



EVA EXHAUST SYSTEMS



The Newsletter of the East Valley Aviators

December 2010

*President – Mike Wyman (480)641-4810; Vice President – Dave Byrne (480)664-0446;
Secretary – Jason Neves (480)802-1000; Treasurer – Verlin Boeder (602) 803-6852;
Safety Officers/Board Members - Perry Barnett (480) 357-1868; Bruce Van Dyke (480) 288-6886;
Newsletter Editor – Leon Spielbusch (480) 577-2951; Training Coordinator – John Mitchell (480)983-0699*

Remember to Pay Your Dues!

Dues must be paid by mail or at the December meeting in order to maintain your membership and flying privileges for 2011. Both EVA and AMA membership dues expire on December 31, 2010.

Annual BOD Elections

EVA's Board members are elected in December of each year and hold their position for two years. This year the offices of Vice President, Secretary and one Safety Officer will be elected at the December meeting.

The following are descriptions of the BOD positions we will be filling. Please take a moment to read these profiles and consider contacting Dave Byrne with your interest in running for office as soon as possible. **This is your opportunity to get involved and make a difference for our club.**

Vice President. The Vice President shall act for the President in the President's absence and shall be the successor to the President should he/she become incapacitated or otherwise unable or unwilling to continue to serve in the office. The Vice President shall also preside at meetings of the Board of Directors and EVA general membership meetings in the absence of the President. The Vice President is also designated as the Chairman of the Membership Committee.

Secretary. The Secretary shall record and maintain records of all club business in the form of minutes

and present such to the Board or membership at each meeting. The Secretary shall be responsible for club communications with the AMA as well as all official outside communication relating to club business and activities. The Secretary shall keep the President and Vice President informed of all communications received whether or not executive action is required.

Safety Officer. The Safety Officer is a Member at Large and is responsible for maintaining a safe flying atmosphere at our flying field. The Safety Officer shall report at each meeting how the membership is adhering to the adopted safety rules and regulations. The Safety Officer has the

December 2010 Membership Meeting

Valle del Oro RV Resort
Wednesday, December 1, 2010
7:00 pm
Located at 1452 S. Ellsworth, Mesa

Directions: Go east on Highway 60. Exit at Ellsworth. Valle del Oro RV Resort is just north of the Freeway on the left. Tell the guard at the gate that you are here for the RC Club meeting and they will direct you to the meeting room. You can't miss it.

responsibility and the right to request any individual using any of the Club's facilities to cease such use due to violations of either the AMA Safety Code or the one adopted by the club. ■



President's Podium

Submitted by *Mike Wyman*

Hi Everyone,

Well it has been a busy month with returning winter visitors and the excitement out at the field is building. We continue to grow with membership. As we get busier out at the field this might be a good time to ask everyone to again review the new rules posted out at the field. Just remember that using common sense is always the prudent way to be safe to yourself and others around you.

Well enough pontificating . . .

We had a large presence at the Sun Lakes IMAC contest with 8 or 9 members participating. I don't know the actual standings but a good time was had by all who attended.

I would like to extend a warm welcome to the Southwest Model Aviators who have joined our club and have merged their expertise with our own.

The latest projection of activities up and coming for the club include a Turkey Fry, "First one to the field to fly in the New Year", the VDO fun fly, and of course the club meetings that are coming up. Don't forget to attend the December meeting as we need to vote in some new board of directors.

That's it for now. Look forward to seeing you at the meeting or out at the field.

Cheers, The Prez ■



Treasurer's Report

Submitted by *Verlin Boeder*

How about that Swap-meet turnout!!!! It's great to see such participation from our membership.

The "donations to EVA" table netted the club \$491.00. I plan to setup a table at the spring swap-meet for donations to the club of any of your "RC stuff".

EVA membership is the largest it has ever been in our history at 332 members. This is great evidence as to the quality of our flying club. With this large number of pilots, there will be lots of activity this season. We intend to make improvements at the field to accommodate more parking and flyers. Watch for work days at the field to get ready for the Superstition Challenge IMAC contest on Jan. 15 & 16, 2011.

