

Before you come, please read the editorial in the latest, (May), issue of Model Aviation. Dave Brown addresses the safety issues associated with our fields. We should study the recommendations and consider our field situation. For sure we should add a notice board with the necessary emergency contact information. Do we have a volunteer to make such a board? Saturday would be a good day to post one.

I believe that Sleighton Field is located at;

N 39 55.843  
W 075 28.289

With the gate location:

Valley Road, Media, PA.  
N 39 55.675  
W 075 28.214

Of course, we will need one for Moore Field too.

Moore Field location is;

Gate; Moore Drive and Elizabeth Drive, Media, PA.  
N 39 52.957  
W 075 24.310

## Agenda for April 6<sup>th</sup> Meeting Marple Newtown Library, 7:30 pm

- Approval of March meeting minutes
- Membership Report
- Finance Report
- Field Report – Sleighton plans and search.
- Show and Tell

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Field

N 39 52.807  
W 075 24.543

What about a safety fence? We should consider one for Sleighton, along the lines recommended by AMA.

Field master extraordinaire, Dick Seiwel, tells me that there is not a lot of really hard work so with a good turnout there should be some time to play afterwards. So, why not bring an airplane to fly after the work is done?

By the way, one of the better parts of these work parties is, if you are a good boy, Dick Seiwel will let you drive one of his precious farm implements. This year he may bring out his new diesel powered roller. It's kinda narrow so it will take a time to roll the entire runway. Maybe we will have to take turns. What fun!

This Saturday is an opportunity for those less fortunate than the Tuesday Breakfast Club to sample the delights of our meeting place: The Country Deli.

The Country Deli is located on Route 352 in Gradyville, PA. About half way between the Gradyville light and Old Forge Road, the road most of us take to Sleighton Field when turning off Rt. 352 when coming from Granite Run Mall. If you are coming from Granite Run, pass Old Forge Road and continue about one half a mile. The Deli is on the left, just turn into the parking lot. If you see the Locus Crest Tavern on your left, you went 100 yards too far. Coming from the Gradyville light, it is on your right, just past the Locus Crest Tavern. The reason for these detailed directions is that some of our senior members haven't found it yet!

Anyway, why not join us for breakfast at 9 am on Saturday, and then we can proceed to the field at 10.



**A Cub for breakfast! Bob Crowell, Mick Harris and Dick Bartkowski at a recent Propstopper Tuesday Breakfast at the Country Deli. Read about this Cub inside.**

Dave Hardinn

## Calendar of Events

### Club Meetings

Regular Meeting 7:30 pm  
Tuesday 6<sup>th</sup> April  
Marple Newtown Library

### Flying Events

Tuesday Breakfast Meeting  
The Country Deli, Rt. 352 Glenn Mills  
9 till 10 am. Just show up.  
Call Dick Klekotka 610-692-4527

Saturday April 3<sup>rd</sup>. Propstoppers  
Sleighton Field Clean-Up and Fly  
10:00AM - (Bring your plane to fly)  
This date may be moved depending on  
weather/field conditions

Saturday May 15<sup>th</sup> Old Eagles Electric Meet  
Hope NJ. Join Dave Harding in the RV for  
a pleasant club trip to this enjoyable meet.

Annual Club Picnic and Fun-Fly, Saturday  
June 19<sup>th</sup>

### Regular Club Flying

At Moore and Sleighton Fields

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

## Propstoppers RC Club of Delaware County, Pennsylvania. Club Officers

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Propstoppers Web Site; [www.propstoppers.org](http://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

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## The President's Message

Dear Fellow Propstoppers

Join us April 3<sup>rd</sup> at 10:00 am for our  
Field Fix-Up day (weather permitting). If you  
rise early that Saturday join the "Propstoppers  
Breakfast Club" for breakfast before the work  
session 9:00 at the Country Deli. This work  
session is made easy by many helpful hands so  
we need everyone to help even if in a small  
way. Don't forget to bring your planes to fly  
after the work session. Also join us at our  
regularly scheduled meeting at the Marple  
Newtown Library April 6<sup>th</sup> many of the members  
have been attending and it makes for good  
business when we can make decisions  
together.

