The AMA INSIDER
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for Newsletter Editors and Club Officers
Celebrating 75 Years of Model Aviation
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AMA
ACADEMY OF MODEL AERONAUTICS
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AMA Selects New Executive Director

Chris Brooks, APR, Academy of Model Aeronautics

The Academy of Model Aeronautics has appointed Dave Mathewson as its new executive director. Mathewson resigned his position as AMA president and leader of its governing Executive Council to accept the executive director position effective April 15, 2011.

Assuming the responsibilities of the AMA president, per the bylaws, is Executive Vice President Mark Smith. Smith will undertake these additional duties until a special election for AMA president is conducted this September concurrent with the regular annual AMA officer elections. The Interim Executive Director Joyce Hager will resume her duties as staff director and assistant executive director.

Former AMA president and newly named executive director, Dave Mathewson. Dave and his wife, Ginger, will be making the move to Muncie, Indiana, in June.

"Dave has been an exemplary leader for the AMA," said Smith. "The Executive Council is behind him 120%. For more than three years, Dave has been an outstanding president and we're very confident he will bring this level of success to his new role as our staff leader."

Mathewson will move from his home near Syracuse, New York, to Muncie, Indiana, on or around June 1. ✈

Insider's Technical Editor Retires

Ashley Rauen, AMA *Insider* Editor

Many of you have seen Ed McCollough's name over the years; especially in the AMA *Insider* where he's devoted his time and energy helping me produce a top-notch and technically accurate newsletter for the AMA members.

After approximately 8 years as Technical Editor of AMA *Insider*, Ed is retiring to devote more focus to his family.

"I just fly for enjoyment."
—Ed McCollough

Ed McCollough has been many things to the AMA. In 1982 he was elected to serve as District XI vice president. Ed held this post for 18 years. In 2000, Ed received the AMA Fellowship Award and the Distinguished Service Award. These were quickly followed by the Exemplary Award and Meritorious Service Award in 2001.

In his 1982 campaign statement, Ed wrote:

"I do not claim that I can solve every problem, what I do promise is that I will do whatever is in my power to do and that you will be kept informed of what I am doing. If you write me, I will answer. You will not be ignored."

Nearly 20 years after that statement, Ed has upheld his end of that bargain. In the four years I have worked with him, I have never known Ed to not return a message or answer a question that was brought to his attention.

I believe this small summation of Ed McCollough's services to the AMA barely does him justice. Unfortunately information on Ed has been hard to track down and collect. (an intensely private person?) I have already proposed to him a submission for our AMA History Program. I think Ed more than deserves having a place where all members can learn about him and everything he has done for our Academy.

Ed, on behalf of me and the Academy of Model Aeronautics, we say thank you for your years of service. ✈

May 2011 CONTENTS

From AMA Headquarters

Nominations Due ...

for AMA President, Executive Vice President, and Vice Presidents in Districts III, VII, and XI

Nominations for the offices of president, executive vice president and vice presidents in Districts III, VII, and XI are due at the Headquarters of the Academy of Model Aeronautics by June 16, 2011. Any AMA Open Member may submit a nomination.

A special election for president will run concurrently with the 2011 elections.

To be eligible to discharge the duties of AMA President, a nominee must be a Leader Member of the AMA and must previously have served as a member of the Executive Council or Associate Vice President or as a Contest Board Member for at least 1 year.

To be eligible to discharge the duties of executive vice president, a nominee must be a Leader Member of the AMA and must previously have served as a member of the Executive Council or associate vice president or as a Contest Board member for at least one year.

To be eligible to discharge the duties of AMA vice president, a nominee must be a Leader Member of the Academy and must reside in the district.

(Nominees and nominators will be notified by AMA Headquarters confirming receipt of nomination. If confirmation is not received within two weeks after you have mailed your document, contact Lisa Johnson at [765] 287-1256, extension 231.)

A letter of acceptance and a résumé of professional qualifications and model aviation experience from the nominee must be on file at AMA Headquarters by June 24, 2011, 15 days before to the published meeting.

Nominating Procedure Document
Relating to Article IX

Approved November 1, 2003

Candidate Guidelines:

(a) No person may nominate himself/herself for office.

