

The Flightline

Volume 30, Issue 1

Newsletter of the Propstoppers RC Club

January 2000

Editorial

The Third Millennium

Dave Harding

Like many of you, I consider Aeromodeling A very special hobby. It has sparked my imagination and even my professional endeavors all my life. As I approach retirement I believe it is time to give something back as well as step up the pace.

So many models, so little time!

It is, therefore with pleasure that I take the baton as the editor of the club newsletter.

I will need your help in making this something you look forward to each month so when I bug each of you to contribute don't complain.

You can reach me at 610-872-1457 home, 610-591-8700 work and davejean@erols.com.

Continued on page 3

Technical Meeting on Micro Unmanned Air Vehicles.

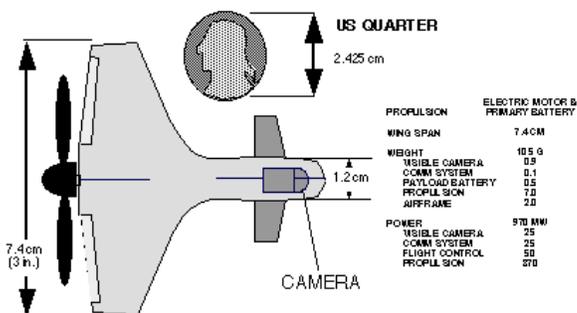
SAE / American Helicopter Society dinner meeting and briefing at the Towne House on Wed 19th January

The small speck in the sky approaches in virtual silence, unnoticed by the large gathering of soldiers below. In flight, its tiny size and considerable agility evade all but happenstance recognition. After hovering for a few short seconds, it perches on a fifth floor windowsill, observing the flow of men and machines on the streets below. Several kilometers away, the platoon leader watches the action on his wrist monitor. He sees his target and sends the signal. The tiny craft swoops down on the vehicle, alighting momentarily on the roof. It senses the trace of a suspected chemical agent and deploys a small tagging device, attaching it to the vehicle. Just seconds later it is back in the sky, vanishing down a narrow alley. Mission accomplished....

Sound like science fiction? This scenario may be closer than you think if success is achieved in the development of a new class of flight vehicles, the Micro Air Vehicles (MAVs), by the Defense Advanced Research Projects Agency (DARPA). The high level of current interest in developing a class of very small flight vehicles is the result of the nearly simultaneous emergence of their technological feasibility and an array of compelling new military needs, especially in urban environments.

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One of MIT's MAV Designs

Micro UAV's continued.

DARPA will develop a new family of Micro-Air Vehicles (MAVs)

Continued on page 3

Propstoppers Model Airplane Club Meeting Minutes

December 7, 1999 Meeting
Russell Neithammer, Secretary

Vice President Dick Seiwel called the meeting to order at the Marple Library. There approximately 20 members and 2 guests (Al Haftel and Warren Berry) present (no roll call was taken).

The minutes of the November 1999 were read by Secretary Rusty Neithammer and approved by the membership. Since the November minutes were not published in the newsletter, copies were distributed to the membership at the meeting.

Treasurer Al Gurewicz gave the treasurer's report with income of \$12.00, expenses of \$148.00 and a new balance of \$2012.19 reported.

Old Business

Membership renewals will be taken at the January and February 2000, meetings, or mail remittance to Bud McClellan, along with a copy of your AMA renewal and a stamped, self-addressed envelope.

Dues for the year are \$55.00

President Mike Black distributed club shirts to those who ordered them.

Al Tamburro met with Mahlon Rossiter from Thornbury Township to determine the desired location for the white oak tree. Chris Catania has obtained the tree from the nursery, planted it, and has generously absorbed the cost. The township office has made their water faucet available so that anyone from the club can fill a bucket to periodically water the tree.

It appears that the township has reconsidered the sign at the top of the Squire Cheyney Park driveway, so that project is on hold indefinitely.

The night flight will be rescheduled for sometime in the spring, as there were no members participating.

There are a few hats left (\$6.00 each), and there are also a quite a few raffle tickets for the Brightstar ARF (\$5.00 each). See Al Gurewicz.

New Business

The annual club auction will be held at the February 2000, meeting.

Auctionmeister Al Tamburro will conduct the auction the same as last year, that is:

Auction table items: Absolute (no minimum)
5% of the sale price goes to the club treasury

Sale tables items: Tagged with price
5% of price goes to club treasury

Sale table items may be auctioned if desired by the seller, in which case 10% of the selling price goes to the club treasury.