October 1st is the beginning of EVA membership renewal for 2011. Renewal time is from October 1st to December 31. After Jan. 1st, 2011, membership expires and individuals lose flight privileges until their membership is renewed. 2011 membership renewal remains at \$40.00 for individuals and \$50.00 for a family membership.

The membership application form used for years has been revised for use in membership renewal as well, if you so choose or if you have information to update such as email, phone number, address, etc. It's not required to use this form for renewal but if you have changes this gives me a permanent record.

New membership applications are available at the field or on line at www.eastvalleyaviators.org Those members encouraging new people to apply for membership in EVA, be sure the new person has a current AMA number. **I cannot make a club badge unless I have a current AMA number.** EVA does not prorate membership dues at any time during the year. Dues are only \$40.00 for an individual, \$50.00 for a family (spouse and children 17 or younger) per year.

Send applications to: EVA
14045 South 40th Street
Phoenix, AZ 85044

AMA renewal or enrollment can be done quite easily on their website; www.modelaircraft.org, go to membership services and click on membership renewal. Also by phone: 1-800 435-9262. If you pay by credit card a verification form will be sent to you by FAX or email.

A new shipment of club hats and t-shirts is in. See **Paul Curtindale** at the December meeting or at the field as he has what you need and will sell it to you with a smile.

Happy flying and smooth landings, let's all enjoy a great hobby. – *Verlin* ■

Secretary's Report

Submitted by *Jason Neves*

No report.

2010

Superstition Challenge IMAC Contest


January 15-16, 2011

On January 15-16, 2011, our club will be hosting the 2011 Superstition Challenge IMAC event. Like in years past, this event will be the first IMAC points contest of the southwest 2011 season. As you recall, we have held similar IMAC events in 2007, 2008, 2009 and 2010. Like last year, we anticipate an excellent turnout of contestants for this event. If you would like to participate or volunteer, please contact the Contest Director: Mike Wyman (w1dry@earthlink.net). ■

Battery TIP

Batteries, like us, only live so long and with all the battery packs you've collected... are you going to wait until the prop stops spinning and practice your dead-stick landing skills?

When you get your next battery, put an address label on or around it and enter that day's date on it. Take this a step farther and put a dot or X on it every time you charge it. That way you can equalize your batteries with each other and always know just how old each one really is.




Feel free to place either of these lovely items on your Christmas list.



Seasons Greetings

Balancing



ACT

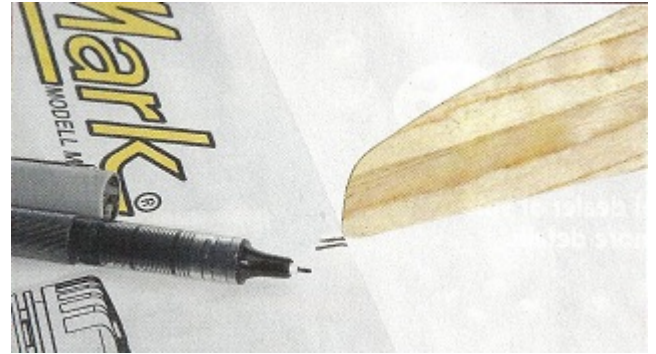
Most R/C modelers are aware of the advantage and actually do balance their props. If not, they should be. The vibration that can develop while flying at 3/4 throttle will go unnoticed from your vantage point on the ground, but will slowly take your fuselage apart which will make it really hard to land gracefully on some cataclysmic day.

Another phase of balancing *that* which spins, is checking the prop-tip-track. Well,...duhh...what?

Prop tips that don't track the same can set up a harmonic vibration just as bad as an out of balance prop. Just relax here a moment. Actually it's quite easy to check and quite easy to adjust.