(b) No person shall simultaneously hold two positions on the Executive Council. In the event a person holding an office is elected or selected to a second position on the Executive Council, that person must choose which of the two positions he/she will continue, such decision to be made within 48 hours of the announcement of the selection, or else the person so affected will be deemed to have selected to remain in the first office held.

(c) Incumbent is automatically placed on the ballot, provided that he/she has been properly nominated and accepted, except that a 3/4 vote against may withhold the incumbent's name from the ballot (see Bylaws, Article IX, Section 2).

(d) All nomination letters must be received at AMA Headquarters thirty (30) days prior to the convening of the Nominating Committee's Annual Meeting. If received by electronic mail or fax, it must be received by close of that business day at AMA Headquarters, Muncie IN.

(e) Candidate must be a legal resident of the district in which the election is being held; this does not apply to the office of President or Executive Vice President.

(f) Candidate must be a current AMA member with Leader Member status (other qualifications apply to the office of President and Executive Vice President, Article IX, section 3).

(g) No person elected to and serving as an active member of the Executive Council shall be paid for any regular column or article in Model Aviation magazine. Exception may be made for such articles as the coverage of special events provided prior arrangement was made for said article. Articles and columns printed in the "AMA News" section are not paid contributions. No paid columns may be submitted after the individual has been placed on the ballot.

It is strongly recommended that nominations be mailed by certified mail, receipt requested.

Candidate Acceptance:

(a) A letter of acceptance by the candidate must be on file at AMA Headquarters 15 days prior to the meeting; if by electronic mail or fax it must be received by close of that business day at AMA Headquarters, Muncie IN.

(b) Along with a résumé of professional qualifications and model aviation experience, your résumé should include, but not be limited to, the following areas of consideration. (Note: Campaign Statements to be delivered to AMA Headquarters 10 days prior to the Nominating Committee meeting in a sealed envelope. Those not nominated will have his or her statement returned unopened. Campaign Statements will remain sealed until after the Nominating Committee has deliberated and determined the candidates.)

Adopted January 2008

1. Management experience.
2. Financial background.
3. Insurance employment and/or expertise.
4. Legal background.
5. Technical background, including areas of aeronautics, electronics (especially in radio frequency propagation and usage), acoustics (as related to noise studies and analysis), and other areas of engineering.
6. Aeromodeling background must be noted. The individual will be required, if elected to national office, to deal with questions related to all areas of aeromodeling and should have a broad-based background.

It is strongly recommended that these documents be mailed certified, receipt requested. ✈

CLUB CORNER

Another Man's Treasure

Contact Jim at *sjwallen@tde.com*

Jim Wallen, *Insider* Club Column Editor

Most clubs have a tendency to keep doing the same things over and over. How does the old saying go? "Variety is the spice of life." Here is a new wrinkle for your club to think about ...

Everyone has in his shop a big inventory of aircraft, partial or whole, surplus building materials, and some old tools you do not use any more. "One man's junk is another man's treasure!"

Organize an auction for your club members that will incentivize them to clean up their shop. Present the unwanted items at a club auction with all of the proceeds going toward the club treasury. The winning bidders will be thrilled with their new treasures.

The social event at an auction is always great fun. Your shop will be better organized and cleaner. And by the way, the club can always use the infusion of funds.

Do you have some difficulty in recruiting officers for your club? Here is something to think about. Put together a list of past club officers and honor them at one of your club meetings. Bring some snacks to the meeting to make it a little more special. Let your membership know ahead of time about the event.

Without exception, everyone likes to be recognized and honored. The social aspect of this is always a hit and you may find it a little easier to recruit new officers for your club. ✈

LEADER TO LEADER

Who Are We?

Contact Rusty at *rustylm@verizon.net*

Rusty Kennedy, Chairman Leader Member Program Development Committee

This month Leader Member Program Development Committee Member Bill Malvey author's the Leader Member column for Committee Chairman Rusty Kennedy.

That's a pretty big question. But let's just focus on who we are as Leader Members (LM). LM is the highest level of AMA membership and is awarded to those individuals who have demonstrated an above-average interest and/or participation in AMA matters. It is recognition of past achievements and also an opportunity to continue to support the AMA and to be a leader in every sense of the word.

