The Flightline

Volume 40, Issue 9 Newsletter of the Propstoppers RC Club AMA 1042 September 2010

President's Message

This month flew by, but the field has had some heavy use which is great. The helicopters are making a big hit Jeff Frazier. is doing fine job of building these great helis and training new members with planes. Thanks Jeff.

The new Gateway Community Church, Christian Academy's new tenant, has asked us for the use of the field Sat Oct. 9 th 11:00 till 6:00 PM. for Horse and Pony Cart rides. So we offered the use of the field for that day this could help us in the long run. I'm having a meeting with them maybe I can work in some show time with the planes and helis; what do you think?

The September meeting at the library is a good time for show & tell so bring them on.

NOTICE; October is the meeting for Board nomination's with declared candidates offering their positions in November. If your thinking of running that is the time to do it. ARTICLE V111 in the bylaws, on the website.

Dick Seiwell

Minutes of the Propstoppers Model Airplane Club

August 10, 2010 at the Christian academy field on a warm and humid beautiful calm evening

Call to order by President Dick Seiwell took place at 6:51 PM
Roll call showed 13 members present
The treasurer's report was given by Pete Ottinger without comment

Old Business:

The club discussed the idea of field maintenance and crabgrass control. They voted to give the president the authority to move ahead with this.

New Business:

The Thursday night flying has become even more popular. Several of the helicopter flyers if have asked for an additional evening. The club agreed that Wednesday evening will be helicopter night where they will have first preference for flying. Thursday will remain as is where the fixed wing will have preference. Of course all are welcome any night but this program will keep some order on the field.

The club discussed the idea of forming the helicopter subgroup within the club. Interested members would join the national organization and form a group within Propstoppers. Those present agreed that this would be a good idea.

Adjournment took place at 720 PM so that the members could enjoy a beautiful evening of flying.

Richard Bartkowski

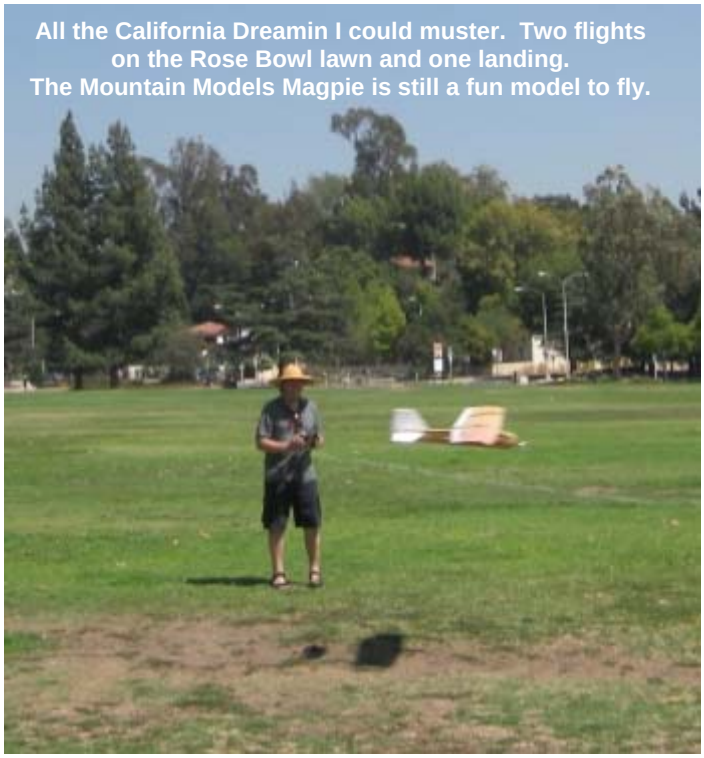
Agenda for September 14th Meeting

At the Middletown Library

Doors open 6, meeting 6:30 till 8 p.m.

1. Membership Report
2. Finance Report
3. Candidates for Office
4. Indoor Flying Plans
5. Show and Tell

INSIDE THIS ISSUE



All the California Dreamin I could muster. Two flights on the Rose Bowl lawn and one landing. The Mountain Models Magpie is still a fun model to fly.

Calendar of Events

Club Meetings

Monthly Meetings
Second Tuesday of the month.
Middletown Library
at 6:00, meeting 6:30 – 8 pm.

14th September

Tuesday Breakfast Meeting
Tom Jones Restaurant on Edgemont Avenue in Brookhaven.
9 till 10 am. Just show up.
Flying after at 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

Special Club Flying

Saturday mornings 10 am
Wednesday evening helicopter in the summer
Thursday evenings in the Summer
Tuesday mornings 10 am weather permitting after breakfast at Chester Park.

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.

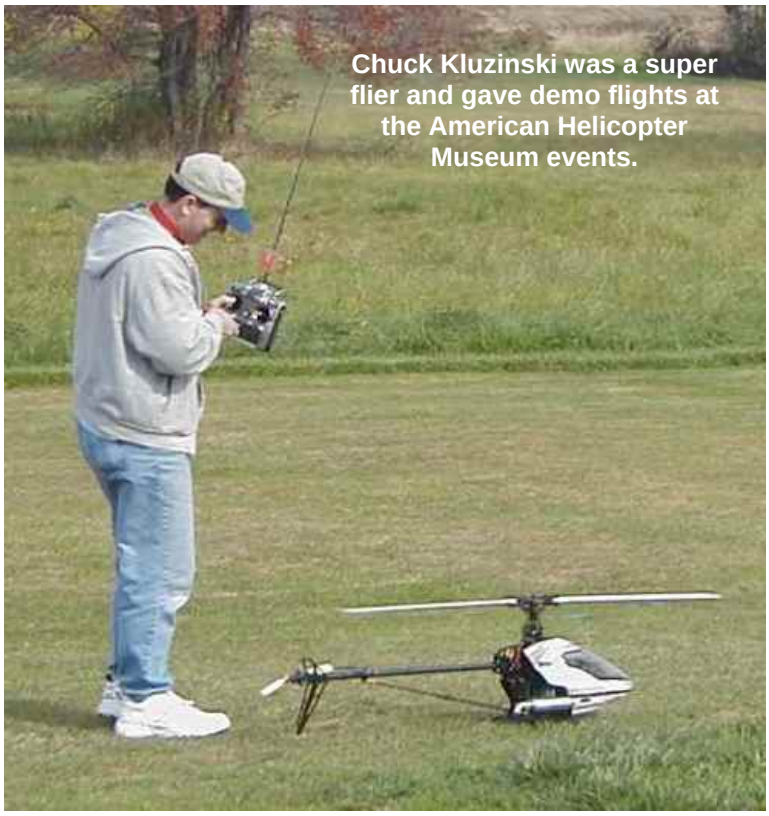
Propstoppers RC Club of
Delaware County, Pennsylvania.
Club Officers

