



# The Flightline



Volume 47, Issue 6 Newsletter of the Propstoppers RC Club AMA 1042 June 2017



## President's Message

The fields are in great shape and the members burning up the skies.

Come on out to the Monthly Meeting and fly before if you wish then bring your stuff in for show and tell.

See you there.

**Dick Seiwel, President**

## Propstoppers Club May Meeting

The meeting was called to order at 7:15

The minutes for the last meeting were approved.

Only 12 members were present, but hopefully next month will have a larger attendance if the weather allows flying at the field.

### Old Business

Chuck Kime visited Elwyn institute to check on our status with them. There are no problems with our use of the field, but we were asked to contact Judy if we have problems - not the president.

### New Business

Both of the flying fields are in good shape.

A request was made for a new windsock for Elwyn

Our picnics this year are for July 15, August 19, Sept 16th (all starting at 1 pm) and December 12 for our indoor picnic.

### Show and Tell

For show and tell Al Tamburo presented his Saito 90 twin cylinder engine which came with a complete Laser model he bought for a great price at a local Hobby Shop years ago.



**Mick Harris for Dick Bartkowski, Secretary.**

## Agenda for June 13th Meeting At At the CA Church Room 7:00 pm till 8:30

1. Show and Tell
2. Membership Report
3. Finance Report
4. Club Calendar Review
5. Plan for Club Picnics

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## Calendar of Events

### Club Meetings

#### Monthly Meetings

Second Tuesday of the month.  
Gateway Community Church at the Christian Academy. Doors open at 7:00

**Next Meeting; 13th June at the Gateway Church room.**

#### Tuesday Breakfast Meeting

Tom Jones Restaurant on Edgemont Avenue in Brookhaven. 9 till 10 am. Just show up.  
Flying after in the summer at CA or Elwyn Field 10 am. Weather permitting.  
Indoors at the Brookhaven Gym in bad weather 10:30-11:30 See dates allowable.

### Regular Club Flying

At Old Christian Academy; **Electric Only**  
Monday through Friday after school till dusk  
Saturday 10 am till dusk  
Sunday, after Church; 12 pm till dusk  
At Elwyn Field; Gas or Electric  
Monday through Saturday 8 am till dusk  
Sunday 12 pm till dusk  
INDOOR Flying, see attached dates.

### Special Club Flying

Saturday mornings 10 am  
Wednesday Helicopter evening in summer  
Thursday evenings in the summer  
Tuesday mornings 10 am weather permitting after breakfast.  
Check our Yahoo Group for announcements;  
<http://groups.yahoo.com/group/propstoppers/>

### Beginners

Beginners using due caution and respecting club rules may fly Apprentice or similar models without instructors at Christian Academy Field.  
The club also provides the AMA Introductory Pilot Program for beginners without AMA insurance.

Propstoppers RC Club of  
Delaware County, Pennsylvania.

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## The AMA and the recent ruling on Drones.

The following is from John Taylor, the Maryland lawyer and model airplane enthusiast who persuaded the DC Circuit Court of Appeals that it was not the FAA's business to require him to put an FAA sticker on a mini drone he was flying in his backyard. (Well that's the argument he made before the court, and it was a winner.) Some people have taken the fact that Taylor took the FAA to court—and won—as an indictment of the AMA for "rolling over" when the FAA demanded we "register" and put stickers on our airplanes.

Taylor says his victory should not be used to bash the AMA. The FAA has had its regulatory nose bloodied a bit and will go away and think about what to do next. As Taylor concedes his victory was a sort of stick in the eye to the FAA—and it's too bad that it happened about the time Congress was going to turn once again to reauthorizing the FAA and defining its authority. As modelers we might not like the "next idea" the FAA and Congress come up with. The AMA got Section 336 for us—that lets us fly so long as we are flying "in accordance with the safety rules of a community based organization". And that organization is the AMA—and the FAA so understands it.

Otto Von Bismarck once observed that "People who like laws and sausage should not be around when either is made." The Iron Chancellor of 1880s Germany was right—a lot of nasty stuff goes into sausages—and into the enactment of laws. We should be glad that the AMA is willing to go into the sausage factory on our behalf.

Mike Myers (my SoCal eating, drinking and flying buddy, and former senior ARCO lawyer, Dave)

## News From The California Propstoppers Chapter

Hi Dave and fellow Propstoppers:

I thought I would share some news with you from California.

I joined SUAVE (Stanford Unmanned Aerial Vehicles Engineers and Enthusiasts). I built a drone in the SUAVE 101 course.



