

Hot Air



Message from the President

April, 2012

I have been travelling for business the last three weeks, which has resulted in very little time for anything else. I hate it when life's responsibilities get in the way of my hobbies. April should be better from a travel/work perspective, which should allow more time for flying. Hope to see everyone at the fields enjoying the spring weather.

Jerry Lake ran the meeting in March since I was out of town. It is great to have Jerry supporting the club with the raffle, interesting articles in the Newsletter and as a back-up for me when needed. Thanks Jerry. I appreciate what you do for the club.

I haven't gotten a lot of feedback on how the March Fun-Fly at Entradero went.

We agreed to move it to a Friday in order to de-conflict our flying with the baseball activities. We will try this approach again this month and hold the April Fun-Fly at Entradero **Friday the 27th**. For those of you still working, if you can afford to take the day off, it might be a great way to stretch the weekend and get some flying in.

The Del Cerro Fun-Fly will be **Saturday April 7th**. Things appear to be pretty quiet up on "The Hill". I haven't heard anything from the City for a while, which is great. Del Cerro is a great glider site when the weather cooperates. Take advantage of this resource and test the air.

Nothing beats flying a glider in good lift or challenges you like flying in soft conditions. Give it a try, there is nothing like it.

Once again, I would like to ask you to consider sharing your thoughts, latest project, photographs, etc. with other club members by submitting them for publication in the newsletter. Everyone has a story or interest that your fellow members would like to hear about. Please consider sending a write up or photos to Chris or one of your club officers for inclusion in next month's edition.

Enjoy the fields and flying with you fellow members!

-Jeff

Next Meeting

**Wednesday,
April 4th
7:30 pm**

**La Romeria Park
19501 Inglewood Ave**

Upcoming Fun-Flys

Del Cerro Entradero	April 7th April 27th
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Notes From The Vice President

Propeller Basics

The majority of powered model airplanes use a propeller as part of their power system, and electric models are no exception. Some models use a ducted fan to simulate jet flight, and some even use propane or kerosene powered turbines (real jet engines). There are also a very few models that use flapping wings as a source of motive power (known as ornithopters). However, propellers are still the most efficient way to power a model.

A number of members have asked about propellers, so Jerry provided this article. The original can be found at stephanv.com

Enjoy!

What Does a Propeller Do?

In short, a propeller moves air. It converts the torque of its power source (a motor or engine) into thrust, and the rotational speed (rpm) into linear speed. The combination of an electric motor and a propeller turns current (Amps) into thrust and voltage into speed.

There are two values that express the most important characteristics of all propellers: diameter and pitch. The diameter is really the diameter of the circle in which the propeller rotates. This corresponds to twice the distance from the center of the propeller hub to the tip of one blade (for a propeller with an even number of blades, that's just the distance from tip to opposite tip).



Slicing the end off of a propeller blade reveals an airfoil just like that found on a wing. Different propellers use different airfoils. Some modern electric flight propellers have undercambered airfoils. This glow propeller has a flat-bottomed airfoil.

The pitch is a measure of how far the propeller would move forwards in one revolution if it were treated as a screw and screwed into some solid material. Although the measure of pitch treats the propeller as if it were a screw, one shouldn't think of it as an airscrew (the name of a certain model airplane prop manufacturer notwithstanding). It is really a rotating wing, and if you were to take a propeller and slice it across the blade, you'd see a typical airfoil cross-section.

The size of a propeller is usually expressed in the form diameter x pitch. For example, an 8x4 propeller has an 8-inch diameter and 4-inch pitch.

As a very rough approximation, *the diameter of the propeller controls the thrust produced, and the pitch controls the speed of the air leaving the back of the propeller.* In reality, pitch also affects thrust somewhat, but thinking of the two separately helps to envision how propeller changes will affect performance.