Mike Black showed some adds and other items received in the mail. One of these is a catalog of aircraft related gift items from Wright Brothers (800-543-8633)

Bob Crowell has a new email address
<rc101@home.com>

The URL for Bob Kuhn's web page is
<<http://home.earthlink.net/~kuhnrl/>>

Al Tamburro proposed a club project to build a large utility type plane, for payloads, photography, glider towing, etc.

A Y2K fly-in is proposed for Saturday, January 1, 2000, New Year's day – no excuses for weather. Make sure your computer radios are fully compliant.

The 50-50 winner was Del Glennon.

Break for coffee and doughnuts.

Show and tell

Al Tamburro showed his Fox 120 twin – simultaneous firing two-stroke engine. It is essentially two 60's back to back, twin carbs, swings a 16-6 at about 12,000 RPM, late 70's vintage, cost about \$275 new. Many parts are common to the Fox 60 still in production.

Phil Davis showed a magazine article featuring micro RC planes being developed for military use. On the same subject, Dave Harding, who is president of the local SAE (Society of Automotive Engineers) chapter, plans to feature this topic at his next SAE meeting, and will invite the club to attend.

Vice President Dick Seiwel adjourned the meeting at 8:45 PM. 

Editorial continued from page 1.

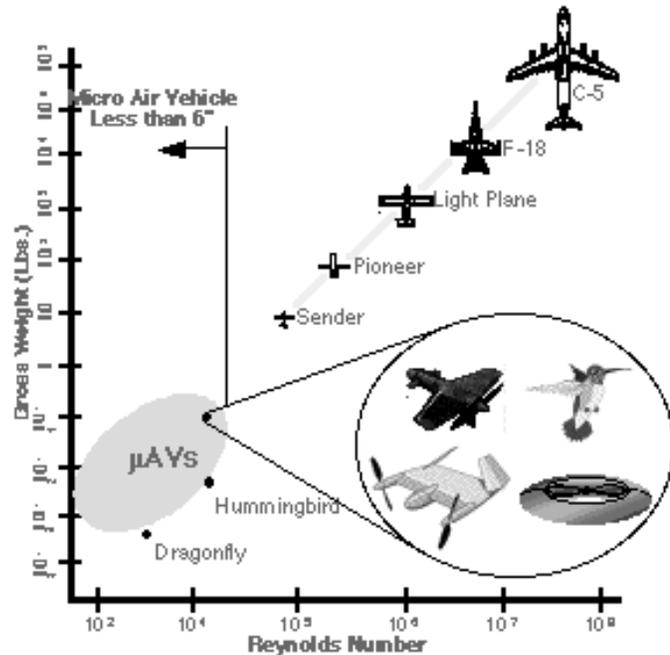
Here are some of the topics I thought we might like to follow;

Propstopper's Newsletter
Possible Topics

- › Meeting Minutes
- › President's Message
- › Editorial
- › Field Topics
- › Maintenance
 - Field Operations
 - Improvement Plans
 - Township Relations
- › Technical Topics
 - Aerodynamics
 - Structures
 - Propulsion
 - Radio
 - Control
- › Reports
 - Meetings
 - Fly-ins
 - Contests
 - Trade Shows
- › Product Reviews
- › Calendar
 - Club meetings
 - Club field events
 - Other club events
- › Treasurer's Report
- › Membership
 - Roster
 - e-mail addresses
- › Member News
- › Member Projects
- › Need Help
- › On The Net
 - Club Web Page
 - Discussion and Newsgroup lists
 - Favorite web sites
 - Web technology
- › Club Projects
- › For Sale or Trade
- › My Favorite Tool (and how I use it)
- › Commercial Advertisements
- › Well, I need your feedback and help, so I'll just take my phone off the hook and wait. 🐦

Micro UAV's continued from page 1

that are at least an order of magnitude smaller than current flying systems (less than 15 cm / 6 inches in any dimension).



Size and Reynolds numbers of

MAV's

The MAV program will focus on the technologies and components required to enable flight at these small scales, including flight control, propulsion and lightweight power, navigation and communications.

These will build upon and exploit numerous DARPA technology development efforts, including advanced communications and information systems, high performance computer technology, Microelectro-mechanical Systems (MEMS), advanced sensors, lightweight, efficient high density power sources, and advanced electronic packaging technologies.