First remove the glow plug so the engine can turn freely. Place a box beside the prop swing and where the tip touches it, make a mark. Rotate the engine 180 degrees and see if the other tip touches the same mark. If not, make another mark on the box. If there is more than a few thousandths between them, the prop-hub (of the prop which rests against the face of the crankshaft) needs to be trued with a file. Remember; that draw-filing will produce a nice flat surface verses a rounded one if you push the file away from you.

Most of the plastic or composite props will run pretty true, but you may be surprised at how far out of track some of the wood props can be.

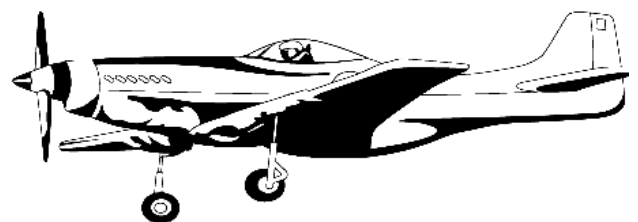


Balancing Act

4-TIPS for the Perfect LOOP

Next time you're out at the field, practice these easy tips and pretty soon your **loops** will look better than everyone else's.

1. Start in a slight dive to pick up speed, then enter the maneuver from straight and level. If the wings aren't level, the maneuver will become a corkscrew kind of thing.
2. As you pull the model's nose up, you may need rudder to correct its heading. As the airplane goes over the top and enters inverted flight, keep the wings level.
3. Coming down the back half of the loop, the model will gain speed, so throttle back a little. Adjust the elevator accordingly to keep the loop nice and round.
4. As you exit the loop (at the bottom) and return to straight and level, you should be at the same altitude and heading as when you started. A comfortable-size loop is one that takes 3 or 4 seconds to complete.



On the Lighter Side.....

One night, a Boeing 747 was flying above Glasgow. On board were five people: the pilot, Michael Jordan, Bill Gates, the Dali Lama, and a rather high (in several ways) hippie. Suddenly, a loud explosion was heard from the luggage compartment, and the passenger cabin began to fill with smoke. The cockpit door opened, and the pilot burst into the compartment.

"Gentlemen," he began, "I have good news and bad news. The bad news is that we're about to crash in Edinburgh. The good news is that there are four parachutes, and I have one of them!" With that, the pilot threw open the door and jumped from the plane.

Michael Jordan was on his feet in a flash. "Gentlemen," he said, "I am the world's greatest athlete. The world needs great athletes. I think the world's greatest athlete should have a parachute!" With these words, he grabbed one of the remaining parachutes, and hurtled through the door and into the night.

Bill Gates rose and said, "Gentlemen, I am the world's smartest man. The world needs smart men. I think the world's smartest man should have a parachute, too." He grabbed one, and out he jumped. The Dali Lama and the hippie looked at one another. Finally, the Dali Lama spoke. "My son," he said, "I have lived a satisfying life and have known the bliss of True Enlightenment. You have your life ahead of you; you take a parachute, and I will go down with the plane."

The hippie smiled slowly and said, "Hey man, don't worry. The world's smartest man just jumped out wearing my backpack."



Dale enjoying a little snack after flying.

Crashless Flying

Even if you are an expert pilot of RC airplanes... if you fly them long enough, you will most likely experience a crash. However, some pilots seem to crash often... too often. Let's explore some of the causes and perhaps minimize crash opportunities.

Split Second Delay Crashes:

High speed creates high loads on the plane's control surfaces and servos, causing a possible *split second delay* of control after a stick input. A split second delay is all that is needed when your plane is in some maneuver heading toward that ground at 100 mph (147 feet per second). Point the transmitter antenna at the airplane and you can create a cone of silence at your receiver, which can create a control response delay.

Pilot Orientation Crashes:

Another cause of crashes is a non-mechanical one: *pilot orientation*. If you are low and fast and loose orientation, expect a crash. Have your airplane flying level or in an up-attitude while flying close to the ground.



