



THE FLYER



From The President



Happy New Year. While the weather has been quite cold so far this January there have been some nice flying days at the field. Many of us modelers are in the middle of what we call the building season, taking the presents from Christmas and turning them into flying aircraft. It will be interesting to see the results as they come out to the field.

The AMA held its convention in Ontario on the weekend of the 14th. It was good to see the club turn out in such numbers. The show was packed with all sorts of new and exciting products, though, I bought a little more than I had planned. I was disappointed that there were no new kits being brought out. I guess with all the new ARFs that the art of building is dying out. I found a kit at the Skyshark booth that I liked, a 1/9th scale TBM Avenger. The detail laser cutting on the wood is fantastic. This will be a long-term project but I hope to get it flying soon.

Dave Wiseman is back out at the field after his surgery. We all wish Dave well in his continuing convalescence.

The Spotter rule was voted in at the last meeting. In case you don't know about the rule, all it means is that with more than one plane in the air each pilot should have a spotter at the pilot station with him. If you see pilots at the station with out spotters step up and help. This is a good way to get to know your fellow pilots better as well as all the safety reasons.

The WWII combat is starting to catch on as there are more combatants showing up at the field. We should be starting the contests some time in the early spring when there are more planes completed. If you are interested in finding out more get with one of the board members for the rules and regs.

I guess that's all for now ,remember if there are any questions ,comments or ideas feel free to talk to any of the board members . IT'S YOUR CLUB See you at the Ranch Glen

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NEXT MEETING

- **Tuesday**
FEB. 14
6:30 PM
Lil Bit
Country
Café
Victorville
Ca.

A note from the Treasurer:

I hope everybody had a safe and fun new years holiday!

With the new year upon us, we are looking at colder weather and less flying days. Please, always keep in mind that a good way to keep in touch with the other members of the club and club activities is to come to the monthly meetings. Many of our members come regularly to the meetings, but there is always room for more, and the input of all the members is always desired.

Chuck and I are looking into having a club Christmas party this year and invite any suggestions or comments anybody has. Please feel free to call us.

The treasury remains strong at a little over \$7,000.00. It is great to see how far this club has come in the few years it has been in existence.

Keep talking to friends or family that may know someone who has some land we might be able to use as a flying sight. If you have any good leads let Dave Pearson know so he can follow up. We will need to seriously pursue this soon as the development of Bear Valley Road continues our way. Lets be prepared instead of taken by surprise.

We have all sizes of club t-shirts and large & small club stickers for sale. Lets show our club spirit and wear our t-shirts proudly and put stickers on our planes, flight boxes and vehicles. See Chuck or Chris Atkins at the field or at the monthly meetings to purchase these items.

We would like to thank all the club members for their efforts in supporting the club.

Keep up the good work.

The next club meeting is on February 14th at 6:30pm. I hope to see you all there.

Mark your calendar for this date and plan to be there to help support your club.

See you Next Year



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Life Lessons:

*If you want to grow old as a pilot,
you've got to know when to push it and when to back off.*

- Chuck Yeager

Some more "for what it's worth"

This time I'm going to discuss flight control function and a little about stability.

I'll start off with the rudder. What is the Primary purpose of the rudder? To control and induce yaw for sure, but the primary purpose of the Rudder is to compensate for adverse yaw induced by the ailerons. Even the Wright brothers found the need for yaw control because wing warping for roll control produced adverse yaw. Adverse yaw being the yaw away from the desired direction of turn.

Adverse yaw is created by the ailerons in a banking maneuver. To bank an airplane one aileron is displaced down and the other is up. The down aileron increases the lift on that

wing tip area. Producing increase lift also produces additional drag. This additional drag pulls the nose of the airplane away from the desired direction of turn. The up aileron reduces the lift on that wing area and also reduces the drag. Again, allowing the nose to swing away from the turn. When the desired bank angle is established and the ailerons returned to neutral, the need for rudder input is eliminated, or at least reduced.

Of course the yaw produced by the rudder is used for other purposes also, propeller torque on take-off, slips, entry and recovery to and from spins and during skydiving for changing headings without banking, [on final approach to the drop zone], and in multi-engine airplanes the rudder is used to compensate for differential thrust. The need for rudder input can be greatly reduced by trimming the wing, with the dead engine, up a few degrees. By trimming the dead engine wing up a few degrees you reduce the need for rudder input thereby reducing the drag created by the off-set rudder which allows the fuselage to more closely align with the direction of flight which will improve the overall airplane performance. How this works is, the wings have dihedral. Wing lift is created perpendicular to the wing surface which means the lift is angled in towards the center of the airplane. By lifting the wing with the dead engine up a few degrees you have banked the airplane toward a turn away from the dead engine. This turning tendency allows for the reduction of rudder input, improving airplane performance. I'm sure everyone knows, unlike a boat, the rudder does not turn the airplane, the lift does. And it takes all three controls to turn an airplane and hold its altitude. Here is why. In straight and level flight thrust equals drag and lift equals gravity. Since lift is produced perpendicular to the wing surface, banking the airplane also banks the direction of lift, pulling the airplane around in a turn. With the lift banked away from up there is less available to counter act gravity and the airplane will start down unless something is done to increase lift to equal gravity. That something is the use of the elevators to increase the angle of attack of the wings to create the necessary additional lift to hold altitude. So you see you use the ailerons to establish a bank, you use the rudder to compensate for adverse yaw, you use the elevator control to increase the angle of attack to hold altitude. In a very steep bank it may become necessary to use a fourth control to hold altitude, engine power may have to be increased.

And finally roll stability is achieved by dihedral. As stated above lift is angled in toward the center of the airplane. If one wing gets bumped up the down wings lift is directed more directly up opposing gravity and the up wings lift is directed away from the pull of gravity. This produced uneven lift opposing gravity and the lower wing will fly up until the lift of both wings is again equal.

By placing the center of lift behind the center of gravity we would have an airplane that would go more nose down the faster the airplane went and nose up, or at least remain level, as the airplane slowed. To correct this undesirable condition the horizontal stabilizer is designed to produce a downward force. This results in the nose being forced in an upward direction when the airplane speeds up and the nose dropping as the airplane slows. This helps to prevent excessive speed when power is added and helps maintain a safe airspeed when power is reduced. An airplane is trimmed by the pilot for a certain speed and adding or reducing power will result in the airplane attempting to maintain trim speed.

Engine power controls altitude, elevators control airspeed. Sail planes notwithstanding, you are not going up without power. With the elevators you can control the speed from stall to structural limits.

Some of the above information can be used to design and/or modify our model airplanes.

Have Fun,
Dean Whisler