President Dick Seiwell
(610) 566-2698 reslawnsi@verizon.net
Vice President Dave Bevan
(610)-566-9152 oldave@icdc.com
Secretary Richard Bartkowski
(610) 566-3950 rbartkwoski@comcast.net
Treasurer Pete Oetinger
610-627-9564
Membership Chairman Ray Wopatek
(610) 626-0732 raywop@juno.com
Safety Officer Eric Hofberg
(610) 565-0408
Newsletter Editor and webmaster
Dave Harding
(610)-872-1457 daveiean1@comcast.net

Propstoppers Web Site; www.propstoppers.org

Helicopters at the Propstoppers

From an article originally published here in 2002



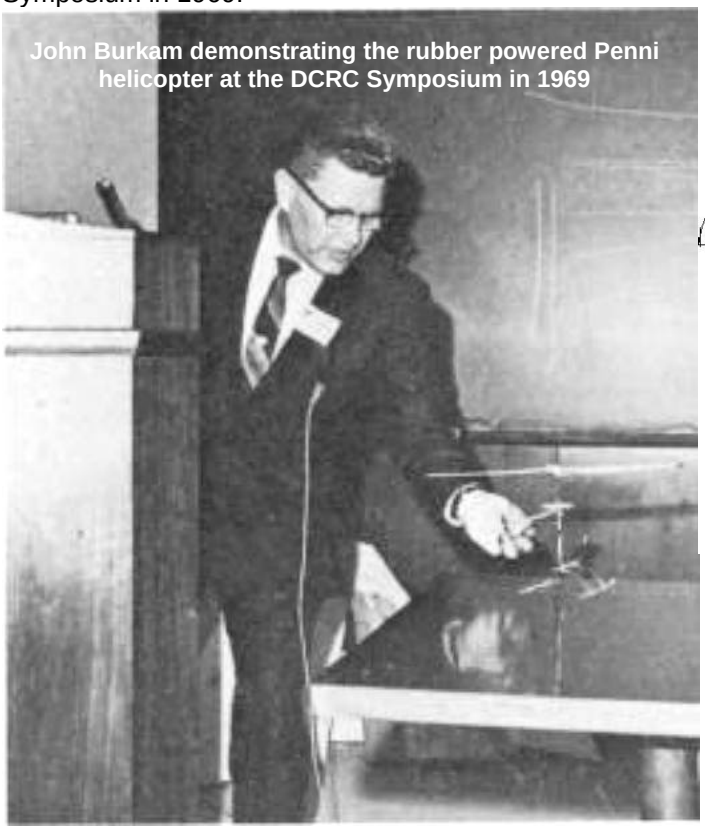
Chuck Kluzinski was a super flier and gave demo flights at the American Helicopter Museum events.

We are blessed with such diversity in our club. We have many "old time" flyers who can count their time in the hobby in large fractions of a century as well as fresh young folks who are dipping their toes for the first time and everyone in between. With this basis comes the tremendous diversity of our hobby. Many come from the early free flight and control line fields and some have their roots intertwined with the very birth of practical RC. Others are expert in a relatively new form of our hobby; RC helicopters.

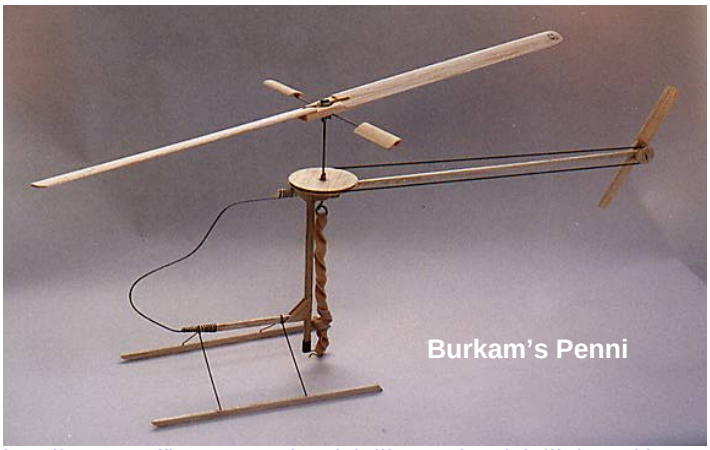
In my earlier days with Boeing I was privileged to be among an incredible group of modelers who also happened to be leading helicopter technologists. Indeed, I began my career working with Ed Glatfelter Sr. who had just finished and flown his second full size helicopter. The first a conventional single rotor machine with a Continental 65 engine. This helicopter is today located in the American Helicopter Museum in West Chester. The second machine was a co-axial twin rotor with the rotors mounted beneath the fuselage! A third rotor was gimbaled at the top to provide a control vector. This machine had a Mercury 100 hp outboard motor.

Two other engineers stood out; John Burkam and Bruce Blake. These guys were building and flying (in the design office yet!), real shaft driven helicopter models, not just Chinese tops (the two rotor rubber band toys). Now to really comprehend these feats you must understand that most "real helicopters" are inherently unstable (even today). This means that either the pilot must continuously make correcting inputs to the controls or they must be electronically stabilized. John and Bruce built free flight helicopters that were stable!

Among the models I remember are some that you will too. John built a single rotor rubber powered helicopter with a belt driven tail rotor. It flew beautifully indoors or out. You know it as "Penny", John's first daughter's name. This model has been available commercially for years yet you never see his name on it. He built it as a stability demonstrator for a lecture he gave to the DC RC Symposium in 1969.