*Keith Watson, President*

## Minutes of the Meeting, March 2<sup>nd</sup>, 2004 at Marple Library

Vice President Dick Seiwel called the meeting to order at 7:30  
p.m.

The roll call taken by membership chair Ray Wopatek showed 33  
members and 1 guest present.

Minutes of the February meeting as published in the newsletter  
were accepted by the membership.

The treasurer's report was given by Treasurer Al Gurewicz and  
accepted by the membership.

### Old Business:

President Keith Watson discussed updates to the club's Web site.  
John Drake discussed building a secure area of the site that would be  
accessible to members by password. Here, members' names, phone  
numbers and e-mail addresses would be available. The membership  
debated placing club financial information on the secure site. They decided  
to table this matter until the site was fully developed.

Keith reminded us of several upcoming events-see the event list.

### New Business:

Mickey Callahan and Mark Burkemeyer agreed to host again the  
Club picnic and fun fly. This was tentatively scheduled for Saturday June  
19<sup>th</sup>.

The Sleighton field cleanup day was set for Saturday April 3<sup>rd</sup>  
depending on weather conditions. Check with the club's Web site or  
connected friends for final information.

### Show and Tell:

Bob Crowell showed a SIG little rascal electric ARF model. He said  
it went together very easily and flies well.



*Bob Crowell with his SIG  
Lil' Rascal electric ARF*

Paul Grothman showed off his Hobby Lobby Bonnie 20 with an AXI motor running on 10 cells. He said it takes off easily and has aerobatic capabilities.



**Paul Grothman with his Hobby Lobby Bonnie**

Al Tamburro showed an old single channel transmitter and receiver/escapement from the '60s. He is dying to put a model and see if he can make it all work.

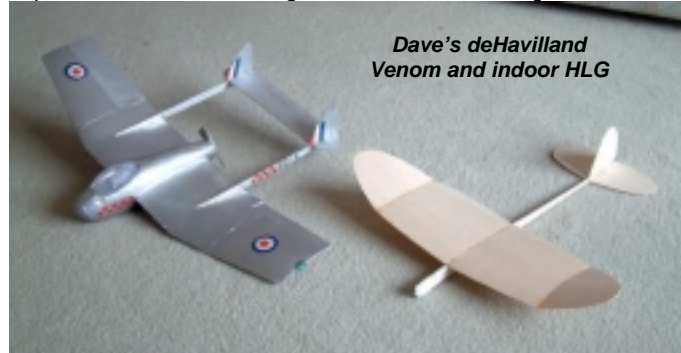


**Al Tamburro's ancient single channel RC gear. He sez he will put it in an airplane and show us how it was in the good old days!**

*Modeling in the UK; Part II*

Following three magnificent evenings I had a terrible evening of freeflight at the next one. Pity, as the hall was magnificent and the attendance really good. It was a freeflight only evening from 6 till 10, so plenty of time to get things to work well. This meeting was in a place called Potter's Bar, the town just north of London where we moved during the Blitz and where I grew up.

Given an hour or so on Saturday morning, before I left my mother's for the meet, I made an HLG for indoors. It was a simple model with modest undercamber, just the way I remembered the experts did it for low ceilings indoors, or so I thought!



**Dave's deHavilland Venom and indoor HLG**

It flew fine outdoors before I left so it was the first thing I tried in the hall. First toss halfway to the ceiling went well. It rolled out and flew with a modest phugoid (the up and down pitching motion when the CG is too far aft or the elevator / tail is too nose down. Subsequent tosses showed a stubborn tendency to just nose-over and dive vertically to the floor. Seems I had hit the magic combination of camber and ceiling height so that it was impossible to get any decent flight. I kept moving the CG forward but the Reynolds-Number-driven pitching moment overcame any trimming. (This occurs at very low speeds / Reynolds Numbers as the airfoil flow attachment and separation move around with speed. The higher the speed, the higher the nose-down pitching moment with a consequential need for further elevator up trim). A complete loss. (But with twenty-twenty hindsight I could have bought some tissue from Flitehook and covered the under side of the wing! Maybe I'll bring it home and see if such a fix would work.)