The meeting

The DARPA MAV program manager, Sam Wilson will brief the SAE and AHS members at a dinner meeting at the Towne House in Media on the evening of Wednesday 19th January.

Cocktail hour starts at 5:30, dinner at 6:30 and the briefing at 7:30. Propstoppers are welcome. The dinner cost is \$20 with a choice of Prime rib, Baked Salmon and Pasta Primavera. You must call Maria McGuire at 610-591-8455 or e-mail her at maria.r.mcguire@boeing.com to make your reservation. Do it early as this will be a sell out although you must know that we expect you to pay if you cancel late. 🐦

Calendar of Events

Millennium Fun Fly

1 January 2000

12:00 pm core event time?

Dallett Field

Club Meeting

4th January 2000

Place Marple library

Time 7:30 p.m.

Regular club meeting

IMS Show in Pasadena

14, 15, 16 January 2000

Well, you never know

Micro Unmanned Air Vehicles – Briefing and Dinner

19 January 2000

Place the Towne House, Media

Time 5:30

See the article in this newsletter

WRAM's Show 2000

25, 26, 27th February 2000

Place West Chester, New York

Trade Show.

Regular Club Flying at Dallett Field

Every Saturday and Sunday weather permitting

Daily 10 am til Dusk

Saturday 10 am til Dusk

Sunday 12 pm til Dusk

President's Message

Mike Black

Dear Fellow Propstoppers,

I was unable to contact Mr. Rossiter last week as he had eye surgery. I spoke to him on Monday and all is OK.

Al Gurewicz mailed a check to the township and to the Moore girls for the rents. He also sent the check for next years field treatments. We get a discount by paying early.

I hope everyone is planning to attend the Jan. 1, 2000 any weather fly at Dallett Field. Let's get out there and get that first flight of 2000 in early.

I hope everyone receives that kit, motor, ARF, radio, tool gadget, gizmo or whatever from Santa. We will be looking forward to seeing them completed at Show and Tell in the spring.

Everyone seemed to like the club shirts. Several members have asked about a reorder. We will keep a list and when we get more than a dozen I will reorder, again on a prepayment basis.

Don't forget to get ready for the February auction. The holidays are a great time to prepare for such an event, because most of us get a little time off from our jobs.

See you at the field for the Jan. 1 fun fly and if not at the meeting on the following Tuesday.

Mike



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http://members.xoom.com/_XOOM/propstoppers/index.html

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Control Surface Removal and Re-Installation

Russell Neithammer

Here is what I've tried for removal and re-installation of control surfaces hinged with flexible mylar "CA" type hinges. You may find this to be necessary when damage occurs to a hinged control surface. I find that such damage is more easily and better repaired by removal of the damaged control surface from the plane, followed by complete removal of the covering from the damaged control surface.

First, cut through the old hinges with an Exacto knife and remove the damaged control surface. Score both sides of the hinges flex back and forth a few times and the hinges will part.

Usually, you will want to remove the covering from the damaged part to allow access to the damage – if this is the case, remove the covering now. Then, make your structural repairs, including reinforcement where required. After completing the structural work, apply filler and sand the repaired area smooth.

There are several options for replacing the hinges and re-installing the control surface.

The simplest is to install new hinges at locations that are next to the locations of the original hinges. If this option is viable in your case, use your normal method to cut the new hinge slots in the control surface and in the fixed surface it attaches to, re-cover, re-hinge, and you're done.

Usually, I prefer or have no choice but to replace the hinges in the original locations. So, removal of the old hinges from the slots is necessary.

I've tried several methods. What I've settled on is this:

First (before re-covering anything), mount a circular saw blade in your Dremel tool (you do have one, don't you – they're worth their weight in gold, IMHO). Then, start the Dremel on high speed and, holding the tool so the blade is in line with and parallel to the old hinge stub, CAREFULLY plunge the spinning saw blade directly into the old hinge, so you are re-cutting the hinge slot. You'll be cutting into the old Mylar hinge material, and this will make a lot of nasty smelling, eye/nose burning, and acrylic resin smoke. So, protect your eyes and ventilate appropriately. Of course, the slot will have a round bottom, and most likely will not be deep enough for hinge installation.