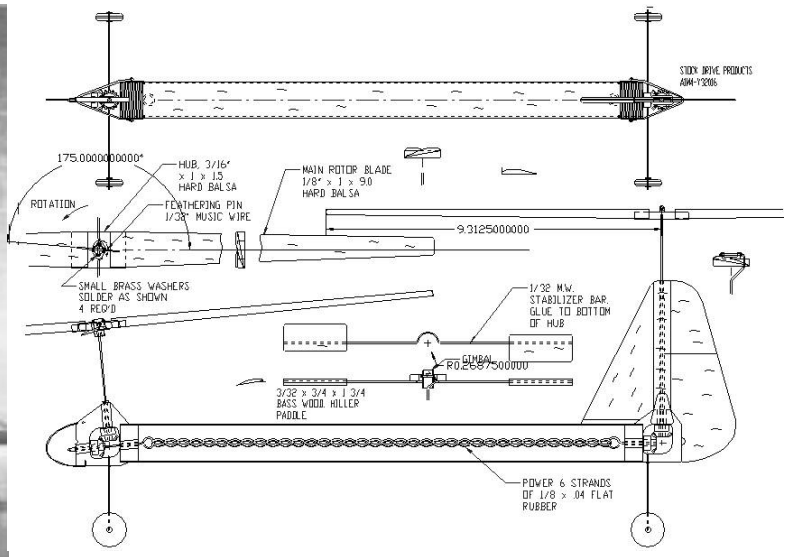
John Burkam demonstrating the rubber powered Penni helicopter at the DCRC Symposium in 1969



Burkam's Penni

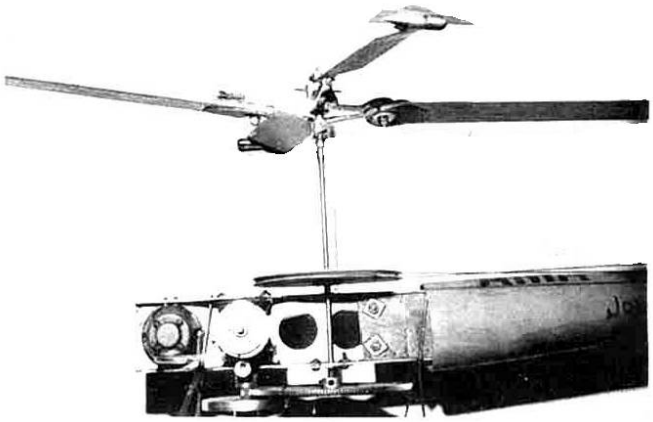
http://www.gryffinaero.com/models/ffpages/models/ff2/penni.html

The second astonishing model was a rubber powered tandem rotor model, just like the Chinook. It regularly flew across the engineering floor as we worked. An amazing achievement as both the Chinook and Sea Knight are unstable. The guys solved the problem by putting a teetering rotor on the forward end and a hingeless rotor with a gyro bar on the aft end. This resulted in both pitch and roll stability. The drive had a rubber motor in the fuselage, which drove a bevel gear at each end thus driving both rotors with the same torque. A large aft fin provided directional stability.



Prior to these efforts John built was another single rotor design with a belt driven tail rotor powered with a geared Cox .049 motor. Now because this was a free flight glow powered model you needed to solve the problem of what to do when the engine quit. John made a simple overrunning drive mechanism that changed collective pitch automatically when the engine stopped. This allowed the model to autorotate to the ground for a soft landing.

John finished this model in the spring of 1965 and first flew it in my backyard.



It initially had a limited flight capability, just hovering close to the ground. Subsequent flights were made in the fields of what is now Ridley Creek State Park. There the model gained greater altitude but still wasn't balanced. Flights would start in a slight hovering climb then tip into forward flight where the stability caused the model to pitch

up, yaw 180 degrees and dive back towards the ground. The same stability factor, which caused the initial upset, would then cause it to pitch up and swap ends again and so on until it would hit the ground. Mostly this was a balance problem that John fixed.

But now was time for the Chicago Nats that we both attended. In those days there was a contest for free flight helicopters. All of the contestants flew the pinwheel type model, where a motor, equipped with a normal propeller, is mounted on a large rotor pointing up. You start the motor and the prop spins one way and the rotor and motor spin the other way. This is actually quite stable but nothing like a real helicopter. John's model was truly unique at this time, a real helicopter!

We arrived early in the morning to make the first of three attempts. The competition was for duration of flight. The first flight resulted in the model just sort of hovering at low altitude for a short while whereupon it settled into the ground. Thinking about this we realized that the weather was a factor. It was in the low 90's so the motor was not putting out the same power as in Philadelphia.

It seemed to be lugging. We were not able to change the gear ratio so I suggested that we clip 1/2 inch off each main rotor tip. On the second flight things were much better, the motor seemed to be more on song and a greater altitude was reached but still it eventually settled back to ground with the motor still running.

By this time John's unique model was receiving some attention and Ed Sweeney, who had just acquired American Modeler magazine, was asking John if he could buy the design for publication. John said he would sell it and Ed. stood by to watch the third and final attempt. Well, although I didn't then know the racer's credo "if a little is good then more is better", at least I practiced it. So we cut another 1/2 inch off the rotor.

This time the flight was superb. The model hovered away from a hand launch and transitioned into a slow forward flight to about a hundred feet altitude. Eventually the engine quit but instead of a transition to autorotation the rotor just quit and the model spiraled vertically to ground.

"Does it always do that" said Sweeney, "no that is the first time it did it" said John. Of course he didn't tell him that it was the first time it had reached sufficient altitude to run the fuel out!

Despite this minor setback AM did publish the design although I don't remember the name of it.

Following these successes in design and construction of stable lightweight helicopters John turned his attention to RC. Here was a guy with almost all the attributes to succeed. He was a leading rotorcraft technologist; he really understood the aerodynamics, stability and control at the fundamental level. He was also an accomplished machinist, a vital skill because these were no balsa and tissue models. John made every part of his helicopters including the swashplate bearings.

Now the experts will tell you that stable is not necessarily controllable, indeed much of the early fixed wing experimentation was to find the right balance. Boeing's original airplanes were very stable but not very controllable.