Distraction Crashes:

Another non-mechanical cause: *distraction*. If you allow yourself to be distracted, even for just a couple of seconds, you're likely to crash. If you were stung by a bee, step on what you think could be a snake, or have another critter eating your pant leg, put your plane in a series of tight loops with full up elevator, then take care of your business and your airplane will still be there when you can tend to it again, not two miles down the range. This may be overly simplistic, but you get the general idea. All pilots get distracted sooner or later. Think out in advance what you will do so your fingers will react when you do get distracted.

Elevator Crashes:

Let's spend some time with the *elevator*. This is the most important crash prevention control on your airplane. First, the elevator itself must be built from good material. Too hard and brittle is not good; too soft is not good either. In today's world, the high quality ARFs take care of this. Use your best servo in the elevator. Buy some good servos for your primary control surfaces. Next, use only strong, stiff rod linkages from the servo to the control horn. Fiberglass rod systems are great for long runs. Strong, stiff wire works well for the short runs. It's very important to keep the bends in the wire to a minimum. Any movement or flex here could allow surface flutter, and also cause a *split second delay* crash. The plastic clevises and control horns supplied in many kits leaves a lot to be desired. Dirt and grit will weaken the plastic clevis pin very quickly, and generally they are too soft and flexible. Consider using metal or the super strong carbon fiber clevises and control horns. Metal-to-metal contact is taboo, but most metal systems have an insulator to prevent any metal-to-metal contact. Always install a rubber or nylon safety "keeper" on this and all your clevises. Crashes are extremely frustrating and expensive. With a better understanding of what causes crashes, we can more easily prevent them.

Servo Damage Crashes:

Servos can be unknowingly damaged by a hard landing or by bumping a control surface while loading the airplane into or out-of a vehicle. What happens is the servo's gears get cracked but it continues to operate until subjected to flying loads, then the gears break. After a hard landing or a

bump, and from time to time, check your servos by applying slight hand pressure to the control surfaces while operating the servo. If it takes hand pressure, it will usually stand up to the flying loads.

Take-off Stalls:

The airplane will most likely want to turn to the left during its *take-off*. One method to prevent this type of crash is a higher-speed takeoff run and a shallow climb after liftoff until maximum climbing speed is reached. Use rudder to maintain direction with very careful use of ailerons to stay level. If the engine quits on takeoff, don't try to turn back to the runway. Keep the airplane heading into the wind and make your landing.

Landing Turn Stalls:

A very common pilot error occurs while setting up a landing approach and performing too steep of a turn from downwind to final. Airplanes stall at a much higher speed in a bank, and a steep bank into the wind will quickly slow the airplane and cause it to stall. Keeping turns shallow on your approach will help prevent this type of stall, and using rudder to turn will also help keep the turns shallow and reduce the additional drag of the ailerons. This becomes especially critical if landing dead stick.

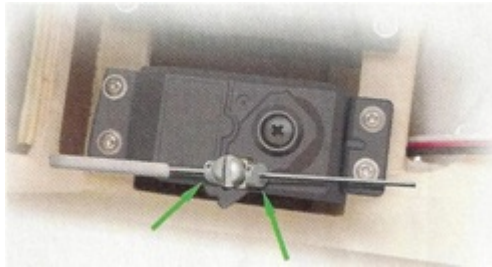
Inspection beforehand:

Routinely check and tighten motor and engine mounting screws. Carefully inspect and test all flying surfaces. Pull on them to make sure all the hinges are secure. *NOTAM, Lewis Jordan*



Worried about those quick connectors slipping?

Here's a sure-fire way to prevent that and add only a small amount of weight. Just add a small wheel collar on each side of the connector and tighten the set screw down. For even more security on larger planes, file a small flat notch on the wire where the set-screw seats.



How to recover from a "stall" and fly another day

The stall, or more accurately the inadvertent stall, has probably caused more RC airplanes to crash than any other cause. The safety of your airplane depends on your knowledge of its slow-speed handling and stall characteristics.

