



**PRESIDENT TO PRESIDENT**

# Make 2010 Proactive

by Dave Mathewson, AMA President

Another year is in the books. I hope everyone had a good 2009 and will have an even better 2010.

AMA's new online forum continues to grow. Over the last month we've added two new sections. One section will focus on Control Line modeling and the other is a general Safety Discussion section.

The Safety Discussion section is an area where members can post questions relative to safety issues and, if requested, get a direct answer from AMA. This area of our forum is being monitored by Ilona Maine, who manages our Safety and Benefits Department, and Jim Rice, chairperson of AMA's Safety Committee.

We've also added an archived section to this area so that once a question receives an "official" answer, the thread will be locked and moved to the archive. Over time, as the archive grows, it will become a knowledge base that members can

search to find immediate answers to their questions.

We've also added three new volunteer moderators to help manage the forum. Peter Vogel is a general moderator and oversees all of the forum sections. Richard Grogan will moderate the Control Line section, and Frank Geisler the Safety Discussion section. These three volunteers will help keep the forum running smoothly and keep it an enjoyable place for members to visit.

Social networking is a term that describes how millions of people are sharing information using the Internet. It has become an incredibly popular way to communicate. AMA has stepped into the social networking world and now has a presence on a number of Internet sites including Facebook, Twitter, and LinkedIn. In addition we have an account on YouTube and have

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**TIPS FOR CLUBS**

# Club Corner

by Jim Wallen, *Insider Club Column Editor*

Has your club become a little inbred? By this I mean perhaps you have not looked around to other clubs to see what you might incorporate to make your club more interesting and enjoyable.

Visit another club's meetings to see what features you might carry back to your club. Maybe you can arrange to have a couple of clubs in your area get together and fly at a host field. It's amazing what a hot dog and a cup of coffee can do in bringing club and personal relationships closer together.

Most AMA clubs around the country are facing declining membership. Is your club in the same boat? What can you do about it? Nothing happens unless you go out and make it happen.

AMA had a membership drive last year that added new members. The program is improved for 2010, so take the time to understand it and bring the details to your club and membership. New members bring a fresh outlook and renewed enthusiasm. Wouldn't it be nice to add some new volunteers to the 10% who seem to do most of the work?

Are you aware of the AMA program "Sign 3-Fly Free?" You can receive a one-year AMA membership credit for signing up only three new members! For details see the AMA Web site at [www.modelaircraft.org/ambassador.aspx](http://www.modelaircraft.org/ambassador.aspx).

Spread the word!  
 Till next time. →

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# Distraction Action

Don Nix, *Insider Safety Column Editor*

Once upon a midnight dreary, as I pondered weak and weary....

Actually, it was last night, considerably before midnight, not dreary at all, while I was pondering what to write for this column. Then I began to recall some incidents where distraction at the flying field had caused crashes. Here are two in which I was personally involved.

As I've mentioned in past columns, when I lived in Southern California most of my flying was done at Mile Square Park in Orange County. Mile Square was the busiest RC park I ever saw, and quite possibly the busiest in the US. I say "was," because it was closed to model flying some years ago.

The runway was an abandoned WW II military airfield, the RC part 2,000-feet long. There were 12 pilot stations, and on good weather weekends it was not unusual to have 50 or 60 fliers at the field and all 12 stations "hot" at the same time. One particular distraction incident remains clear in my memory although it took place more than 20 years ago.

A good friend of mine did a lot of teaching. When newbies came to fly for the first time, they were usually directed to George to get them on the buddy box and start learning. One Saturday, George called me over just before starting a beginner's engine.

"Don, before I get this fellow on the buddy box, you take his transmitter. After takeoff, I'll trim mine, then turn it over to you to get his box trimmed out so he won't have to struggle with it." I agreed, and after George made a couple of circuits said, "Okay, Don, you take it and trim his box."

I had control of the model for perhaps a hundred yards when we heard someone scream, "HEADS UP!" followed by the unmistakable sound of a model under full power and, even without seeing it, could hear it was coming toward us.