So John built and attempted to fly his early RC helicopter creations with little initial success. We all know how hard it is to crash the commercially available RC helicopters and put them back together, imagine, if you had to make all the replacement parts from scratch! Now John was not an RC flyer, he had no particular skills in this area so for a while I had him convinced to let Gus Geissinger fly it for him. However, Gus found it difficult to fly and John was dispirited to fix the effects of Gus's learning. Nevertheless, John was having some success and this resulted in publication of his work and the interest of others. And this interest was the reason he was invited to give the DCRC Symposium in 1969 titled “A Radio Controlled Helicopter". Here is an except from an American Aircraft Modeler magazine report on the event;

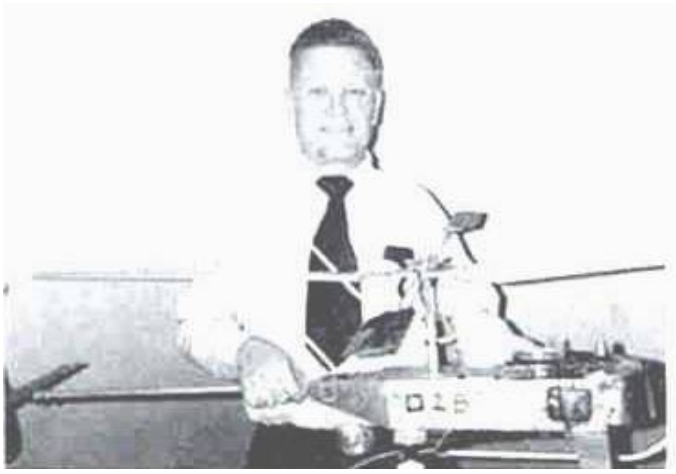
John Burkam showed several of these complex craft, flew a simple rubber-powered design in the auditorium. He had with him examples of a free-flight heli with a 25" rotor diameter, and a somewhat larger R/C heli, with 35" dia. rotor. Being a helicopter engineer, John went through the design problems in a systematic manner, covering such matters as Aerodynamics, transmissions, Structure, Torque Counteraction, Stability, Reliability and Long Life Flying.

Having built, rebuilt and test flown a number of these craft, John gives some extremely valuable practical info. Though he is considered an expert in the model heli field, he confesses that he still can't put one of these craft into the air and steer it as he wishes. Model helis have minds of their own!

He showed movies of some of his training sessions, where the model is "flown" attached to a long counterbalanced rod, which is pivoted to allow circular and up-and-down movement. Many illustrations accompany this paper.

The following day in high winds John attempted a World Record for RC Helicopter Endurance. In these dreadful conditions he managed a flight of only 5 seconds, but since there was no existing record this was accepted and he was awarded an FAI certificate for it. Eventually, in 1974, John raised the record to 1 hr 38 minutes.

And as so often happens in life others saw the art of the possible and ran with it. As I remember Dieter Schuleter(sp?), in Germany, corresponded with John and launched off on his own to build the first commercial RC helicopter. The rest is history



John's last great work was an RC model of the tilt rotor V-22. He designed and built it but I don't think it was ever flown.

I believe few in the World-Wide RC helicopter community know the debt they owe John Burkam. His efforts are largely forgotten, all the more shame because John died a couple of years ago.

But it is John's legacy that drove me to write this piece. We have a flourishing very skilled group of RC helicopter flyers in our club and they have been out to Sleighton field or at the club meetings recently.

Chuck Kluzynski, Steve Boyajian, Joe Scavitto and Marty Bakalorz once regularly flew at our fields. They were all super pilots, but slowly leaked away as we lost our gas fields.

2010; But of course the advent of widely available and popular electric helicopters are now available and hence the interest in so many current Propstoppers. See the cover picture from the recent picnic.

Dave Harding

Penni Helicopter

World's first, real, rubber-powered copter is simple but a scientifically developed free flight demonstrating all principles of rotorwing operation. Build it from scrap!
JOHN BURKAM

Many men came to me after I flew Penni in the auditorium at the DC/RC Symposium last May and quoted their sons as saying, "Daddy, make me one of those, please!"

It is rather cute flying around like a real chopper and it's fairly easy to make – especially if you use the 'quickie" hubs instead of the universal hub. Most of you can build it from the plans only, referring to the text in case it doesn't fly right away. This little model was designed during my lunch periods at work and mostly built there, too. She was made specifically as a stability or instability demonstrator for the DC/RC Symposium in May 1969.

Big enough to have decent performance, but not big enough to be damaged when colliding with tables, lamps, etc. If you build the universal hub you can press in balsa plugs or wedges to prevent tilting of the aluminum tub with respect to the shaft and/or the hub. You can demonstrate the stability of the completely free universal hub with stabilizer bar and of the feathering-only hub with stabilizer bar. (Feathering is pitch changing of both blades, one up, one down, about the hinge axis, which is nearly parallel to the blades.) You can also demonstrate instability of a completely rigid rotor; that is, no feathering or teetering, and of a teetering-only rotor If you don't want to experiment you can just build the "quickie" hub shown and have a mode that flies just as well as or better than the universal hub. You'll notice that on the quickie hub the blades can feather easily by twisting the feathering pin in the diamond eye, but when the rubber is wound up and driving the rotor, the force of the eye on the feathering pin creates friction to resist any up and down sliding of the pin in the eye, as would be caused by flapping or teetering motion of the blades. This friction damping of flapping motion prevents the fuselage from swinging to and fro like the one with the universal joint.

Fuselage: You can start building any part, but I like to start with the fuselage (sticks) and add the landing gear so it can stand up by itself. You can add parts to that and not have them lying around loose, or lost. Cut the 1/8 x 3/16" pieces to length and shape the ends as shown on the drawing, taper the tail boom, and sand off rough edges. Mark on the balsa where they come together, then cement them together at right angles to each other. (I recommend Titebond for wood-to-wood joints and Duco cement for metal-to-wood except where solder is called for. Epoxy also is good but is more trouble.) Glue on the 1/32 sheet balsa gussets. Form the .045 wire nosepiece, force the ends into the balsa sticks, wrap with thread, and cover the joints with Duco cement. Bend the landing gear struts from .025 music wire (.031 is ok if you can't get .025).