### *SUAVE 101 Course*

#### *Resources:*

- [Kickoff Slides](#)
- SUAVE [Quadrotor Guide](#) (Start Here!)
- SUAVE/Patrick/Russell [Fixed-wing Guide](#) (Start Here!)
- [SUAVE Quadrotor Guide TIPS](#) (Important: read this!)
- Stock parameter file for ZMR250 quad: [Here!](#)
- Software: [Mission Planner Download](#) (Windows Only)
- [Pilot Training Guide from DJI](#)
- [ArduPilot Wiki](#)

#### *Completing the Course:*

Autonomously fly the given set of waypoints, and post your Dataflash logs for your autonomous flight on Piazza

- [Quadrotor Challenge Course Waypoints](#)
- [Plane Challenge Course Waypoint File](#)
- [Opportunities for SUAVE 101 Graduates](#)

Once you've flown autonomously, [Apply to Graduate here!](#)

During testing, my receiver malfunctioned and I left a permanent mark in the ceiling of the Durrand Engineering Building. We know it was a receiver malfunction because we installed a flight recorder in the onboard computer of the drone that was designed to fly autonomously.

It is slope soaring season again and I introduced club members to slope soaring.







Greetings from California.

**Al Cheung**

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*Slope Soaring Report from 2001*

*Strong Winds and a Favorable Slope -Fun in the Sun and Wind at Cajon Pass*

Los Angeles stands in a coastal basin surrounded by mountains and bathed by winds off the Pacific Ocean.



We all know that the legendary California climate is warm and dry but it doesn't start that way. Prevailing southwesterly winds approach for thousands of miles over the cold Pacific so by the time they reach the coast they are cool and humid. The coast of our western seaboard is frequently shrouded in fog and low clouds. In California the words fog and wet are banned so they talk in terms of "Marine Layers". These ocean breezes become warm and dry only after they are heated by the warm California land -mass.

Beyond the mountain ranges that surround the LA basin is the Mojave Desert. To the Northeast Rosamond, Rogers and El Mirage dry lakes host Edwards Air Force base and other playgrounds in the high desert.

The prevailing southwesterly winds from the LA Basin spill over the surrounding mountains precipitating their moisture then flow down into the high desert where they become heated by adiabatic compression and the hot ground. The air is bone dry in the Mojave, the sky always clear and the sun is hot. Temperatures in the high desert range from near freezing at night to 90/110 in the day.

Now for the good part. The effect of this relationship between the low cool LA Basin, the prevailing winds and the hot high desert is a temperature differential which in turn causes a pressure differential. The wind is sucked into the desert and where it goes through the few mountain passes it becomes a dependable gail.

This process takes place almost every day, starting with calm mornings and building through the mid afternoon. When it doesn't it's because the Santa Anas are blowing in the opposite direction and this is just as good.

So there you have it, the ingredients for fun in the sun, aeromodelling style;

- Reliable strong winds and an accessible mountain slope.

Say Wah? This is exactly the opposite of the aeromodellers delight;

- No wind and limitless flat plains! - ***Not for the Sloper!***

I was sitting in Rutan's conference room on my last Boeing business trip, chewing the fat with Dan Kreigh about the good time he had at the Southwest Aeromodeling Conference (awesome indoor session) when he asked if I was planning to go to Cajon Pass at the weekend. Cajon Pass? THE Cajon Pass of PSS fame? The annual meet that gets such good write-ups in all the mags?

Er, well I am supposed to be hanging a French door at my daughter's new (old) house in South Pasadena. ...Better do a really quick job.....Done! Can I go out for a few hours? I'll be back by dinner.

So here I am tooling East on "the-10" (in California you use "the" when you refer to highways which are called freeways). About 40 miles to the Inland Empire then hang a left onto "the-15", the road to Lost Wages (Las Vegas). Long haul up the pass going from sea level to 4100 feet at the summit where the signs warn of high winds. Good so far.

Strike out across the desert, first through an area of housing lots with an eclectic collection of large houses, Desert, Modern, Victorian styles with all kinds of toys and junk in their yards. Desert living is different and the Desert Rats a rabid crowd fanatical about their way of life.

Beyond lays a dirt road or rather trail leading out into the desert with Joshua trees and large brush vegetation. Follow the road for three miles, first through steadily climbing terrain then into the canyons and ridges that form the Cajon mountain pass. As I steer my rental van with much trepidation around the narrow heavily rutted trail bordered by precipitous drops I catch a glimpse of what looks at first like a cloud of big insects flitting around a knoll. But I can't take my eyes off the road and it seems a long treacherous way to that spot. And look at that, a sheer drop down where I came from, the I-15 freeway snaking through the pass about a thousand feet below. Oh well, this is what I came for. And then I am there.

A couple of small outcroppings along a narrow trail lined with cars and vans on the upside. Then a small clearing with a couple of canopies and a portapotty. I have arrived at the Cajon PSS meet and find a precipitous ledge on which to park.

Holy Cow, there must be the entire fleet of WWII airplanes in the air at once. Its warm, the sun is very bright at this altitude and it's windy, probably about twenty miles an hour.

Look at the airplanes waiting to be judged, dozens of them.



The Power Scale Soaring, PSS, event features scale models of powered airplanes constructed as slope soarers, without power! That is to say, prop driven planes have no props and jets, well, no engines.

