

Hot Air



Message from the President

May, 2012

Busy times. Work continues to get in the way of fun from my point of view. Unfortunately, I missed the April meeting and had to call in the relief pitcher. Fortunately, the relief pitcher is pretty darn good and took over the reins for the second month in a row. A big thanks, Jerry, for your support to the club.

The only flying I have been able to do has been restricted to the occasional Sunday Rocky Point fling. The flying is good but the lack of camaraderie results in a few flights and a quick departure. I sure miss flying at the fields and catching up with my fellow PSF'ers. I think that is the main reason I like the club. Being around a group of great guys that share my interest in all things airplanes is a super way to enjoy the hobby. I am looking forward to completing the current activity at work and freeing up a little more time to fly at the fields.

If you haven't been following the efforts of the AMA to secure language in the new Federal Aviation Administration rules which had the potential to restrict our ability to fly, the really brief summary is that the AMA succeeded in

protecting our interests. The AMA membership also deserves a strong round of applause in their efforts to let their Congressional representatives know we are out here and need protection. The new law, signed by President Obama, basically states that the FAA is required to protect our rights in model aviation. This is one of the most tangible things the AMA has done in all my years in the hobby to help the average modeler. (My two cents worth...)

Next Meeting

**Wednesday,
May 2nd
7:30 pm**

**La Romeria Park
19501 Inglewood Ave**

The Del Cerro Fun-Fly will be this Saturday, May 5th. How did it get to be May already? The Entradero Fun-Fly will continue to be held on a Friday during baseball season. This month's Fun-Fly will be Friday, May 25th. If you have any issues, comments or concerns please come to this month's meeting, Wednesday May 2nd, or contact one of the club officers.

Upcoming Fun-Flys

**Del Cerro May 5th
Entradero May 25th**

Hope to see you at the meeting or at one of the fields.

- Jeff

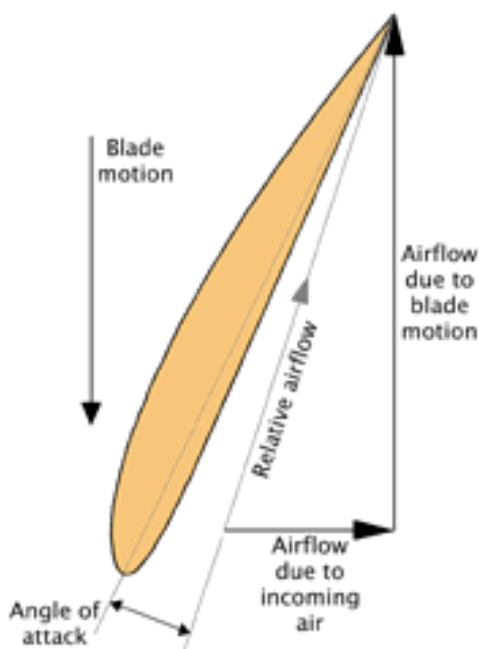


Notes From The Vice President

Airflow

As was mentioned earlier, a propeller is really a rotating wing, and as such, is subject to the same aerodynamic effects as a wing. As a propeller rotates, the blades meet the oncoming air. The angle at which this happens is a function of how fast the air is moving towards the propeller and how fast the propeller is turning. If the air were stationary, the angle of attack of a given section of the blade would be exactly equal to the blade angle at that point.

Part #2 in our discussion of propellers



The relative angle of attack of the airflow to the propeller blade depends on the rotational speed of the blade, and the speed of the incoming air flow.

In reality, the air is not stationary, even if the plane is not moving, because the air accelerates before it reaches the propeller. As a result, from the blade's point of view, the air is meeting it at some relatively low angle, which is the blade's angle of attack.

Like any wing, a propeller blade can stall if the angle of attack is too high. This can happen with a very highly pitched blade when moving at too low an airspeed. It is for this reason that high pitch propellers, like a 10×9 or 12×12 often exhibit poor performance at low airspeeds. A plane equipped with such a propeller will often exhibit poor launch or take-off performance, and then come alive once the model is up to speed.