Next I tried the reliable twin-motored Avro Manchester. I had slow-charged all the electric freeflights, as the pocket charger seemed to give inconsistent results. Well, the Manchester refused to turn over when I threw the switch! Park another one.



**Twin motor indoor foam Avro Manchester**

Next the deHavilland Venom twin-boom jet (pusher) that had performed so well in the two prior meets. You may remember that in Tincum and SA it had a tendency that when it began to phugoid it would open out of the turn and phugoid worse, and so on. In the UK the halls were large enough that it remained in nice trimmed circles and flew impressively. So well in fact that I put in quite a bit of effort in searching out hobby supplies to put some scale finish on it, which I did. It looked really nice with the canopy fixed, as I had added a charging jack and switch so didn't need access to the battery connector. First flight was excellent, great

The meeting was adjourned at 8:50 p.m..  
**Richard Bartkowski, Secretary**

open circles close to the ceiling, but it began to phugoid and eventually the turn opened up and it hit the wall high up. The fall broke and folded one wing. OK, I'll fix it.

Next problem, the plastic bin with tools and parts smelled funny, Oh-oh, the two-ounce hot stuff bottle has spilled completely and almost everything is swamped in liquid hot stuff. What a mess to sort out and clean up. CA melts polyethylene bags so even though I had put my glues in a zip top bag, it had melted and spilled everywhere including inside the bag to swamp the other glues. So, not only did I have a mess on my hands, literally, but also I had no usable glue either, so model fixes could only be affected with the masking tape which had survived the mess. Strike one Venom.

Next I tried the trusty old Corsair. Works every time right? Well, no actually. You see I tried to follow Dick's rule to minimize potential trimming changes by gluing the battery to the wing, in place of the Velcro, which frequently allowed it to come detached. Hmmmm....guess I got it in the wrong place as the CG was too far aft and the model was unstable; either phugoiding or diving in. Move the battery? No glue!.....

Finally the Spitfire. Thankfully it flew well and with a little sorting out it made repeated flights at shoulder height. Now, I had been using the Selman small peak charger to top off the batteries and they seemed to lack power so I used a setup brought by another pair of electric flyers. They had a 12-volt gel cell with a 12-volt bulb connected to one terminal. To charge you just hooked up between the bulb and the other terminal. The bulb limited the current and indicated the charge process. Using this setup and holding the cells to measure temperature I was able to put in a full charge and the Spit went close to the ceiling. It stayed up for maybe two minutes at a time, to the chagrin of some of the EZ B flyers waiting for the air to clear of fast-movers.



So, with little time left and one box full of useless models and another full of glue I thought I would have a go at fixing the Manchester. Since I had closed up all the wiring within the fuselage it was necessary to perform major surgery to make a diagnosis and affect a fix. I sawed out the entire fuselage lower portion under the wing. Not sure what the problem was but I had used solid hook-up wire and the many impacts probably caused an intermittent short. Anyway, it seemed to work once I pushed and pulled on the wiring so when I threw the switch it motored with the authority that came from repeated charge cycles with no output. I launched and it immediately flew in nice tight circles slowly climbing to the high ceiling.....until it impacted a small jutting beam and dived vertically to the floor, sustaining further damage.

So much for my stuff, there were, of course, many others

flying all kinds of different indoor models.

I met and talked at length with the doyen of British modeling, Ron Moulton. Ron was a pioneer in so many modeling endeavors and was very active as a magazine editor and National organization official. At the indoor meet Ron brought and flew a box full of lightweight rubber models.



There were an assortment of electric powered models of various oddball configurations; most of them flew well. But the interesting models were once again small-scale rubber-powered scale models constructed from wallpaper foam.