Each district has its District Vice President (VP) and a staff of Associate Vice Presidents (AVPs) who are responsible for meeting the needs of the AMA and its members in that district. However, 10-12 people cannot really cover an entire district; time and geography make that impossible.

This fact presents LMs with a perfect opportunity to be the extension of the VP and his staff, and to be the eyes and ears within their district.

You know your club, you know your issues, and you are the person closest to the action. Therefore, you are the perfect person to know what is really going on and to help the AMA by communicating what you know to those who can do something about it.

You are also the perfect person to help get the word out when important issues arise. The coming FAA small Unmanned Aircraft System (sUAS) regulations are one such situation. This may well be the greatest challenge our hobby will ever face.

I want to encourage all of my fellow LMs to step up to the plate at this crucial time. Contact your VP or AVP and let them know who, and where, you are. Educate yourself on the FAA issue and take that information out to your club, your field, and your friends.

There is a whole lot of misinformation out there, and we as LMs can be a real force to correct that and to help focus our fellow members on the task of dealing with the FAA to help protect our freedom to enjoy our hobby without interference.

Contact Bill at wmalvey@cox.net. ✈

AMA's Diamond Anniversary

This year, 2011, marks 75 years since AMA's inception. Join us from July 14-17 at the International Aeromodeling Center (IAC) in Muncie, Indiana, for four days and nights of fun and fellowship to celebrate AMA's Anniversary.

The Academy was born during the Golden Age of Aviation in 1936. Seventy-five years later the hobby and sport have changed considerably. What has remained is that AMA continues its leadership role helping the aeromodeling community in dozens of ways.

If you've always wanted to visit the AMA Headquarters, tour the National Model Aviation Museum, and fly at the 1,100-acre IAC, consider this the red carpet treatment. Join the RC, FF, and CL community in celebrating this remarkable achievement, as well as the 85th National Aeromodeling Championships. This special event will include fun-flying, guest speakers, entertainment, and exhibitors, all in one place. Just bring yourself, friends, family, and your favorite model!

For more information on AMA's 75th Anniversary, please visit ama75.com. You may also contact April Hathaway at (765) 287-1256, extension 516, or email aprilh@modelaircraft.org. ✈

Odds & Ends

Contact Jim at *jtiller@hotmail.com*

Jim Tiller, *Insider* Safety Column Editor

If you are in the market for new sunglasses for this flying season, I strongly recommend you get safety glasses. Safety glasses no longer look like the ones you wore in high school chemistry class. There are many styles and varieties. There are even bifocal offerings for those of you, like me, with aging eyesight.

There are many local and online sources with prices from $10 to $100. Regardless of the price, they must meet the American National Standards Institute (ANSI) requirements to have the label. Just make sure that the glasses you purchase meet the ANSI Z87.1 standard. This safety standard requires the frames and lenses have been tested to withstand a 150-foot-per-pound impact with a steel ball.

Make sure there is a .1 at the end of the standard. The addendum means the glasses meet an additional ANSI standard by having sufficient side-shield area to protect from lateral impacts.

The Waddington Effect

Reading my March 2011 copy of *Sport Aviation*, the EAA magazine, I came upon an article titled "The Waddington Effect." The subject, an analysis of scheduled maintenance, looked pretty dry, but I continued to read.

C.H. Waddington was a British biologist who did some technical analysis on B-24 coastal patrol air wings while displaced from his university job by World War II. He made quite a few recommendations that were adopted as standard procedures for the British U-boat hunters. These observations ran the gamut, including such things as repainting the airplanes from camouflage to solid white to reduce their visibility to U-boat crews against the often cloudy Atlantic skies.

The subject of the *Sport Aviation* article, however, dealt with his research into the air wing's maintenance records. Waddington's most significant contribution was to rebuke the idea that more frequent preventative maintenance checks keep the airplanes in the air. In fact, he noted, they are often counterproductive. This observation, named in his honor, is the Waddington Effect.