The landing skids can be made of bamboo or 3132 aluminum tubing, or 1/8 sq. hard balsa. If you get a 12" piece of aluminum tubing, cut it into two 6" pieces and make the skids a little shorter on each end than shown on the drawing. Bind the rear strut to a curved piece of 1/8 hard balsa and cement it to the fuselage after cutting a small notch for the wire to fit up into. Press the front strut down onto the fuselage, bind with thread, and

cement. After the struts dry in an approximately straight position you can tie on the skids. Here is where you find out why the front strut ends bend forward and the rear strut ends bend backward. Put marks on the skids where the struts are to be fastened. Hold a skid in about the right position and wrap a rubber band tightly around where one strut touches the skid. Now wrap thread around the other strut and skid. Remove the rubber band and wrap the first strut and skid. Do the other skid the same way, line up both skids, and cement with Duco. Now she sits on her feet.

Hook, rotor shaft, Pulleys: Bend a small hook as shown and glue it on the bottom of t right the motor-stick. Get thin aluminum (.010 to .020) or find an aluminum beer can. Even a thin tin can will do. This is for washers. Cut two washers rectangular, 1/8 x 1/4, and drill a hole in the center of each just a hair bigger than the size wire used for a rotor shaft. If you don't have drills that size make one or two out of music wire. File the end flat like a tiny screwdriver then bevel the end at an angle on each side, coming to a point in the center so it looks like the end of a regular drill except for no twisted flutes. If you're drilling tin can steel, a needle sharpened like a drill holds up better. And if your hand drill or electric drill won't take that small size, solder a piece of 1/16 brass tubing, or rolled-up tinplate, on the back end of your homemade drill. This drill, being so small, should be long enough only to stick out of the chuck 1/4" or less.

You could also use an X-acto pin vise and twirl it between your fingers. Drill a hole down through the fuselage stick for the rotor shaft. If it leans to the left a little, say three or four degrees, OK. That will tilt the rotor to the left and offset the thrust to the right of the tail rotor. This is not really important. Now stick a piece of rotor shaft wire through the hole and glue on the bearing plate washers just made. Pull that wire out before it gets stuck in permanently, cut off a piece 3”x12" long, and bend either a diamond-shaped eye in the end for the "quickie" type hub, or a round eye to fit over the 1/16 brass tubing of the universal hub.

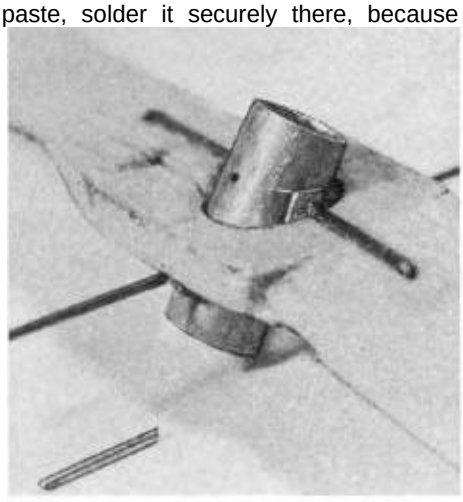
Cut a 5/16 sq. piece of thin brass or tin-plate. Punch or drill a hole in the center of the brass, slip it up on the rotor shaft to a point 2-1/4" below the center of the eye. Clamp the bottom half in a vise so that the square washer is held at the right place and perpendicular to the shaft. Using soldering paste, solder it securely there, because this washer takes the full tension of the rubber, and full torque while you're holding it by the pulley and feeding the tail rotor belt onto the tail rotor pulleys. Clean off all traces of soldering paste to prevent rust.

Draw circles on 3/32 hard balsa the size of the two pulleys. Cut out these circles with sharp knife or razor blade and sand them to smooth circles. Drill a hole in the exact center of each, the size of the wire that goes through it. Takeout the drill, slip the pulley blank on it and twirl it to make sure it isn't eccentric. It must be in the center! To make the groove around the edge of each pulley, start by cutting a small 1/32 wide V - groove around the center of the pulley's edge. Be careful not to cut too deeply. Next go around the edge again starting from a point about 1/64" from the edge and cutting toward the center. When you get an even 6O-degree V-groove all around the edge, fold a piece of fine sandpaper and sand the groove with the folded edge. Dope and sand the groove a couple of times, so that there is a smooth, hard groove that the thread won't climb out of even when winding the rotor by hand. Slip the big pulley on the bottom end of the rotor shaft and cement it to the 5/16 square washer. Cement another washer on the bottom of the pulley. Before the cement dries, twirl the shaft in your fingers and, if necessary, force the pulley perpendicular to the shaft. Cut out the three balsa pieces for the tail rotor" Slip on another tiny washer, or a glass bead, add a little Vaseline or Lubriplate, and slip the shaft into the fuselage main bearing hole.

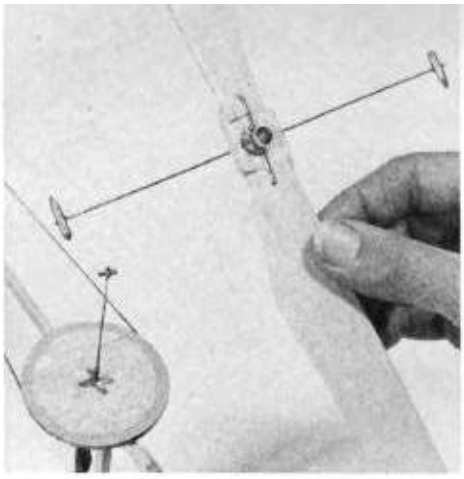
To bend the hook on the wire without wrecking the fuselage, hold the wire in long-nose pliers, and then bend the wire around those pliers with another pair of pliers. Start with the outermost bend and work back to the middle. You will have to guess how long it should be before bending. This method avoids putting any force on the balsa wood"

Tail Rotor: Finish the tail rotor before you lose the pieces. Drill a hole in the 3/16 round piece for the tail-rotor shaft. Carve or sand a slight lifting airfoil shape into the tail rotor blades and glue them onto the 3116 round hub piece at about 20 degrees to the plane of rotation. This is a left hand prop, because it is pulling the tail to the right when the bottom end is going aft, (rotation as shown on the drawing). Again, stick a piece of straight wire in the tail rotor hub and twirl it between your fingers slowly, to see if the blade angles are equal and that the blades track or run true without a wobble. Make adjustments while the glue is drying, then add a little more glue to make sure.