Naturally, we ducked and a split second later the airplane crashed hard on the pavement three or four yards from our feet. As soon as we realized we had not been hit, our attention turned back to the model we were test flying. This happened to be at a moment when almost all the

other stations had models in the air at the same time. The sky looked and sounded more like a swarm of large bees than a model flying field.

Scanning the air for our model, George yelled, "I've got it!" quickly followed by, "No, that wasn't it; I think it's that one!" The sun was at the point where most of the airplanes in the air appeared to be almost silhouetted against the sky and were hard to distinguish from each another in the flock on the far side of the circuit.

George repeated the phrase two or three times over the next 15 seconds, until it was obvious that none of the models were ours and that it was apparently gone into Never-Never Land out of sight somewhere beyond the trees in the distance. There was nothing to do but hand the owner's transmitter back to him, tell him we had no idea where his model had gone, followed with a heart-felt apology. Understandably, the fellow was somewhat bewildered and heartbroken, having no idea such a bizarre thing could happen. However, this story does have a happy ending.

About a half-hour later, while the owner was packing up his gear to leave, a van bearing the logo of a gas station/auto repair shop came driving up. The driver got out, picked "our" model, totally unblemished, out of the back and asked, "Does this belong to someone here?"

After we got control of our astonishment, he explained: He and another mechanic were working on a car when one of them looked up in time to see the model, propeller stopped, rolling up quietly into an empty service bay. One exclaimed, "Where the (bleep) did that come from?" By then, several had gathered around, and one commented that a lot of such models were flown at Mile Square Park, a couple miles distant, so they decided to give it a try. Obviously, the plane, perfectly trimmed by George, had flown the distance, run out of fuel and glided to a stop, just yards from a busy street.

I realize the above sounds totally unbelievable, but I was there.

There is also a good lesson hidden in

that incident. The last time I looked, a couple of lines in the AMA rule book clearly state that each model should have the owner's name, address, and phone number somewhere on or in it. This is a rule that is rarely taken seriously.

The second incident of distraction disaster took place back in the 1990s after I had moved back to Texas and was living in a small town near Austin. A friend from out of state was visiting, expressed curiosity about RC flying, and I, anxious to show off, said, "Hey, I have permission to fly models at our little local airport. C'mon ... I'll show you how these things work!"

I took my favorite, a big 1.20-powered aerobatic model. As I was putting the wings on, getting fueled up and ready to go, I was being a smart guy, explaining how everything worked. My friend stroked my ego with admiring comments. I started the engine, taxied to the takeoff spot, shoved the throttle full forward, broke ground and started a great climb-out. What happened next wasn't pretty.

Almost immediately, the model became uncontrollable, trying to roll from side to side. Within another two or three seconds it rolled on its back, diving straight into the pavement. I was stunned. We went over, picked up the wreckage and took it back to my van. I took the wings off, commenting lamely that the only thing I could think of was radio interference, which I had never experienced at that field.

I unbolted the wing, lifted it off and reached to disconnect the aileron servo leads from the receiver and found I didn't have to. In my eagerness to impress my friend and basking in the glow of his comments, I had never connected them.

Having been a full-scale pilot for decades and thousands of flying hours in addition to years of flying RC, I truly believe this was the single, solitary time in either that I never checked for full movement of all the controls before takeoff.

We should never, ever be complacent about safety, no matter what the level of our experience—novice or expert.

Flyerdon1@yahoo.com →

# Membership Drive Reaction

Jim Rice, Chairman Leader Member Development Committee

As I write this, it is a week before Christmas and the final membership numbers for 2009 are fresh in my mind ... Depressing but still in my mind. We had a membership drive. A well-thought-out, but poorly executed drive. The leg work was done at the HQ level and the advertising was done in *Model Aviation* and by word of mouth via most of the District VPs. Yet the grass roots level, where the newbie meets the member, it didn't happen very well; seemingly no interest in the growth of the membership by the average modeler or club.

That should give all of us with a little concern about the future of our organization cause to reflect on why we aren't growing or worse yet, why we are shrinking.