The Waddington Effect, supported by his research, is that the number of unscheduled repairs, called "gripes" by the British pilots, increased sharply immediately after each scheduled 50-hour preventative maintenance (PM) check. In Waddington's own words, scheduled maintenance "tends to increase breakdowns, and this can only be because it is doing positive harm to a relatively satisfactory state of affairs. Secondly, there is no sign that the rate of breakdown is beginning to increase again after 40-50 flying hours when the aircraft is coming due for its next schedule preventative maintenance event."

His work went on to help establish more expeditious PM schedules that actually increased the availability of aircraft in service by reducing down time.

One conclusion is: "if it's not broke, don't fix it." This is true, but I think there is another interpretation to Waddington's words.

How many times have we heard someone's story of taking something apart, putting it back together and having a few parts left over? Waddington's increase in breakdowns—at least partially—may be just the fact that it was taken apart and then put back together again. This is not an indictment of the skill and determination of the maintenance crews; it relates more to human mistakes, forgetfulness, and even faulty replacement parts. All of these can contribute to the increase in post-service breakdowns.

The lesson here is that we have to be very careful during this take apart/put back together event—especially if it is at the field.

If you find a loose muffler bolt you may have to take off the spinner, the propeller, and the cowl, tighten the bolt, and put it all back together. Are all the bolts Loctite, is the propeller nut tight, are the hatches secured? These are all concerns when doing repairs either scheduled or otherwise.

Here are a couple of other good ideas. I have a friend who delights in very large biplanes; ones that must be disassembled for transport. He has a checklist for each of those airplanes that puts the reassembly in sequence and makes sure the safety pins, wires, etc., are all connected properly.

Many modelers keep digital picture logs of construction and location of internal components. This can not only save time, but also reduce the amount of disassembly when maintenance is required. It is doubly important for guys like me who tend to put half-finished projects on the shelf and then come back to them months (or years) later.

Care should also be taken when making changes to computer radios. Sometimes changing one feature can disable another. Double-check all functions before flight.

Pilot logs are great. You can record how many flights on each airplane and all the maintenance history.

And last, look out for each other. My friends are great for looking over my equipment for potential problems or "incomplete" repairs. They even provide a replacement bolt, nut, or some CA if I need it. I learned early on not to take this as personal criticism of my skills or carelessness. In truth, they probably should remark about those things, but their biggest concern is my safety and their own. Two pairs of eyes are better than one. To avoid the "Waddington Effect" we have accept all the help we can get.

please see

On the Safe Side

... on page 5

From the Imperial Radio Control Club, Lakeland, Florida

Improve Your Flying Skills at Home: Part 2

John Burdin

In Part 1 we looked at a brief history and overview of the RC Flight Simulator as it relates to all levels of RC pilots. The single biggest benefit with an RC flight simulator is that all of this can happen on your schedule and while you're at home.

As we learn to fly, and our skill level and confidence increase, we all develop certain habits and tendencies. To help illustrate this, just take a look the next time you are at your local flying site at several pilots and watch them. Chances are they will fly basically the same flight pattern during most of their flights. Habit, habit, habit, and possibly some are missing skills. Notice how many of your friends can actually do both a left- and right-hand landing pattern. What about you?

The desired result from RC flight training is for you, the pilot, to be able to make your model go where you want it to go, and do it with confidence. Like most things we do, the more we practice the more confidence and skill we gain. Using a flight simulator at home could be the answer to making your days at the field more enjoyable and less terrifying.

There are many things that one can practice while on a flight simulator. If you are a "newbie" and you are happy to get your new ship up and back on the ground in one piece, there is obviously some work to. At this level some basic training is still needed, and don't be bashful about asking for help from your club instructors. This is also a great time to get on the flight simulator. Here is where you can practice your takeoffs and landings from the right and the left.

Try flying a large rectangle around your flying site maintaining altitude, keeping your model going in long straight lines, turning nice 90° corners, and doing this in both left-hand and right-hand patterns. This is making your model go where you want it to go. After doing this on the flight simulator, do it at your flying site. If you don't have a flight simulator this is still a great objective to work for. This format can also be used to complete figure eights and 360° circles in front of you from the flightline. These exercises are critical to gaining confidence and an increased skill level during the early stages of your RC flight training.