This material is peculiar to Britain because of their history of building un-insulated houses! You see, the weather in the UK is mild enough that you can survive in an un-insulated house with one or two fireplaces and a hot water heater. One of the problems in this damp climate, with houses built this way, is that you get condensation inside the outside walls. Rather than making the whole house comfortable some people try to just deal with the condensation using just enough insulation to preclude it. The product of choice is a 2 millimeter thick, 3/32-inch, Styrofoam sheet installed under the wallpaper. This product has practically no structural strength, but these small models don't need much (read the article on Scaling Laws in the prior issue).

There were two masters of this art at this meeting; the first fellow had developed the process of finishing them with tissue, where the finish colors and details are first printed on the

tissue using a computer. The design is scanned or otherwise produced on the computer, then stretched or modified so that it will conform to the developed flat shape of the part. Then the tissue is held on a sheet of regular paper by using photo-mount spray and the whole thing run through the printer. Then the tissue is removed from the carrier and applied to the foam using another mist of photo-mount spray. Finally, the shapes of the parts are hand-worked from the flat sheets and joined, where appropriate, using foam-safe glue, like the UHU Por I mentioned in a recent post. (Available in the US under a different name).



*First print your finish on tissue, and then apply to the foam.*

This fellow had a whole fleet of rubber-powered models made this way. They flew beautifully.



*A fine collection of wallpaper foam indoor rubber-powered airplanes. All flew well.*

For me, the very best part of this event was meeting up with two former club mates that I had not communicated with or seen in fifty years.



*Fifty years on and still flying. Dave's old club mates are still at it.*

All in all, really a great evening, despite performance of my planes.

In between these previously scheduled indoor meetings I met up with a friend of my sister, who is a dyed in the wool RC modeler. Jim Frisby has been flying RC for about thirty years with another ten years on full-scale gliders. He is the main instructor and inspector for his club.

The Sevenoaks Club is an RC club, like ours with a beautiful field in the rolling hills of farm country, just south of London. Land use is highly regulated in the UK so you just don't find willy-nilly development gobbling up the countryside. Their field is part of a large estate and recently, when the owners of the estate passed on, the new owners wanted to develop it. "No way" said the local council, so their field may be safe for another thirty years (or three hundred!).

Anyway, when he heard I was coming to the UK he offered to take me flying at his field; flying his .91 powered Extra yet! Since he flies Mode 2, like us, I couldn't refuse, and so we did.



*You want me to fly that! With these frozen fingers! Dave is anticipating the thrill of high power aerobatics! Instructor Jim Frisby is nonplused.*

Now if you ever read an English Aeromodeling magazine you may notice that they frequently claim that the model in review was finished but they have been waiting three months for suitable weather for a first flight. Weather in England is, well, changeable and frequently poor. That is why so many Brits emigrate! Anyway, in the event, the wind was low and the frozen puddles weren't much of a barrier so we flew for a while. Notice in the picture above Jim is wearing gloves with the fingers removed.

Regardless, I could find no excuses so I flew the Extra. Wow, I have never flown such a model and it was a thrill. As Rusty has figured, I may be drawn into such a model, a slimer yet!

A major British institution is the Tea Break and although I don't drink tea the ceremony was held on this day primarily to thaw out my fingers on the hot mug. I noticed that the other flyers were following the same practice.

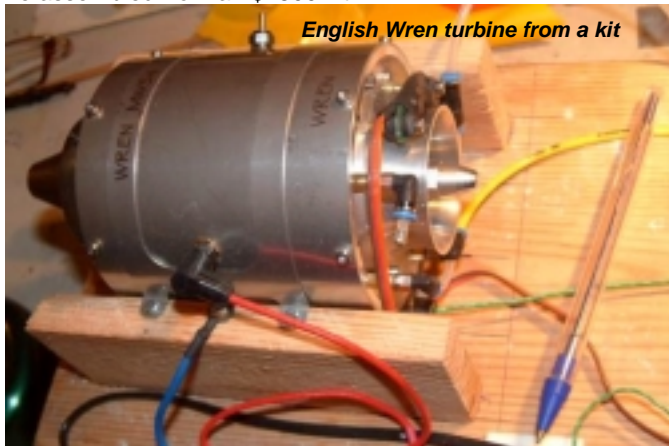
Jim also flew this interesting profile Me-109 with a hot .51 motor up front. It has no landing gear so he uses a custom built

dolly, which uses a second receiver and servo to steer the "tail wheel" on the takeoff run.