Everyone who has been a member more than five years (and that is who this article is targeted toward) remembers when getting a new member started flying rejuvenated your own enthusiasm, which was then expressed and passed on to the newbie, resulting in his or her rapid infusion into this addictive sport. The newbie then brings friends and relatives to the field to try to get them addicted as well. It could snowball, it *should* snowball from there, but lately it hasn't done that very well!

We keep harping on bringing in more new members but don't concentrate so hard on keeping the ones we already have. If your club brings in six new members this year but loses ten old ones we have a net loss. If every club in the AMA lost just three members, we would be down about 7,000 members before we ever started to recruit the new members!

So why are we losing them as fast, if not faster, than we can recruit them?

You may know better than I do but I have some ideas from personal experience and daily contact with clubs and members that are having problems with each other. Following is a list of issues I have seen:

1. Club dues are too high when coupled with initiation fees and AMA dues and perhaps holiday spending if the club has renewal at the first of the year.
2. Club meetings are stagnant, discussing the same old business with no flair of creativity to try to encourage the membership to be there for the fellowship, the modeling exchange, and the educational experience.
3. Cliques groups that make it hard for a newcomer to become a part of the organization—If you can't afford an XYZ don't sit with us; If you can't do a double whifferdill with a twist you don't need to fly with us; If you didn't use escapements and reeds you won't be able to communicate with us, etc.
4. Old-time members with a chip on their shoulders about new folks, new styles, and new ideas. Some old guys (I qualify for that) don't want to have their club changed and are not willing to tolerate anyone who may have a good new idea. The board of directors ought to change fairly regularly and bring in new ideas and new blood. I have had reports of members being threatened by old timers who don't want change, even to the point that the police have had to be involved.
5. Conduct at the field that is unacceptable for mixed company or families. I have seen and had reported to me too many incidents of vulgar and foul language being used so loudly that it made many at the field uncomfortable. Guys don't want to bring their spouses or children out to the field and subject them to that. For that matter, many longtime modelers would rather not be subjected to that either.
6. Safety officers or instructor pilots treating the membership or new pilot like a stupid third grader (this assumes the recipient of the barrage is not a stupid third grader). I had a couple of guys who were longtime modelers tell me they joined a club based on my recommendation and began flying on the first day at the field with no orientation or advice. The Safety Officer observed they were not following one of the club's local rules and berated them loudly and publicly instead of quietly explaining the rules to the newbies. They both quit the club after one day of flying. Fortunately for AMA they found another club instead of dropping the hobby.
7. Sometimes spectators come to observe the activity and are not welcomed and given a tour/briefing about the club and the hobby. Heck if you have a closed membership that doesn't mean you can't get someone addicted and send them elsewhere to fly. Take a minute and brag about your club and your hobby, you might get us a new modeler and get yourself a new friend.
8. Competition events aren't designed to allow a new pilot to compete with limited skills, therefore they don't compete because they don't want to be beat up and embarrassed by the experienced club aces. Design some events that don't even require a takeoff or landing so that a guy on a buddy box can compete. For example, a two-minute timed flight from the time the instructor hands the airplane over until the student calls time or the instructor has to take it back. Or climb and glide if the student can take off okay but has trouble landing. The time stops when the student adds power to abort the landing.
9. Maybe a worse thing in today's electronic world is the argumentative nature of many of the forums that a new or prospective member might visit. Just observing some of the threads would be enough to cause some potential new members to look elsewhere and if they post a question and get beaten up for their ignorance, they aren't going to want to come back for more.
10. Sometimes a club may need to embrace new technology or styles to try to help the newer modelers. I saw a sign on a non-AMA club gate one time that said No Park Flyers or Electrics Allowed. I went on in and asked if I could fly. I had a park flyer-sized electric that I designed that flew exceptionally well. I talked with the guys present and they agreed to let me fly; evidently the guy who objected to my kind of airplane was not there that day. After my first flight

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been regularly posting videos on that site. These types of online resources are a great help to us in getting timely information out to our membership.