To minimize the number of crashes due to stalls, the pilot must understand the principles of what makes a plane fly and how to make practical use of that information.

First, we must understand how the wing supports the plane in flight. As the plane moves through the air, the amount of lift is determined by the particular airfoil and its angle of attack (AOA). The AOA is the angle formed by the wing's chord line and the oncoming airstream.

The other primary factor in the amount of lift is the speed of the airfoil through the air. A stall will occur when the AOA exceeds the wing's critical angle of attack. At this angle, the lift suddenly decreases and the drag increases, resulting in the plane losing altitude very rapidly.

The pilot has control over the AOA with the elevator. For example, if the pilot inputs up-elevator the tail drops and the nose rises, which increases the wing's AOA. An important point to note is that the plane can be moving in any direction, including straight down, and a stall will occur if the AOA is exceeded.

The only way to recover from a stall is by decreasing the angle of attack below the critical angle by pushing forward on the elevator. By learning your plane's slow speed and stall behavior, you should be able to avoid getting into an unintentional stall situation in the first place.

Take your plane up high; reduce the throttle while increasing the elevator deflection to maintain your altitude. As it slows, note how the plane reacts to your control inputs, and when it does stall, note if a wingtip drops or if it stalls straight ahead. Recover from the stall by lowering the nose to gain flying speed. Adding power will speed the recovery and minimize altitude loss. Practice this until you can recover with the wings level. All models will stall differently, so you'll want to learn the basic characteristics of all the models in your fleet. This will increase all of your flying skills tremendously and will prevent you from becoming a victim of this common crash. *Model Airplane News*



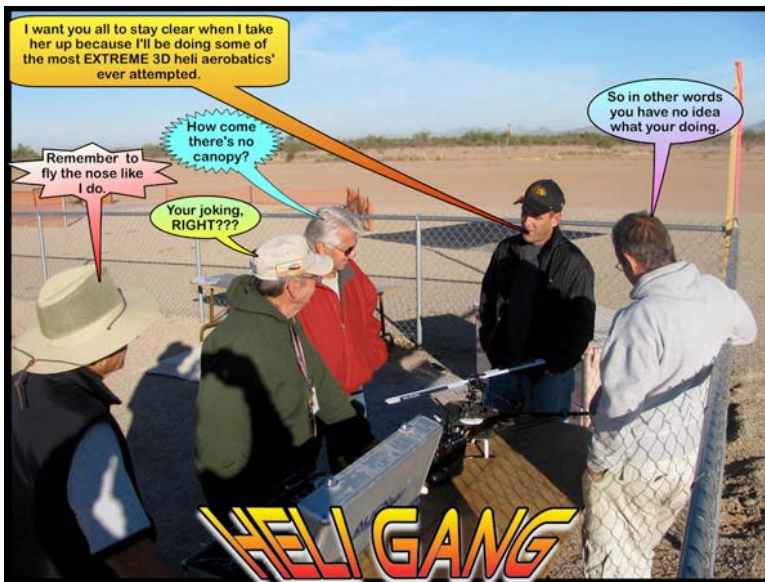
Ready for a great RC helicopter adventure?

Flying a model helicopter is rewarding, but rewards only comes with dedication and patience. If you want to go out and buy a helicopter, construct it in one day, and then zip around the sky like an expert the next day, then helicopter flying isn't for you.

Cost is another great factor to consider. As with planes, this hobby is by no means cheap. Crashes will happen, and when it does, you could be spending several dollars to several hundreds on repairs and spares. You have to be mentally prepared to put that amount of money aside for the rainy days.

Lastly, flying a model helicopter is safe only if you are safe. The rotating main blades of the helicopter spins at 1,500-3,600 rpm, with a blade radius of up to three feet. The speed of the blade tip is roughly 200 mph! At that speed, it will easily cut thru grass, skin and bones. Never fly a model helicopter until you are completely and definitely sure that you will be able to control the helicopter. And in the event that you lose control, no one, including yourself, is in the way of the ravaging loose runaway helicopter.

helifever.com



Picture and graphics by Jerry Dudeck

Nose In Hover



The ultimate goal, or close to it, the Nose in Hover. Why is this so hard? I can hover like nobody's business, IF the tail is pointing at me.