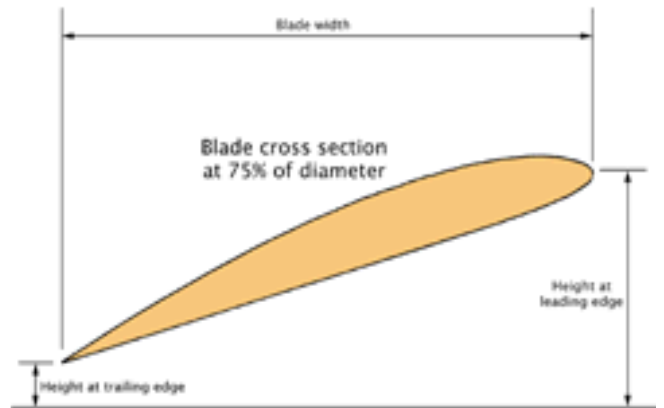


Measuring Pitch

Most propellers are labeled with their pitch and diameter, but it is possible to determine both given an unmarked prop. The diameter is straightforward to measure, of course.

Measurements needed to determine the pitch of a propeller should be taken 3/4 of the way from the hub to the tip.

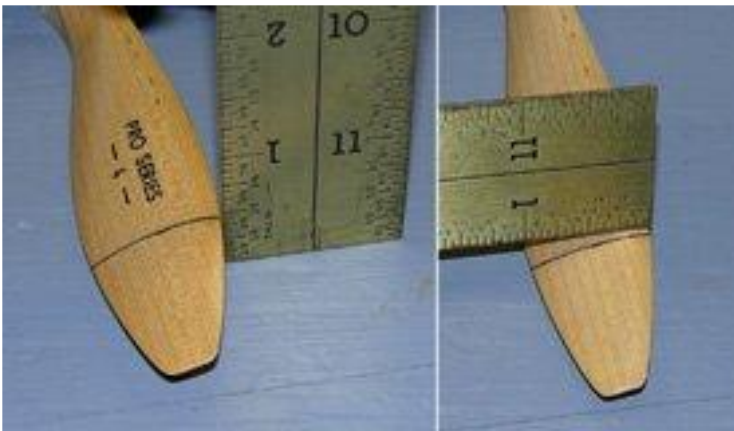
To measure the pitch, lay the propeller flat on a table, measure 75% of the way from the hub to the tip, and draw a line across the propeller blade. Measure the width of the blade at this point, along the surface of the table (i.e. the width of the blade's shadow if there were a light on the ceiling overhead). Next, measure the height of the front and the back of the blade, and compute the difference between these two to determine the height. The pitch is then given by the formula:



$$pitch = 2.36 \text{ diameter height/width}$$

There's nothing magical about the number 2.36; it's just 75% of π (pi), because we're measuring pitch at the 75% diameter mark.

The reason we measure pitch at 75% of the diameter is two-fold. Generally, the pitch of a propeller is not completely constant, varying somewhat from hub to tip to optimize it for the different linear speeds at each point along the blade. The pitch at 75% corresponds roughly to the average effective pitch of the propeller. Secondly, the propeller is sufficiently wide at 75% to allow one to get reasonably accurate measurements of blade width and height.



Measuring the pitch of a propeller is easily done on a flat surface with an accurate ruler.

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
310-347-6806



Minutes from Last Meeting - March 7, 2012

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

BUSINESS:

1. There were four visitors in attendance: Alan, Alan, Ben and Chris
2. Jerry Lake reported that there have been more problems with baseball teams on Entradero at times when we don't expect them. Jerry requested that members who encounter similar problems should contact Jeff or Jerry, either by phone or at the email addresses available on the website.
3. The membership present approved of moving the Entradero Fun Fly to Friday to avoid baseball conflicts.
4. Udo Kolter reported that he was "attacked" by a bird watcher at Del Cerro (he really means the bird watcher told him to stop flying his airplane). The bird watcher claimed that he could not fly a model airplane there. Seemed to be an isolated incident.

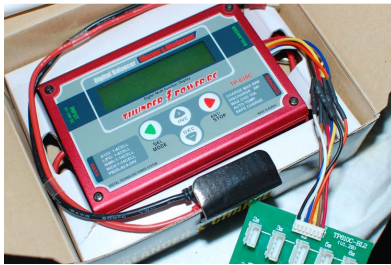
SHOW AND TELL:

1. Udo Kolter showed his 3D Saber electric with protective landing gear and a tail skid.
2. Jerry Lake show his partially completed P-47 from a gas Top Flight kit.
3. Chet Schmidt showed his nearly complete F4U Corsair with a 12 cell system and pneumatic retracts. Wing span is 86" from a balsa kit. Chet also gave a very informative history of the Corsair.





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!