Applications for AMA's 2010 Take-off And Grow program (TAG) need to be mailed to Muncie postmarked by February 1, 2010. TAG is a great way to promote model aviation to your friends and neighbors. If your club is selected to host a TAG Model Aviation Day, the AMA will provide up to \$1,000 in advance to use to set up and promote your program. Through TAG, individual AMA members can also take advantage of AMA's Ambassador Program. Sign up three new Open or Senior members with AMA, and a current member will earn next year's membership as our way of saying "thanks." Clubs applying to host a TAG Model Aviation Day will be provided with a complete program "requirements and guidelines" document to use as a guide. This document will include ideas on promoting and advertising your event as well as an outline of possible activities to take place during the actual day of the event.

Hosting a TAG Model Aviation Day is a great way to reach out to your community to give it a taste of a family-oriented recreational activity that all of us enjoy so much. In addition, you'll be creating positive relationships with your neighbors that quite often can help when the time comes to keep or acquire new flying sites.

See you next time ... →

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they gathered around the airplane and wanted to know more about it and its propulsion system. I doubt my visit converted the field but I think it impacted the thoughts of the ones who were present that day. If your club doesn't have a way to allow helicopters, see if you can do it. If you don't have a way to do hi-starts and winches for gliders, see if you can accommodate them. Do you have a place to make a CL circle, even a temporary one until the guys who want to fly CL can help you make a permanent one?

11. Does your club newsletter grab the attention of the average club member? Do he see his name or picture or his friend's in print? Does the newsletter make him want to get out to the field or over to the club meeting? A newsletter editor's job may be the toughest on the board. Help write an article, provide a picture, tell a modeling joke or provide a building tip. These guys want and need help and they are the voice of the club and the AMA for the local guys.

You get the idea I think. As leaders we all probably have some influence in our local areas and could help make things more enjoyable for the guys we have already signed up so that we close the door on attrition and let the recruiting efforts fill us back up.

Remind everyone that it is a hobby. We do it to have fun so let's have fun! →

From the Mid Atlantic Radio Kontrol Society, Snow Hill, Maryland

## Learning to 3-D and 3-D Well; Hovering and Torque Rolling

by Jeremy Chinn

### Part 4 of 5

In the past installments, you got the appropriate virtual and real airplanes to fly, as well as practiced methods to help speed your learning. During that time you also built two of the fundamental building blocks necessary to learning 3-D aerobatics—the Harrier and High Alpha Knife Edge.

It is now time to put those skills together to learn an advance level 3-D skill—the Hover. Why is the Hover an "advanced" level 3-D skill, and why did you learn to Harrier and fly Knife Edge first?

When hovering or flying a torque roll, you must use the tail of the airplane to control the model and keep it in a state of balance or equilibrium while hanging from the propeller disk. To do so, you must be very competent with the rudder and elevator to steer, or correct, the airplane. Learning to fly the Harrier and the High Alpha Knife Edge teach those skills rapidly and effectively.

The other reason is based on safety and airframe longevity. When an airplane falls out of a Hover or Torque Roll, it always passes through an attitude similar to a Harrier or a High Alpha Knife Edge. Since that attitude also generally requires slower movement to maintain altitude, it is generally best to "catch" the airplane as it falls out of a Hover or Torque Roll when it reaches Harrier or High-Alpha-Knife-Edge.

Once again this maneuver is much easier to learn on a simulator first using the "reduced time" method and then transfer the skills to real life.

The optimum conditions to learn to Hover start on a day with a mild constant breeze. Start with the airplane in a low (one to two feet off the ground) upright Harrier flying into the wind. I like a distance of about 40 feet away from myself for this exercise. Chose a spot over the field and gradually increase the throttle while initially increasing the elevator back pressure at the same time until the airplane is totally supported by the propeller disk. Inevitably, the airplane will begin to wander or lean left, right, or another direction.

Once the airplane gets out of Hover position, you have two choices to exit the maneuver:

1. Go to full throttle and climb up and out of the Hover. This is most pilots' gut reaction and is fairly effective; however, if the airplane is totally out of shape, or in an orientation the pilot is not comfortable with, going to full throttle in that position can be scary or even downright dangerous.
2. The better alternative to the full throttle exit is to allow the airplane's nose to fall until the airplane is either upright or inverted on the wing. The pilot can then fly

please see

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# Airplanes for Flying in Windy Weather

By Ivan Cankov

All too often, on an otherwise nice but windy day, folks just don't fly. Obviously, for a beginner, that's common sense—but for someone who has some experience, the wind can be a challenge that adds some spice to flying.