Also like a wing, if the angle is too low, no lift will be produced. A low pitched propeller on a fast plane (for example, 8×3, 12×5, etc.) can get to the point where it produces no thrust (in a dive, when gravity is providing the force to keep the plane moving). In high speed level flight, thrust from such a propeller can drop too low to overcome drag long before the plane has reached its designed flying speed. According to Astroflight's Bob Boucher, such propellers should be relegated to stirring paint. Of course, this statement was made in the days before slow-flyer models, which often sport very large low pitch props.

For many aircraft, a good compromise is a propeller with a diameter to pitch ratio of about 3:2 or 4:3 (for example, 8×6, 9×6, 10×7, 11×8, 12×8, 12×9, and so on). Such a propeller will become unstalled at relatively low airspeeds (usually below the model's stall speed), and will remain efficient at relatively high flying speeds.

In many full scale aircraft, the propeller has in-flight adjustable pitch, so that it can have a low pitch for maximum take-off thrust, and a higher pitch for optimal cruising efficiency. Some small full-scale aircraft can be fitted with one of three different propellers depending on the need at the time: low pitch for getting heavy loads off the ground but slow cruising, standard



for general use, or high pitch for light loads but fast cruising.

Three or More Blades

Most model propellers have only two blades because a two bladed propeller is generally more efficient than a larger propeller that produces the same thrust and air speed. A common misconception is that this is due to the blades operating in each others' wakes, but this is only a small factor. Remember that the air in which the propeller is turning is moving away from the back of the propeller, so the wake from each blade will move backwards too, leaving clean air for the next blade to bite into. A reasonably pitched propeller would have to have a large number of blades before they start interfering with each others' air.

That being said however, a multi-bladed prop does have more induced drag caused by tip vortices (air spilling over the blade tips, just like wingtip vortices on a wing), because there are more tips. So, overall efficiency is lower, in much the same way that a biplane (even one without struts and bracing wires) is less efficient than a monoplane with the same wing area. A multi-bladed prop often has a larger total blade surface area than the equivalent larger two-bladed prop, further reducing efficiency (due to parasite drag).

For best performance, reduced noise, and increased motor life, all propellers should be balanced before use. I use a Top Flite magnetic balancer, which due to its nearly frictionless bearings, will show even the slightest imbalance.

Multi-bladed propellers do have the ability to turn power into thrust and airspeed in less space than a larger two-bladed prop though, which makes them advantageous when ground clearance is an issue (or fuselage clearance for wing or pylon mounted propellers).

Burmese Spitfires Found

Here's a [link](#) to a website with the latest information on some WWII-era Spitfires that were buried in Burma during the war. They were buried to hide them from the Japanese and then more or less forgotten. The latest development seems to be that the guy who found them after a 15-year search is about to lose a fight with the British government over who gets the first 20 unearthed.



The "Friday Fun-Flys" at Entradero seem to be a big hit! Last week, we had a gaggle of club members flying airplanes and helicopters of all types. Come on out and enjoy the field free of baseball!

-Editor



Random Shots...



B-17
"The Aluminum Overcast"
visits Torrance airport...



The business end of
a local T-6 Texan...



B-17 squadron at a
slightly smaller scale...



Dave's Dauntless on
display...

March Raffle



*This month, we will hold
another excellent raffle
at the club meeting - but
only if enough members
show up to participate.*

Come on out for the fun!





Minutes from Last Meeting - April 4, 2012

Jerry Lake called the meeting to order at 7:30 pm.

BUSINESS:

1. There was one visitor in attendance: Richard Pouncy
2. John Vogel brought up the possibility of another RPV flying site for small electrics as Abalone Cove. John Spielman will query the city on it.

SHOW AND TELL:

1. Richard Pouncy showed a bi-motor gyro controlled flying "thing" build from Home Depot parts and a programmable microprocessor.
2. Alan showed his balsa hand launch fitted Park Zone Ultra Micro J3 Cub motor and radio.
3. Chet Schmidt showed his 4 cycle gas Sundowner.

RAFFLE:

Meeting attendance was good so we had another big raffle this week.

Club Officers and Volunteers for 2012

- President: Jeff Chambers
310-370-0771
- Vice President: Jerry Lake
310-370-6697
- Treasurer: Mike Lewis
310-987-8178
- Secretary: John Spielman
310-378-0951
- Newsletter: Chris Newton
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