Now that you are getting in the groove, and having fun, it's time to learn some basic aerobatic maneuvers. How about a simple loop or a single roll? You probably don't need a flight simulator for these maneuvers, but you may want to perfect them on a simulator. From there let's try Knife Edge flight. How was that the first time you tried it with your model? Maybe we do need to go to the simulator to learn this maneuver so it makes it a lot less stressful when you try it again with your actual model.

From basic and advanced training let's try some more complex maneuvers. Let's try a slow roll, and a four-point roll. These two maneuvers require that you move both sticks in various directions at the same time. Yes it is confusing, and I have always advised pilots that it is tough to learn these maneuvers in the air. Because of the coordinated movement required with both sticks, this is a perfect opportunity to get in front of an RC flight simulator.

I remember when I was attempting to perfect the stick movements for both of these maneuvers many years ago. I could do them, but it was a mess! So I took my transmitter and sat in my favorite chair while watching TV. That's right, I closed my eyes and visualized my model and moved the sticks. I did this numerous times until it became routine, and when I tried it at the flying site, it was obvious that the off-site practice paid off. This was my preflight simulator, and today one may do this while flying on a simulator, and when it's time to go to the flying site, your confidence will be greatly increased and your skill level will soon follow.

Flying full-scale aircraft it's all about the seat time. Flying RC models it's all about stick time, and an RC flight simulator may save you time and money while dramatically increasing your "Fun-O-Meter" reading! ✈

On the Safe Side continued from page 4

Propeller Tracking

We all know it is imperative to balance a propeller before installing it on your airplane. It is also important to check propeller tracking whenever installing a new propeller. A propeller that is not tracking properly will cause vibration similar to that of an out-of-balance propeller.

Propellers can be out of alignment by manufacture, or from over tightening—especially with wood propellers. The problem is exacerbated in large propellers with multiple holes. Each bolt should be tightened the same amount to prevent a tracking problem.

Once your propeller is installed, it is quite simple to check the tracking by setting up an indicator, such as a square next to the propeller blade. Tie down the airplane if necessary to prevent it moving as you turn the propeller through a couple of revolutions. Each side of the propeller should show the same gap as you turn (see the picture). If your propeller is not tracking correctly, you can try sanding the hub a little on the high side and then retesting. With wooden propellers, sometimes just loosening the propeller, moving it a quarter turn, and retightening can solve the problem.

With large wooden propellers, you may want to retest the tracking when taking the airplane out of storage for the winter. Humidity and temperature changes sometimes cause warps.

If you cannot correct the tracking problem, it is better to set it aside than risk suffering some vibration related catastrophe. ✈

From RC Hobbies Online

RC Airplane Covering Tips: Getting that Great Looking Finish

John Adams

A beautiful, professional quality finish adds that all-important final touch to your model. It's what gets those extra stares at the field … and makes you proud of a job well done.

Some expert builders would have you believe covering is an art that takes years of experience to develop, but the truth is that you can achieve it with some basic know-how and patience. Understanding the materials you're working with is vitally important, and surprisingly, this is where many modelers make the biggest mistakes.

Each brand of covering has unique properties. So if you learn using one type of covering and then try using those techniques with a different brand, it often leads to marginal results. I've been using UltraCote exclusively for the last 15 years. UltraCote offers several unique properties that are advantageous over other film coverings, making it easier for me to achieve and maintain a professional finish.

Multitemperature, Maximum Control

UltraCote is unique in that different things happen at different temperatures. This allows for precise control during covering.

Covering with UltraCote becomes many times easier—with vastly improved results—when you understand what specific temperatures do to UltraCote, and when to use those temperatures.

220°F: Application

The adhesive is activated at just more than 220°. At the recommended application temperature of 220°, the adhesive reaches its full bonding strength. No shrinkage of the film occurs, so no distortion of the film takes place. Use the 220° application temperature when applying covering and when applying UltraCote trim pieces over UltraCote. Remember, if you iron is set at 220°, no shrinkage or distortion will occur, so there is no risk of distorting seams, trim lines, or trim pieces and full bonding strength occurs.