While it's easy to see that experience level has a lot to do with how much wind is too much, it may not be quite as apparent that the type of model you're flying also can have a great effect on your ability to handle winds.

Let's go through some airplane design features to see which ones give us the best flying characteristics to handle winds and the resulting turbulence:

**Size:** In general, the larger the airplane, the better it will handle winds of all kinds; large models don't "flop around" as much!

**Dihedral:** The more dihedral in a model's wings, the more they are going to be affected by crosswind gusts; it is hard to keep the wings level, therefore lineup to the runway is difficult in a crosswind situation.

**Wing Loading:** The higher the wing loading, the less an airplane will be affected when hit with a gust.

**Aspect Ratio:** Lower aspect ratio (stubby) wings will be less bothered by gusts; there is less leverage for side forces to upset the airplane, and lower aspect ratio wings have a greater tolerance to changes in angle of attack caused by gusts.

**Power:** Having the power to overcome the force of wind is necessary. The same thing goes when you get into a sticky situation.

**Lateral Control:** Ailerons are beneficial in a crosswind landing and takeoff phases. The ability to dip a wing into a crosswind without changing heading is essential, as is the ability to rudder the airplane parallel to the runway heading while keeping wings level with ailerons while landing.

**Landing Gear:** Models with tricycle landing gear are easier to land and take off in a crosswind than tail draggers; in addition, the wider the spread on the main gear, the better.

**Maneuverability:** This one is a bit harder to quantify. You want a model with stability, yet you do need good maneuverability to cope with gusts. Therefore, you want a model that is stable, yet responsive.

**Wing Mounting:** Generally, a low-wing airplane will handle crosswinds better. This is because the center of gravity of the airplane is nearer, in a vertical sense, to the aerodynamic center of the wing.

Therefore, a side gust does not roll the model as easily. Moreover, by mounting the main landing gear on that low-wing model, they can be spread wider.

It's unfortunate that almost every preceding item is in direct opposition to the characteristics found in many popular trainers. The main exception is the requirement for tricycle landing gear. But even with trainers, there are differences. Compare a Seniorita with the Kadet Mk2. While the Seniorita may be a bit slower and a bit easier to fly, the Kadet, with its ailerons, higher wing loading, lower aspect ratio, and lower dihedral, is a far better airplane when flying in windy conditions. Going a step further with the same kit manufacturer, the Cougar (.40)/Cobra (.60) kits embody all the right characteristics for windy flying.

In closing, I offer Confucius' only known saying about RC flying: "To learn to fly in wind, one must fly in wind!" →

From the F-M Skylarks Model Airplane Club

## Balsa Pilot Figure Head

by Linda Kegel



The pilot figure head you see pictured is modeled after a real person. It all started when a customer of ours who shall remain nameless (Chris Weivoda) wanted an "extreme pilot," and the one he wanted to order was discontinued. I opened my big mouth and said I thought I could carve one for him. I

asked him if he wanted it modeled after himself, but he said no, he wanted it to look like Wayne.

Those of you who know Wayne Monk, know that he is an easy-going, likeable guy. He happened to be in the store at the same time this strange request was being made, so I asked permission to take four mug shots of him (one per side). Since he is such a good sport, he agreed.

I began with a solid block of balsa wood about 3 x 4 x 8 inches. I drew Wayne's likeness on all four sides of the block and began carving with a long X-Acto blade. After I roughed out

a human-like head and shoulders shape, I took the Dremel with a sanding drum and did most of the shaping. I also used the cone-shaped cutter.

When I had it down to looking like Buddha (he had no hair), I used a piece of sandpaper about 1/4 x 1 inch, folded, and carefully made his features. After I finished carving the wood, I used sheetrock mud to add hair and build up any areas that needed refining. Once dry, I did a final sanding and then completely primed the figure with Kilz water-based paint. When that was dry, I painted it with artist's acrylic paint and gave it a coat of clear satin-finish acrylic varnish.