*Hot profile Me 109, or is it a Bf-109? Model uses a takeoff dolly with steering via a second Rx.*

Despite this fleet of great flying airplanes, his attention is now directed to his new 12 lb-thrust Wren gas turbine, which he assembled from an \$1800 kit.



*English Wren turbine from a kit*



*Hand held starter, remove before flight!*

The starting is done with a hand-held electric unit, which is removed on light-off. This keeps the model weight down. Watch this space for reports on development.

**Dave Harding**

### *Propstoppers Indoor Flying Report*

The final scheduled indoor meetings of the year were held in the Salvation Army and the Tincum School gyms in late February and early March. Dick Bartkowski continued his development of electric free flight models using large capacitors in lieu of batteries. Capacitors are more suitable than batteries for free flight models. The reason lies in the desired flight profile, where you would like to have the model take off then climb slowly to the ceiling and descend gradually to a landing. With most batteries, even small ones, when you have a propulsion system that achieves the take off the climb tends to be too high causing a collision with the ceiling. Capacitors better match the ideal profile. Here is Dick's latest capacitor plane; it flies perfectly using a geared pager motor and a much re-worked propeller.



*Dick Bartkowski's latest foam electric free flight uses a capacitor for energy storage.*



*Geared pager motor is available commercially. Works great with this model and capacitor.*

This is his latest capacitor plane, a Cub. Not because he wanted one you understand. Rather, he bought a family-pack of chicken, which came on a large yellow foam tray! Yep, that's right, the yellow foam made him do it.



*Another "meat tray" special by Dick Bartkowski. The yellow tray made him do it!*

**PROPELLER BALANCE:****WHAT YOU SHOULD BE LOOKING FOR**

Let's talk about balancing propellers. There is more to it than just throwing the propeller up on any one of the many different balancers and sanding the heavy blade until it is level. This, of course, is better than not doing anything and assuming it is balanced from the factory, but in my 27 years in this hobby, I can only remember three instances where I did not have to do anything before using the propellers. As a matter of fact, just the other day I picked up a 28x10 Bolly propeller that was perfectly balanced, and I did not have to adjust it. This is very unusual. Typically the propellers and/or the hubs are out of balance.

What to check for?

The following list (in order) shows what I check on every propeller I buy.

- Hole is in the center (most are)
- Hub faces are square (most are)
- Tip shapes are identical (usually not a problem)
- Lateral side-to-side balanced (usually needs attention)
- Propeller hub balanced (usually needs attention)

I know this sounds like a lot to check, but the destructive power of vibration on our airframes, radio equipment, and even engine fuel mix via fuel foaming are relentless.

Checking all of this is not as involved as it may seem. If the hole is not in the center or the hub faces are not square, I usually just take or send the propeller back and get a replacement. If the hole is not in the center laterally, it's usually not a problem to sand the long tip until it is the same length as the shorter one. If the hole is not centered in the hub on the vertical axis (with the blades horizontal), get a replacement. The bad news is checking that the hole is in the center and the hub faces are square are the hardest on the list to determine. The good news is they are the ones that are most likely to be right.

There are two things that are essential to accurately balance a propeller: the knowledge to properly check a propeller and a balancer that is accurate enough to allow you to achieve perfect balance.

I hope this article gives you the knowledge you need. The balancer is another issue. It needs to support the propeller hub perfectly centered on the balancing shaft, and the propeller needs to be able to swing through its entire arc friction free. If you cannot position the propeller blades vertically while on the balancer, you never will be able to finish this procedure.