Glue a little block of 1/8 sq. balsa to the right side of the



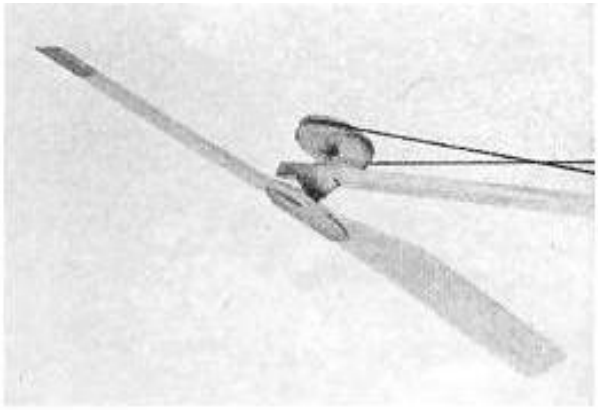
Heart of a copter is rotor-head assembly. The more complicated universal hub is shown.



A pin, left in photo, goes through the hub and little tube on the rotor shaft below.

Note how stabilizer bar bends around hub. It controls individual blade angle of attack.

tail boom where the tailrotor shaft is to go. Drill through for the tail-rotor shaft and glue a washer on each side for bearings as you did for the main rotor shaft. After the glue is dry, take a piece of music wire the same size as the tail rotor shaft and clean out the hole so the tail rotor turns easily. Now cut a piece of music wire for the tail rotor shaft, 1" long, and bend 1/8" of the end at a right angle. Push it through the tail rotor hub, sinking the bent end partly into the hub. Glue that end and also glue a washer on the other side.



Tail rotor spins several times faster than main rotor. It has fixed pitch only.

Assemble the tail rotor on to the tail boom; stick the shaft through the hole, put on a glass bead or very small washer, lubricate, add a 1/8 square washer, then the tail rotor pulley. Enough wire should be sticking thru to bend 1/8" of it over by the two-pliers method without wrecking the pulley. Then slide the pulley out against the bent-over end, cement the wire on both sides of the pulley and slide the 1/8 sq. washer against the fresh cement on the pulley. Blow on the tail-rotor to make sure it spins freely, and that the tail rotor pulley runs true. Balance the tail rotor by adding a little Titebond cement to the lighter blade tip.

Main rotor: Cut out the blade blanks, soak them in water and tape them to a metal, cardboard or glass cylinder 2 to 3" in diameter. Leading edges should be parallel to the axis of the cylinder. Lay a piece of cardboard over the blades and wrap tightly with rubber or string-. The cardboard may not let the balsa dry as fast, but it prevents the string from creasing the balsa. Layout the hub, cut to shape, carve the topsides of the ends to fit the underside of the blades, and drill out the oval center hole with sharpened end of 5/16 tubing.

Carve and sand the blades to a nice under-cambered airfoil, using the can or tube they were formed on as an aid in holding them. Cement the blades to the hub, using a light line 1/4" back of the leading edge to sight across, to make sure the blades are directly opposite each other. Balance the blades on a knife-edge crosswise at the center of the hub, either sanding on the heavy blade or adding a little Titebond to the tip of the light blade.

Cut a 1/2" long piece of 9/32 aluminum tubing and drill two holes through it at right angles to each other, and at right angles to the centerline of the tube. These 1/32 holes are 3/32 from the end of the tube. Cut and bend the two L-shaped feathering pins from 1/32 music wire and force the short end down through the blade into the hub, so that the long end projects about 1/16 into the oval hole in the hub. Note that these pins are on the centerline of the hub but that the blade leading edges are swept five degrees forward of the centerline of the hub. This is important, especially if you want to lock out the flapping bearing and fly it as a "hinge-less" rotor.

Now lift off the feathering pins, slip a small washer over each one and replace them with the 9/32 aluminum tube in position. Cement the feathering pins to the hub. Cut a piece of 1/16 brass tubing just short enough to fit crosswise in the 9/32 tubing. Solder the brass tubing in the eye of the rotor shaft, centered up and perpendicular to the shaft. Cut a piece of 1/32 music wire 5/16 long and assemble the rotor to the shaft. If the feathering pins project too far into the center of the 9/32 tube and hit the eye of the rotor shaft, file them off a little. Of course, there should not be too much solder on the tube and eye. A small drop of cement on each end of the 5/16-long music wire, where it sticks through the aluminum tube, holds it in place.

Bend the stabilizer bar and cement it, less weights, to the bottom of the rotor hub. Make the two weights of equal size from 3/32 resin-core solder or just use Du-Bro Dura-collars with 1/16 bore. If you want to be neat put a bushing of 1/16 aluminum tubing in each collar so it fits the stabilizer bar better. Slip the weights on the ends of the bar and see if it balances. Move one weight in toward the hub a little if necessary. Cement or tighten in position. One thing hasn't been mentioned yet those leading edge tip weights made of 1/16 diameter solder. First, see if they are necessary. My own blades, made from 1/32 balsa, were very flexible, would not track properly, and had to have the weights.