Lastly, I made tiny wire-rimmed glasses out of nichrome wire and poked the ends of the frames into his balsa head and glued them on.

I had a lot of fun with this. It's something any competent modeler could probably do on his or her own with a little experimentation. →



# A Secure Silicone Exhaust Deflector

by Noel Hunt

The newer breed of engines are great at retaining the fuel and oil in the engine, discharging it only from the exhaust outlet. Unfortunately, that outlet often discharges onto a fuselage side, or a wing surface, and so we still need to clean the aircraft at the end of the day's flying. Such was the case with my Norvel .40. I tried the standard silicone exhaust deflectors a couple of times and they did keep the airplane clean, but only for a flight or two. Then the airplane would land with the deflector missing and sludge on the fuselage and wing. Chances of finding the deflectors? Zero!

I devised a neat, simple, inexpensive, solution that works. And it will work on any muffler that has a smooth muffler outlet. (Some of the manufacturers are now including a zip-tie groove in the outlet that serves the same purpose.) I have since flown the Norvel with the same deflector for more than 50 flights. So I modified a few more mufflers and took pictures as I did so.

## Step One: What you'll need:

- Appropriate size silicone exhaust deflector for your muffler, and zip-ties.
- JB Weld.
- Isopropyl alcohol and masking tape.
- Paper towels.
- Short length of 16 or 18-gauge solid copper bell wire.
- Side cutters.

**Step Two:** Thoroughly clean the muffler outlet using a clean piece of paper towel and isopropyl alcohol. Do this three or four times to ensure all the oil is removed.

**Step Three:** Wrap the copper wire around the muffler outlet about twice to get a consistent radius for at least one turn. Remove from the outlet and decrease the radius slightly for a snug fit on the outlet. (Or you can wind it around something that has a slightly smaller diameter—I used an Exacto knife handle.) Cut the ends so you have just one coil and the ends butt against each other. If it does not come out just right, repeat until you get a good fitting copper “o-ring.” (Pictures One and Two.)

**Step Four:** Cut a thin strip of masking tape and apply it to the muffler outlet, leaving only about ¼ inch of the outlet unmasked. Include a fold-over at the masking tape's free end, to facilitate easy removal. (Picture Three.)

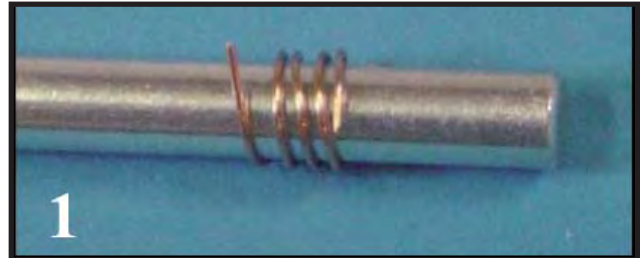
**Step Five:** Mix some JB Weld on a clean piece of disposable card. Apply a thin layer to the ¼ inch of exposed muffler outlet. Slide the copper o-ring onto the outlet and center (about 1/8 inch from the end). Apply more JB Weld to the outside of the o-ring. (Picture Four.) Using a clean piece of paper towel, wipe away most of the JB Weld. (Picture Five.)

**Step Six:** Carefully remove the masking tape while the JB Weld is still wet. This is where the fold-over will help. (Picture Six.) Allow the JB Weld to cure per the instructions. It is not like 30-minute epoxy; I give it 24 hours.

**Step Seven:** Install the silicone exhaust deflector on the muffler outlet and retain it in place with the zip-tie on the “north side” of the new copper o-ring.

These days my airplane requires very little cleaning, at least

from oil residue. About all I clean is mud splash when the field is soggy. That's going to be a tougher problem to solve. Mmm! On second thought, the Avistar might look good with wheel pants! →



# Aviation Quotes

“Whoever said the pen is mightier than the sword obviously never encountered automatic weapons.”

—General Douglas MacArthur

“You, you, and you ... Panic. The rest of you, come with me.”