Watch out for … don't press! Heat liquefies the adhesive, not pressure. Let the heat do the work and avoid gouges. It's natural to want to apply pressure, but it doesn't affect the bonding strength. If you're using a sock (highly recommended), it will be necessary to go more slowly over a given area, as it takes longer for the heat to penetrate the material. Some modelers turn up the heat to 240° when using a sock, but I prefer to stick with the 220° temperature and go at a slightly slower pace. This creates fewer air bubbles.

300°F: Shrink Onset

At 300°, UltraCote will begin to shrink. Use this temperature after the covering is applied to tighten it, remove wrinkles, and remove imperfections. It's amazing how many wrinkles can be removed at this temperature, and it's important to start removing imperfections at this minimum shrink 300° setting.

UltraCote features a unique property that allows for a controlled shrink rate based on the selected temperature. While it begins to shrink at 300°, at 320° UltraCote shrinks 18% of its total shrink rate. It's important to use the minimum temperature necessary to achieve a smooth, wrinkle-free finish.

Most modelers don't realize that to further shrink most brands of film covering, it must be heated above its previously exposed peak temperature. In other words, if a covering was already exposed to 320°, it will be necessary to go above 320° to further shrink the covering. Use the lowest temperature possible to achieve a smooth wrinkle-free finish at the starts and you'll have the largest available shrink rate remaining should you later need to shrink the film.

Watch out for … stay away from seam lines and edges! Remember, 300° is well above the adhesive activation temperature, and seems will pull away. If you have some stubborn wrinkles close to the seam line, try this trick. Soak a washcloth in cold water, then fold it twice and place it on the seam line, covering the seam but exposing the wrinkles. With your iron at 330°, quickly apply it to the wrinkled area for about 5-10 seconds. The washcloth will keep the seam cool, and prevent it from pulling apart and distorting.

350°F: Maximum Shrink

At 350°, the maximum shrink is achieved. You won't use this setting very often, but it's important to know the total shrink temperature range. That's because the amount of shrink rate you'll have left is based on the temperature you use to shrink the covering.

For example, if you're shrinking your film using 320°, you'll find that 82% of the total remaining shrink is left. That's good! That means that, if in the future you need to re-shrink the covering, it won't be a problem. But a word of caution: use the high temperatures only as a last resort to shrink wrinkles and imperfections. In most cases, if you need to use this much heat, you'd be better off to just replace the covering with a new piece.

Watch out for … stay away from seams and edges. The higher temperature can cause bubbling and blistering.

Removing UltraCote

You may come to a point when you'll need to remove or replace a piece of UltraCote.

In many cases, the covering will simply pull away, but if you're having a tough time, use your heat gun. Lift a corner of the covering and then pull away while directing heat in the area to be removed. I just recovered a two-year-old Reebok CAP 232 using this heat gun technique and it looks as good as new.

Bubbles and Blemishes

When your airplane sits out on a hot sunny day, you may notice that the covering bubbles and wrinkles. This is common with all brands of film covering, no matter what the manufacturers claim. But getting rid of those wrinkles is easy. You'll need a heat gun, a covering mitt, a wet washcloth, and a fine straight pin.

Heat the affected area and notice how the air underneath the cover expands, making bubbles. As you continue to apply heat, moving in a 6-inch circle, it will release the adhesive bond. At first, several smaller bubbles will appear, but as you continue to work the area, the bubbles will

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join to form one large bubble. Now pop the bubble with the pin, and immediately wipe the area with a covering mitt to reattach the covering. It may take several attempts, and you'll get better after you do it a couple of times.

It's important not to stay in one place for very long with the heat gun, especially if you're working with a balsa-covered foam part as warping and damage could occur. If the affected area is close to the seam, use the wet washcloth trick to prevent the seams from distorting and pulling apart.

Preventing Heat Blemishes

Heat blemishes occur when the elevated temperature causes the trapped air in the wood to expand. With nowhere to go, the expanded air causes a bubble to form in the covering and stretches the film. When the air cools, the stretched covering remains. You'll notice this happens especially with dark colors like black or dark blue, and that this never happens on the bottom of the wing, but only the top where the sun heats the surface.