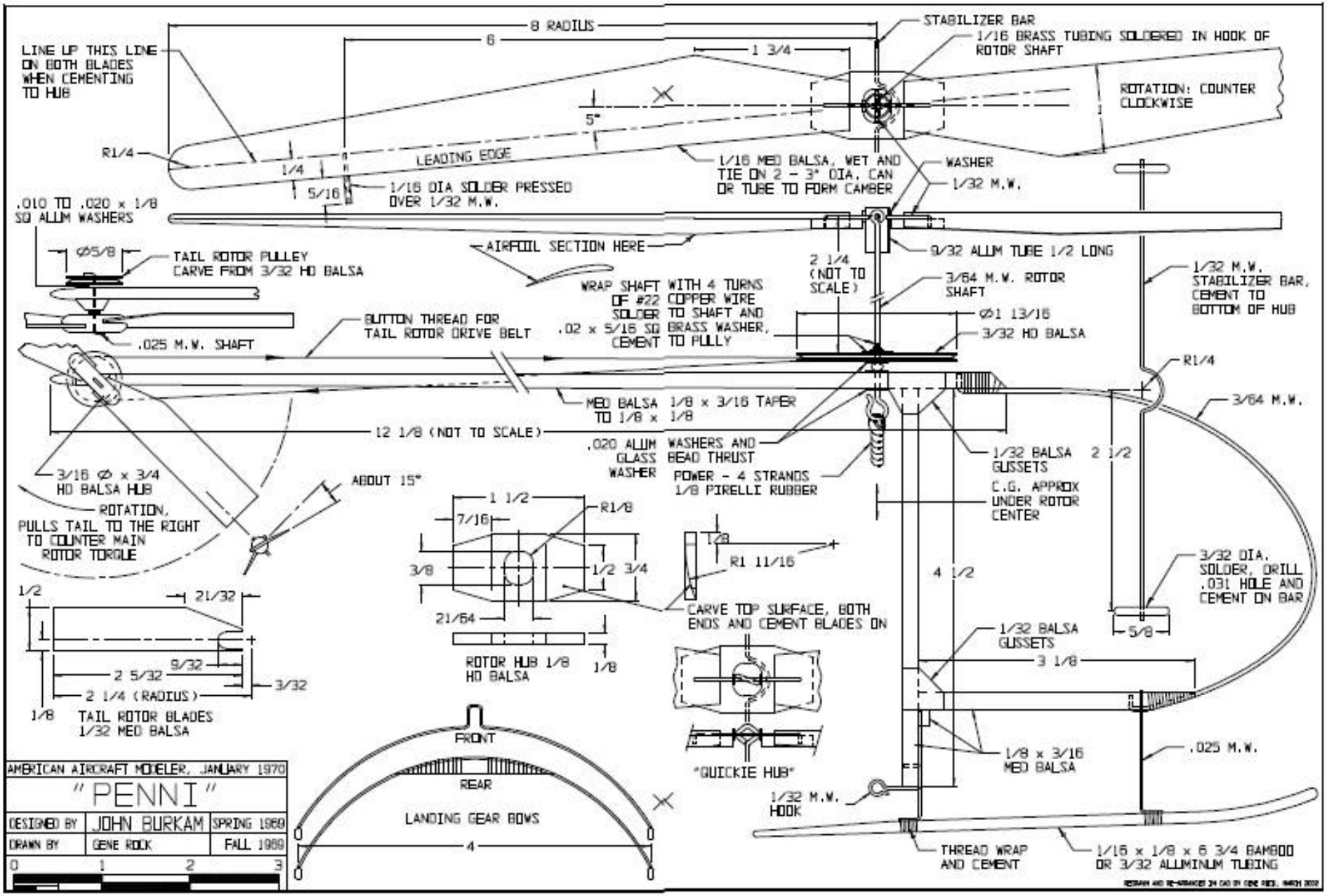
Put on your four strands of Pirelli rubber (never mind the tail rotor yet), wind up to a single row of knots, and see if the rotor spins true, or if one blade rides higher than the other. (I blacken one blade tip with magic marker so I can see which one is high.) Whichever blade is high, bend up the stabilizer bar, which comes before that blade. Also, if necessary, bend down the bar, which comes before the low blade. If you can't get them to track, or if they are very sensitive to a small amount of bending of bar, then add the tip weights, being careful to keep the blades balanced span wise.

Last, tie the tail rotor belt (button thread) in position fairly tight. The tightness is not necessary to keep it from slipping, but to keep it from climbing off the pulleys while hand winding. Use a square knot and cement it after you have it tight enough. Work the cement in with your fingers and remove any excess. Lubricating the rubber with purchased lubricant (or a 50-50 mixture of glycerin and tincture of green soap) gets more power out of the rubber and allows more turns to be put in.

If you want to build the quickie hub, make one long feathering pin instead of the two L-shaped pins. Put two washers in the center of this, push the bent-down ends into the hub, and cement it there. Push the washers out to where they touch the balsa and cement them there. Now, the diamond- shaped eye at the top end of the rotor shaft should just take up the space between the washers when it is assembled and in driving position.

Flying: The CG of the model should come under the center of the rotor. When you launch the model, let go of the rotor first, then a second later release the fuselage. If you want it to rise straight up launch it level. If you want it to fly forward, tilt it forward about 10 degrees. If the tail-rotor thrust is too great for the torque of the main rotor (turns left while hovering) cut a little area off the tail rotor blade tips. If it turns right while hovering, increase the tail rotor blade angle, after making sure that the belt is not slipping.