—USMC Gunnery Sergeant

“Though I Fly Through the Valley of Death, I Shall Fear No Evil. For I am at 80,000 Feet and Climbing.”

—At the entrance to the old SR-71 operating base Kadena, Japan

“You’ve never been lost until you’ve been lost at Mach 3.”

—Paul F. Crickmore, test pilot

“The only time you have too much fuel is when you’re on fire.”

“Blue water Navy truism: There are more planes in the ocean than submarines in the sky.”

“If the wings are traveling faster than the fuselage, it’s probably a helicopter—and therefore, unsafe.”

“When one engine fails on a twin-engine airplane you always have enough power left to get you to the scene of the crash.”

“Without ammunition, the USAF would be just another expensive flying club.”

“What is the similarity between air traffic controllers and pilots? If a pilot screws up, the pilot dies; If ATC screws up, the pilot dies.” →

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for your

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[www.modelaircraft.org/insider/archives.html](http://www.modelaircraft.org/insider/archives.html)

## Learning to 3-D and 3-D Well

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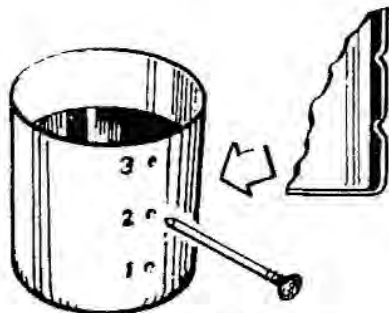
out of the maneuver easily in either an upright or inverted Harrier, which was mastered earlier. Exiting in this manner is generally safe and also allows the pilot to get back into Hover position more quickly.

Some things to avoid for the person learning to Hover:

- Many people try to enter a Hover by flying in at high speed and pop the nose up rapidly to enter the Hover. Unfortunately, in this case, the airplane has a large amount of energy to bleed off before it can hit the “sweet spot” and initiate the Hover.
- Don’t waste time trying to learn to Hover two, three, or even four mistakes high. When at that altitude, there is no way you can see the airplane well enough to make the right corrections and keep in the Hover.

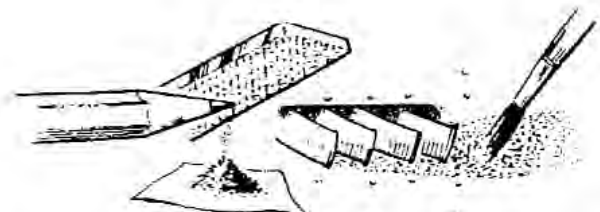
Continue this exercise until you can enter a Hover at will and enter and exit the Hover safely and fully under control. For extra practice, try entering a Hover from a High Alpha Knife Edge or Inverted Harrier. →

## Tips & Tricks



### NEAT MEASURING CAN

A smart way to calibrate the *inside* of an empty soda can so that the correct proportions of epoxy can be poured in for mixing—just indent on the outside of the can with a blunt nail, taking great care not to perforate the can.



### PAINT DETAIL

Make a little pile of fine pencil dust, then smudge this onto your model with a finger. This makes very realistic exhaust and gun soot marks. Seal with a spray of matt varnish. You’ll get more control if you use a soft, dry brush to apply the soot marks.

—from the newsletter for the First Weed Wacker Aerosquadron, Lakeside, California

Stay tuned to the March 2010 *AMA Insider* to see the results from the  
2009 *AMA Insider* Readership Survey.

## AMA Vision

We, the members of the Academy of Model Aeronautics, are the pathway to the future of aeromodeling and are committed to making modeling the foremost sport/hobby in the world.

This vision is accomplished through:

- Affiliation with its valued associates, the modeling industry and governments.
- A process of continuous improvement.
- A commitment to leadership, quality, education and scientific/technical development.
- A safe, secure, enjoyable modeling environment.

## AMA Mission

The Academy of Model Aeronautics is a world-class association of modelers organized for the purpose of promotion, development, education, advancement, and safeguarding of modeling activities. The Academy provides leadership, organization, competition, communication, protection, representation, recognition, education and scientific/technical development to modelers.

### ABOUT THE *AMA INSIDER*:

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