To finish cutting the slot, take your Great Planes hinge slotting tool (other item worth its weight in gold), turn it on, and plunge the blade into the slot you started with the Dremel. This will finish the job nicely. Sometimes, a little work with the Exacto knife is necessary to clean out any remaining hinge material.

Check the fit of the new hinges, recover, re-hinge, and declare victory!

Other methods I have tried that don't work as well are:

Re-cut the slot with the GP hinge-slotting tool only. The problem with this is that the old hinge and the CA holding it in are very hard, and will usually deflect the flexible blades of the GP hinge-slotter, so it's hard to

get an accurate slot, and it really beats up the blades on the hinge slotter.

You can also try cutting along both sides of the old hinge stub with your Exacto knife, and, once you free it up enough, yank it out with a pair of needle nose pliers. Use the GP hinge slotter or your Exacto knife to clean up the slot. This will more than likely leave a slot that is too wide for proper hinge installation.

If this is the case, fill in the slot with 1/32" balsa, and re-cut the slot into the new balsa with your Exacto knife or the GP hinge slotter.

Another option for when the new slot is too wide would be to epoxy the new hinges in. The epoxy will fill any gaps between the hinge material and the surrounding wood.

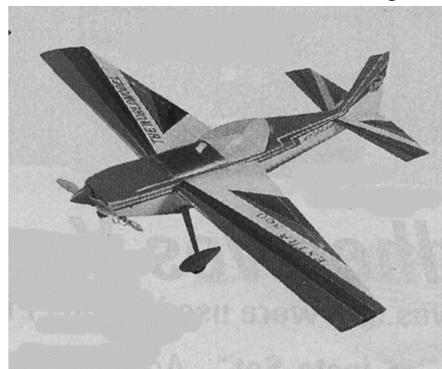
A few final tips:

As with any new construction, always give the re-hinged control surface a pull test to confirm the adequacy of your hinge installation.

I made a fence attachment for my GP hinge slotter, more or less as described in a recent issue of Model Airplane News. This gives great control and almost foolproof positioning of the blades when using the tool. As a result, the slot positions are accurate and consistent.

Although, I have not yet tried it, the use of a router attachment on the Dremel would, I should think, similarly aid in positioning the circular saw blade when making the plunge cuts.

Finally, the main reason for my having to make these repairs has been due to breaking of the portion of the hinged control surface which projects beyond the fixed surface (i.e., the balance tab on the rudder of my Extra 300S). To help minimize the possibility of such breakage, strengthen it by installing spruce doublers onto the inside edges of the balsa leading and trailing edges of these parts, from the outer end of the part to a point at least as far inboard as the first hinge. 



Stall Speed is a Misnomer

By Bruce Cronkhite

This short article is prompted by a batch of traffic on the EFLIGHT mailing list on the Internet related to the difficulty of determining the correct landing speed for a model.

The reason this is difficult is that there is no such thing. There is, however, a correct approach Angle of Attack.

Many people worry about slowing their model down to a reasonable approach speed for fear that the model will stall. Consequently they fly too fast on approach, and run off into the mulch, or the local equivalent.

The U.S. Navy had the same problem when trying to get pilots to land on carriers. It is critical that the airplane approach the deck at the slowest possible speed consistent with some margin above stall to account for turbulence and other unavoidable occurrences while on final.

The Navy discovered that while their airplanes of different sizes and configurations had widely varying stall airspeeds, they all stalled at very nearly the same *Angle of Attack*. This is regardless of type, number of wings, or prop or jet. This angle of attack is very near 15 deg. Not pitch angle, but *angle of attack*.

So the Navy developed a system of measuring and referring to AOA by a system numbered in *Units*. In this system a 'Unit' is approximately 2 deg, modified by some small quantities determined from the flight test data on the aircraft itself.

Now here's the magic. ALL Navy airplanes stall at 30 units AOA. Sure. There are some Navy pilots who can keep an airplane under control at higher than 30 units but they probably graduated from test pilot's school, and were working hard the whole time.

Well, what does that mean to us? Ready for this? Learn to see your model's angle of attack on final approach. You certainly can see 15 deg. so if you are less than that you *won't stall* if your model is aligned along your approach slope, you're going too fast at too low an angle of attack

That is the reason that I tell my students to keep the model fuselage level with the ground on final approach. This is a neat crutch that stabilizes the AOA at a reasonable number less than stall, but higher than supersonic, regardless of the angle of approach.