Balancing a propeller laterally is only one small step toward achieving proper balance. I use a High Point Balancer, which is no longer made under that name. I think DuBro markets it now with a plastic base. It supports the propeller on a shaft with sliding cones and the shaft rests in the "V" formed by overlapping wheels about 2 inches in diameter. This is a friction-free and accurate balancer. There are others made by Master Airscrew and some that use magnets. The key here is friction-free. The less friction there is, the more accurate the results.

**Procedure**

1. Hole is in the center: This is rarely a problem and I usually don't check it unless I am doing a lot of work to bring a propeller into proper balance. To check the hole on the propeller blade axis, I find a bolt that fits the center hole snugly. Then I measure from this bolt to the propeller tip on each side. It is important that these measurements are equal. If one blade is a little longer, I sand it to match the shorter side. To check the hole from the other directions, I use a digital caliper. The measuring device doesn't have to be digital but it needs to measure in thousandths of an inch.

I usually draw three lines across the hub face. One line is

straight across the hub and 90° to the blades. The other two are 45° to this line so the hub looks like it has a straight line and an "X." It is important that each of these three lines go through the center of the hole. Measure the distance from the edge of the hole to the end of each of these line segments. All four measurements on the 45° lines should match if the hole is in the center. Both measurements of the straight line should be the same, but they may not be the same as the measurements of the 45° lines.

2. Hub faces are square: This check only requires a flat surface a little longer than the propeller and a good ruler. I prefer a metric ruler because it has greater resolution, yielding a more accurate measurement. Place the propeller hub face on the flat surface and measure the distance each tip is from the surface. If the hub is square, the tips should be the same distance from the surface.

Check both hub surfaces for square. Another way to check for square is to look at the tips while the engine is idling. If the hub faces are not square, the tips will be out of track. Checking this at idle is important because propeller flex under load will affect the observation. Don't stand in line with the propeller arc above an idle for safety reasons.

3. Tip shapes are identical: Tip shapes should be identical as well. I just put the propeller on a piece of paper and trace the tip shape with a sharp pencil. Place the other tip on this tracing to check that both tips are the same. If they are not, shape the larger tip to match the smaller one. Although the two are usually very close and rarely need attention, it is something that should be checked.

4. Propeller hub and lateral balance: This problem is often overlooked. Hub balance is just as important as lateral balance. In fact, you cannot achieve proper lateral balance until the hub is balanced.

To check hub balance, position the propeller on the balancer so that the blades are vertical. If the propeller swings to one side, most likely the hub is heavy on that side. I usually test this two or three times to be sure the results are consistent.

To correct a heavy hub condition, you can sand the hub flat on the heavy side or take a 3/16 drill bit and drill shallow holes on the heavy side until you get as close as possible. If the propeller does not move when either tip is in the vertical top position, the hub is close enough. I also check the propeller in the 45° positions. Heavy hub and/or lateral balance will affect propeller movement here.

Position the propeller on the horizontal and check for a heavy blade. If the propeller balances horizontal, rotate it 180° and check it again. Heavy blades should be corrected by removing material from the front face of the propeller. Do not remove from the back side because the propeller will have a different pitch on one side. Be careful to preserve the airfoil shape while removing material. Go slowly. Sometimes a little goes a long way.

When the propeller balances horizontally, it is time to recheck the hub and fine tune if necessary. Place the propeller in both 45° positions. If it rotates consistently to a certain position, the hub needs attention at the low point. When the propeller is balanced, it will stay in any position you put it in on the balancer. Do not accept anything less. Do not try to correct an out-of-balance hub by removing material from a blade face.