American Aircraft Modeler, January 1970


8 RADIUS
6
1 3/4
LINE UP THIS LINE ON BOTH BLADES WHEN CEMENTING TO HUB
STABILIZER BAR
1/16 BRASS TUBING SOLDERED IN HOOK OF ROTOR SHAFT
ROTATION: COUNTER CLOCKWISE
5"
R1/4
1/4
LEADING EDGE
5/16
1/16 DIA SOLDER PRESSED OVER 1/32 M.W.
1/16 MED BALSA, WET AND TIE ON 2 - 3" DIA. CAN OR TUBE TO FORM CAMBER
WASHER
1/32 M.W.
.010 TO .020 x 1/8 SQ ALUM WASHERS
AIRFOIL SECTION HERE
9/32 ALUM TUBE 1/2 LONG
Ø5/8
TAIL ROTOR PULLEY CARVE FROM 3/32 HD BALSA
2 1/4 (NOT TO SCALE)
3/64 M.W. ROTOR SHAFT
1/32 M.W. STABILIZER BAR, CEMENT TO BOTTOM OF HUB
WRAP SHAFT WITH 4 TURNS OF #22 COPPER WIRE SOLDER TO SHAFT AND .02 x 5/16 SQ BRASS WASHER, CEMENT TO PULLY
Ø1 13/16
3/32 HD BALSA
.025 M.W. SHAFT
BUTTON THREAD FOR TAIL ROTOR DRIVE BELT
R1/4
MED BALSA 1/8 x 3/16 TAPER TO 1/8 x 1/8
3/64 M.W.
12 1/8 (NOT TO SCALE)
.020 ALUM GLASS WASHERS AND BEAD THRUST WASHER
1/32 BALSA GUSSETS
2 1/2
POWER - 4 STRANDS 1/8 PIRELLI RUBBER
C.G. APPROX UNDER ROTOR CENTER
3/16 Ø x 3/4 HD BALSA HUB
ABOUT 15°
ROTATION, PULLS TAIL TO THE RIGHT TO COUNTER MAIN ROTOR TORQUE
1 1/2
7/16
R1/8
3/8
1/2 3/4
1/8
R1 11/16
4 1/2
3/32 DIA. SOLDER, DRILL .031 HOLE AND CEMENT ON BAR
21/64
CARVE TOP SURFACE, BOTH ENDS AND CEMENT BLADES ON
1/32 BALSA GUSSETS
ROTOR HUB 1/8 HD BALSA
1/8
5/8
3 1/8
1/2
21/32
9/32
2 5/32
3/32
2 1/4 (RADIUS)
1/8
TAIL ROTOR BLADES 1/32 MED BALSA
FRONT
REAR
LANDING GEAR BOWS
4
"QUICKIE HUB"
1/8 x 3/16 MED BALSA
.025 M.W.
1/32 M.W. HOOK
THREAD WRAP AND CEMENT
1/16 x 1/8 x 6 3/4 BAMBOO OR 3/32 ALUMINUM TUBING
AMERICAN AIRCRAFT MODELER, JANUARY 1970
"PENNI"
DESIGNED BY
JOHN BURKAM
SPRING 1969
DRAWN BY
GENE ROCK
FALL 1969
0
1
2
3

Chuck Kime's Grand Contest Adventure

The story actually started a couple of years ago. I made a deal on a 64" Playboy. I was hoping an opportunity would come up to fly it with one of my old fuel engines; Never happened! A little while ago I gave Mike Williams a kit for an R/C sport ship that I really wasn't my type model. Turns out he had bought a couple of Turnigy motors. He used one in the Tipsy he got from Mick Harris. He gave me the second one in exchange for the kit.

Back in May of this year I flew in a contest in Mays Landing, N.J. Took a 1st place in 1/2A Scale with 1925 Consolidated Biplane. Nice, but, as is typical in Jersey, the wind came up, and I suffered a little damage in one of my landings. Even worse, I lost my Spirit of SAM model. It was up high, over 20 minutes, and the wind came in strong. At full throttle it still went backwards, downwind. Followed it with binoculars, lost it somewhere in the Pine Barrens. (been there done that; Ed.)

Anyway, back to the original story. At the trophy presentation an announcement was made that Joe Beshar, a longtime, and well known, flyer was going to sponsor a new type contest. It's called an Electric Limited Motor Run, or, ELMR. The idea is you can fly anything (Old Timer) you want. Any size, any motor. You only get a 15 second motor run. Then, stop the motor and glide. Well, I had a Playboy that needed a motor. A fairly BIG motor line the one from Mike, and, knowing big is better, decided to put them together. I only had time for a couple test flights. OH BOY!! A rocket!

The day of the contest was rather nice. A little breezy, but not terrible. I think we had 8 planes fly the event. Most were smaller models which climbed well, but had problems with the wind causing short flights.

My first flight was, well, not the smoothest. John Jenks, who was timing for me, called time as I was finishing my 4th or 5th loop. Finally got it under control for a 2min. 44 sec. flight. I timed for John, and then went up again; Straight up, again, like a rocket. This time I got a 3 min. 58sec. flight. I landed quickly to keep the plane on the field, Like I said "windy". So, it was enough for a 1st place. Can't wait for spring so I can try it again. I think I'll have a lot more competition. They saw that "BIG" is good. But, you still have to glide. The right combination is fun. Here's a chance for some club members to enter a simple contest at the Cloud Kings Octoberfest Vintage Model event on 10th 11th October in Oxford, Pa. http://www.cloudkingsrc.org/Events.htm

This is an excellent meet to fly at or just enjoy. It features aerobatic competition to Vintage RC Society rules as well as an Old Timer event.

Chuck Kime

Chuck with Joe Beshar long time modeler and AMA official. Most recently responsible for the AMA Help Find a Field Program. I don't remember our hearing from him though!

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

Propstoppers R.C. M.A.C

Propstopper Helicopters at a recent evening fun fly. Helicopters are getting to be a big part of club activity.

Editor's Note;

I apologize for not having much club material for this edition, but as many of you know I have been out of action or away for one reason or another since April.

I have included an old article on Propstoppers Helicopter flying as it seems we have come full circle from the gas models of ten years ago to the electric versions of today. Also, I thought the current group of helicopter flyers would be interested in some history on developments leading towards today's machines.
Furthermore, with the up and coming (it is, isn't it Dick?) indoor season I thought some of you might like to build the rubber powered Penni helicopter because it is both fun and educational to fly; see why today's magnificent helicopters depend on the fundamental developments of rotor technology.

The October November season is election time for the Nation (oh, you haven't heard that?) and the Propstoppers. Our pertinent Bylaws on the subject are reproduced in the following section.

Dave from SoCal about to fly back to Phila for three days prior to driving to the SAM Champs in Muncie.

8. <u>Article VIII - Nominations, Elections, and Recall</u>

a. Nominations

i. Any person running must be a member in good standing and a current AMA member.
ii. An individual may run for only one office.
iii. In the August and September newsletter, a note will be published of the upcoming nominations and election to be held in October.
iv. Nominations must be presented at the October meeting either in person or by written statement. No nominations will be accepted after the October meeting.
v. The November newsletter will be made available to all nominees to present their views and platform.
vi. At the November meeting all nominees will be given the opportunity to reiterate their views and to answer any questions from the members present.

b. Election

i. The ballots will be printed after the November meeting and mailed to all members with a self-addressed stamped envelope to be returned to the designated collection point determined by the president.
ii. The ballots will be opened at the December general meeting and counted by two (2) individuals as designated by the president.
iii. Any nomination at the October meeting having only one person for a position in each category shall be voted into office by the majority in attendance.