The solution? While several methods have been tried—like completely painting the wood structure with thinned white glue to prevent the air from reaching the surface—we know of only one method of preventing this from happening: don't leave your airplane in the sun! Seriously, get a cover or a tent or find some shade. Also, choosing light colors will prevent the intense heat buildup. Last summer during our hottest days, I measured the covering temperature on a dark blue airplane that had been sitting in the sun at 163°. If you keep them from getting hot, there is no problem, but, for those times when they do, practice the re-shrinking techniques mentioned, and it will only take a few minutes to bring back that pristine finish. ✈

From the Rogue Eagles R.C. Club, Medford, Oregon

Propeller Safety

Respect and alertness are mandatory if you want to keep all your fingers. If you continually ignore safety, you or someone close to you will be injured eventually. By adopting good safety practices we can minimize risk and enjoy our wonderful sport for many years.

The most destructive type of propeller injury, aside from being struck by a flying aircraft, is when the engine is operating at or near full throttle. At full speed, a .40-size, two-stroke engine with an 11 x 6 propeller can generate as much power as a 10-inch table saw. Just as a table saw demands your respect and attention, so does an aircraft propeller.

Before you mount your propeller or even start your engine, you should take a moment to review some basic pre-flight recommendations for propeller safety.

General Propeller/Rotor Blade Inspection and Preparation:

1. Look over for obvious nicks or gouges.
2. Flex it gently back and forth along its length and look for cracks.
3. If you find *any* damage, other than some minor scuffs at the tip, discard/destroy immediately.
4. Wood propellers cause less damage than composite propellers.
5. Remove the sharp edges from composite propellers using fine sandpaper. Just take off the edge. Do not alter airfoil.
6. Always use a balanced propeller. Vibration is the enemy.
7. Make sure the propeller arc is visible by painting the tips a contrasting color.

Ground Safety:

1. Always have someone hold the airplane while starting.
2. Use some form of eye protection, like safety glasses.
3. After starting, move around behind the propeller to remove the glow plug igniter and to make other engine adjustments.
4. *Never ever* reach over a spinning propeller.
5. Be conscious of the propeller arc. Do not let spectators stand in line with, or in front of, the spinning propeller and don't you stand there any longer than necessary.
6. If starting by hand, use a thick glove or chicken stick.
7. Use an approved spinner or propeller hub.
8. Before starting, be sure the propeller is on tight. If the engine came with backup safety nuts, use them.
9. Have a first aid kit stocked and available.

It's easy to forget these safety items when at the field and some say it's just too much trouble. But safety is everyone's responsibility! ✈

Tips & Tricks

Trick to using Robart pin hinges

I was installing Robart pin hinges on my T-34 Mentor. I can never get both sides perfect ... no matter how carefully I measure, so I came up with a neat trick to make them perfect.

On the stabilizer (in this case three hinges on each side) I mark out where I want the holes, then I clipped off ¼ inch of T-Pin tip and, using pliers, push the short pin into the stabilizer where I marked. I left about ⅛ inch or less sticking out (either end works, but I pushed the pointed end into the stabilizer).

Next I made sure the elevator was perfectly aligned with the stabilizer then pressed the two together. The pins left a mark on the elevator (or rudder) where to drill the holes. I guess you could use the same method with CA hinges.

—Dave Raczka, Brauer's Aviators, Pendelton, New York

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:*

The Academy of Model Aeronautics' AMA *INSIDER* is published electronically on a bimonthly basis for members of the Academy of Model Aeronautics. Its purpose is to create a network of information exchange between the Academy of Model Aeronautics-chartered clubs as well as the Academy of Model Aeronautics officials and chartered clubs.

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CONTACT US

We welcome your comments and suggestions about the AMA *INSIDER* Please send them to:

Newsletter Editor:
Ashley Rauen, ashleyr@modelaircraft.org
(765) 287-1256, ext. 228

Advisor:
Liz Helms, lhelms@modelaircraft.org

Director of Publications:
Rob Kurek, rkurek@modelaircraft.org
(765) 287-1256, ext. 220

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ashleyr@modelaircraft.org

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AMA Newsletter Editor
5161 E. Memorial Dr.
Muncie IN 47302

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Tel.: (765) 287-1256 | Fax: (765) 289-4248