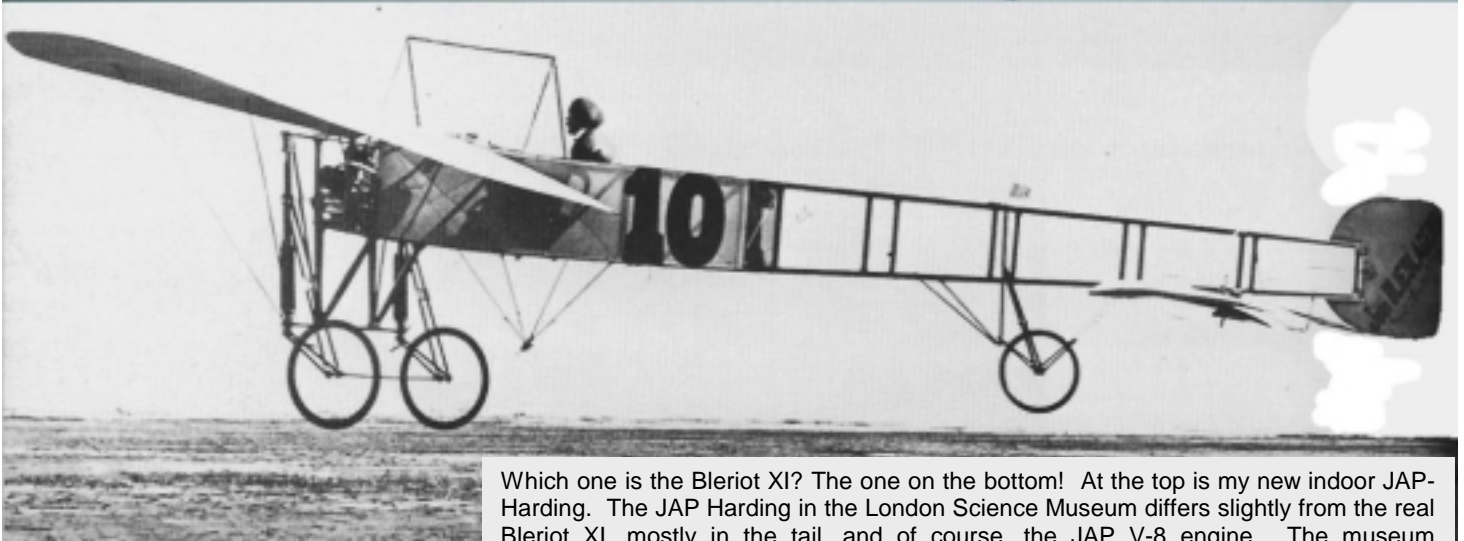
*Technical editor's note: If you remove any material from a wooden propeller, you must reseal the wood and you must add the same amount of sealer to all blades so that balance is retained.*

Lloyd Sullivan

From Propwash, Propnuts Radio Control Model  
Airplane Club, Highlands TX, Paul Shaffer, editor

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# Propstoppers R.C. M.A.C



Which one is the Bleriot XI? The one on the bottom! At the top is my new indoor JAP-Harding. The JAP Harding in the London Science Museum differs slightly from the real Bleriot XI, mostly in the tail, and of course, the JAP V-8 engine. The museum conjecture is that my forebears probably stole the plans from Bleriot! The Bleriot XI is probably the most important aircraft of the early period after the Wright Flyer, from which it copied wing warping for lateral control. It set the preferred configuration of airplanes that we follow to the present day. Designed in 1909 after ten failures, which nearly bankrupted monsieur Bleriot, the XI was an instant success. In 1909 it was the first airplane to fly the English Channel. Later that year Rodman Wanamaker brought one to the US and in October of 1910 J.A. Drexel in Philadelphia flew his Bleriot XI to a new World Altitude record of 9,449 feet. Over 1000 Bleriot XI's were built. Many of them used to train the pilots of the First World War. My model, at 1inch to the foot, is 30-inch span and weighs three ounces. Motor, prop and servos are GWS. Power is from two 240-mah Lithium Poly cells. It flies great in a very slow scale-like manner.

*Dave Harding.*



The London Science  
Museum's JAP-  
Harding

***Sleighton Field Fix-Up Day***  
***This Saturday, 3<sup>rd</sup> April, 10 am.***  
***Or join us for breakfast first***  
***9 am at the Country Deli on Rt. 352 in***  
***Gradyville.***  
***Bring your gloves and yard tools.***  
***And bring an airplane to fly afterwards.***

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