Well in the nose in hover, three of your four controls are reversed. For instance, you want the helicopter to move right? Give it left cyclic. You want the helicopter to come towards you? Give it forward cyclic.

This may sound easy, but it is a lot more difficult than meets the eye.

Your forward/back cyclic control is reversed. One thing that confused me when someone told me this, is that when you give it forward stick, the helicopter is not going to go backward. It is still going to go forward, however when you are in a nose in hover, going forward is going to bring it closer to you. This is the reversal. Giving it back cyclic will move the helicopter further away, while giving it forward cyclic will bring it closer to you. Opposite of the tail in hover.

Your right/left cyclic control is reversed. If you wish to move the helicopter to the right, you must apply left cyclic control. If you wish to move the helicopter to the left, you must apply right cyclic control.

An easy way to remember this is to simply think, stick under the low blade. This will keep your helicopter nice and level.

Your tail rotor is opposite also. If you wish to have the helicopter point to the right, you must apply

right tail rotor. This may sound correct, but remember in tail in hover, when you want to point the helicopter to the right, you give it left stick. That's why, you fly the nose. Well, remember while in nose in hover, fly the tail. If you want the tail to go to the right, give it right stick. If you want the tail to go to the left, give it left stick. Just the opposite of what you did in the tail in hover.

Remember – Stick under the low blade. - helifever.com

Frequency Control

ALL transmitters are to be kept in the transmitter impound unless you have claimed the appropriate frequency by placing your Club Badge on it. No exceptions. If you are using the electric, helicopter or engine test areas, please attach one of the appropriate pins so we know where you are.

When you are thru flying return your transmitter to the impound and claim your badge so that the frequency is available to others.

REMEMBER...Whoever has the frequency pin WINS. If you turn your radio on, either on purpose or accidentally, and cause another plane to crash YOU are responsible. ■

General Membership Meeting Schedule

The East Valley Aviators general membership meets six times each year on the first Wednesday of the month. Meetings are held in the months of January, February, March, May, October, and December. An issue of the Exhaust System newsletter will be published on the club's web site the week before each of the meetings. We will publish the location of the meetings in our newsletter. We are always looking for any input from our members, if you have any articles, pictures or classified ad (free to club members) you would like to see published please contact Leon Spielbusch lspielbusch@hotmail.com (480) 218-5414.



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WED - 12:00pm - 6:00pm
SUN - 12:00pm - 5:00pm

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Michael Stevenson, e-source
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www.superstitionhobbies.com

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(Guadalupe and Rual)
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All pictures courtesy of Jerry Dudeck







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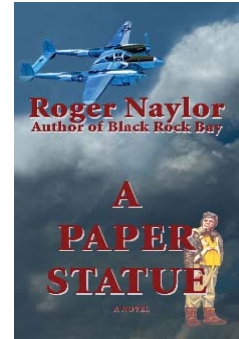


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Like an exciting, realistic warbird story? If so, you're looking for EVA member Roger Naylor's latest novel, **A PAPER STATUE**

P-38 Fighter pilot Lee Marks tastes the blend of excitement and fear as he enters the unusual air war over 1944 New Guinea. Faced with deadly Japanese fighters, killer storms, and a devious, self-serving commanding officer, Marks must quickly learn the idiosyncrasies of all if he is to survive.

The rousing story traces the Allied course of action in the unorthodox New Guinea campaign, and it explores the war, the men who make the war, and the natives who find themselves the hosts. The novel is sprinkled with GI humor, the uplifting ingredient that kept it all together, and it flies on the wings of the P-38 Lightning, Lockheed Aircraft's pinnacle of WW II engineering.

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