Try it. 

From the Silent Electric Flyers of San Diego Newsletter

On The Web

Dave Harding - temporary columnist

The current maturity of the World Wide Web, WWW, is changing our hobby as well as the rest of the world.

Although it seems that only about twenty percent of the Propstoppers membership is currently "wired" this is bound to grow and I will explain one way to allow access to those who have not yet made the plunge.

Since mail order changed the local hobby shop scene years ago we have become used to mail ordering our supplies, indeed, this is one of the joys in reading the monthly magazines.

Well now shopping is an 7 / 24 proposition on the web. Most of the stores we usually do business with now have their own web pages. Some better than others, but very useful none the less.

One of the better sites is Tower Hobbies. They have various ways to search for what you need (or want) and their inventory indicates whether the item is in stock or when it is expected.

Problem with this is that you can do this late at night when the wife is in bed and you are too tired to trust your skill at trimming Monocoat.

What is wrong with that you say? Well, there you are, drink in hand after a long day, scrolling through the section on the new lightweight servos. You really need some, don't you? Sure you do and all you have to do is click on quantity and enter your credit card. Presto, you bought it. Hope you can explain the charge when the bill hits!

My favorite use of the Web is in communicating with the interest groups. There are several ways to do this. The simplest is to "subscribe" to a Newsgroup such as;

rec.models.rc.air

The Newsgroups, there are 35,000 of them, are a forum where people post messages and others, who read the messages reply. So there are worldwide groups with members numbering, in the thousands, who respond to these messages. What is the content? Almost anything, including for sale, how do you do this? Where do they fly in xxx? "I am visiting xxx can you recommend a hobby shop? Etc.

The Newsgroups are accessed usually through your e-mail provider. Anyone who has such

access can read the messages whenever they log on. A similar but tighter group of people "subscribe" to a list server such as Eflight, Freeflight, Slowflight etc. To do this you send a message to an address specified and the response is that you receive e-mails to your e-mail account. In the case of Eflight, there may be up to one hundred e-mails a day although you can get them in digest form. These e-mails work much the same as the Newsgroups but it is more exclusive because it is harder to find them! You sort of have to be in the know! As it turns out, many of the heavy hitters in each area subscribe to the lists and you can get World class advice in hours. That is the real advantage of the web, information flows in hours, WorldWide.

The third area where the Web can help us is in research. Say you want to build a model of the JU-88 (I do!). The web has several "Search Engines" which will follow your every command. Get into "Yahoo" and type search for JU-88 and you will be presented with a long list of web sites, which have some form of reference to the JU-88. Amazing, one click of the button and the information flows.

It also works another way. Say I took some pictures at the Arizona Jet Rally (I did) and say I want to make them available to ...whoever. I would post them to a web site. Bob Kuhn has a web site and he posted pictures he took at the Propstoppers Picnic. Anyone with access to the web can not only view them but can also download them to his own computer. Try this URL;

<http://pm6.ps.filmworks.com/SfwOnline/photomail/PMDownload.asp?p1=11942477>

It will lead you to the pictures I took at the Jet Rally. Actually, we use Seattle Film Works to process our film. They process the film, post them to their web site, send us an e-mail including the URL of the latest roll and file them on their server FOR LIFE! That's right, our films will be preserved on the Seattle Film Works server, accessed by the web so we can download them digitally whenever we want. Also we can send them to who ever we want. Pretty neat eh?

OK, OK, so eighty percent of you don't currently have web access. Well, you don't need it to do what I have described. You can do it at your local library (or web café!). If you go to your library, have them log on for you then go to Yahoo. Yahoo will let you sign up for free e-mail and you will be able to access it from any computer connected to the web. This will allow you to subscribe to the interest groups I discussed above.

You do it by sending an e-mail with the word subscribe in the message to;

Eflight@ezonemag.com for Electric Flight
soaring-request@airage.com for Soaring
SFRCML@adc-lists.apple.com for Slow Flight

To be continued.



Grant Calkins, Westlake Villiage, CA with his electric ducted fan Illushin-30 at the Arizona Jet Rally



Gregg Moore, Colorado, with his 88oz F-86. Aveox 1409/2Y, 12 x 2000ma cells. Flies like a jet!

Well, if you don't want electric pictures, send me alternatives! Ed.

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Or is it Dallett
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