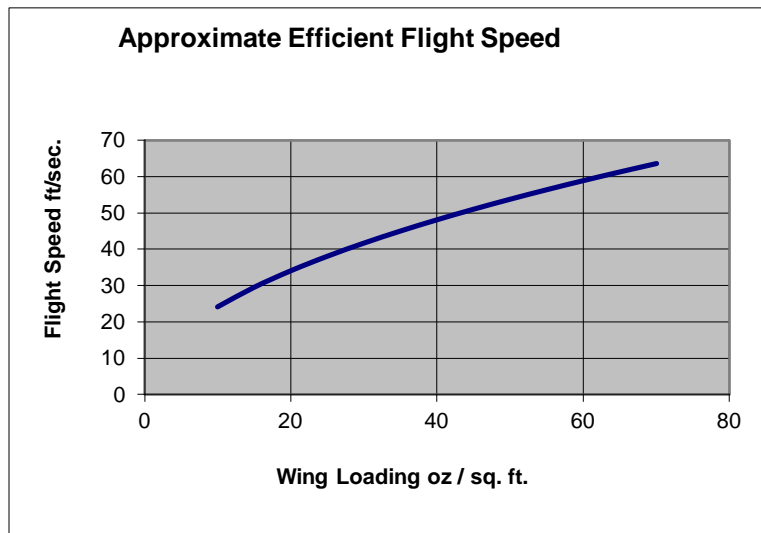




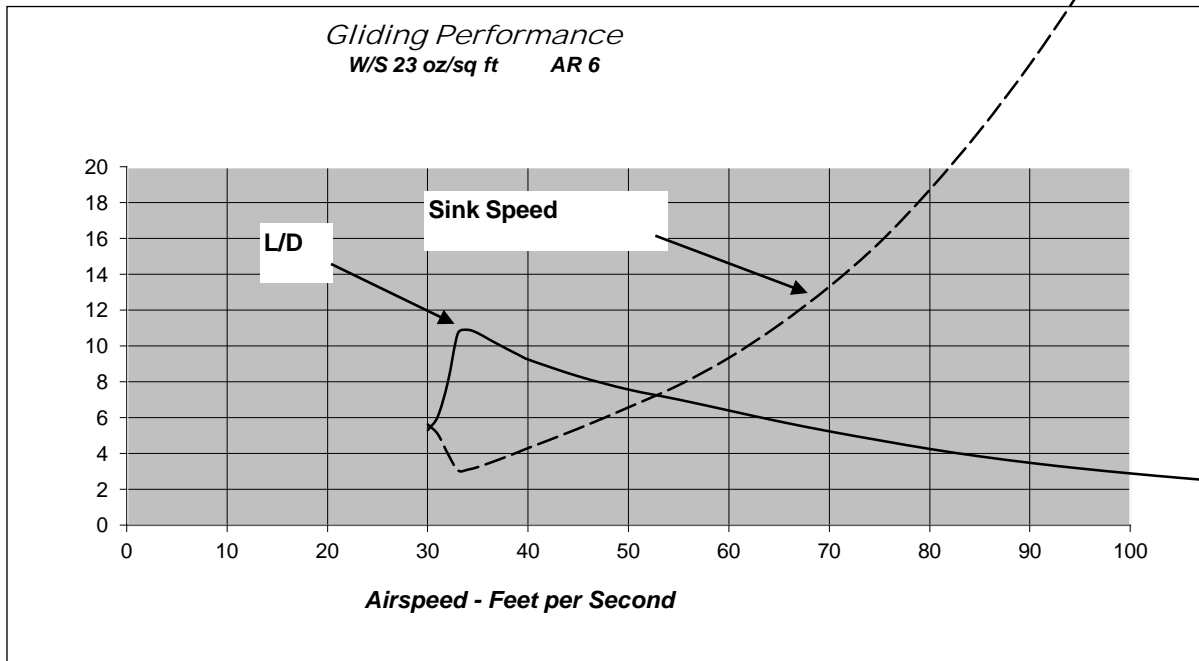
Slope soarers fly in the upwash created when a wind flows up a slope. The upwash is simply the wind speed times the angle of the slope (well the sine of the angle actually but who is counting when we are having fun).

A twenty miles per hour wind on a twenty degree slope produces an upwash of ten feet per second. So if our model has a sink speed of less than ten feet per second it can fly indefinitely. Of course, it must also fly faster than the wind or it will be blown over the hill and far away to grandma's house.

To put this in terms we normally understand for our powered models. Consider that at its most efficient flight condition, close to the best Lift to Drag ratio point, our model speed is driven solely by the wing loading.



The model sink rate is determined by the flight speed and Lift / Drag ratio. Now, our model's L/D is set by the design but it varies with flight speed in level flight. Consider one of our typical models that is fairly clean;



Note that the most efficient airspeed is quite low, not much above stall. Remember this the next time you have a flame-out, this is the speed that will get you back to the field, but I digress.

The minimum sink speed occurs a little below the airspeed for maximum L/D. In gliding flight the sink speed is the flight speed divided by the L/D.

So for this example the minimum sink speed is 34 fps (23 mph) divided by 11 or 3.1 ft/sec. This model would fly fine on our theoretical slope; it flies faster than the wind and the sink rate is less than the upwash.

What that allows us to do, and the PSS fliers do this all the time, is to trade sink speed margin for airspeed; Fly faster and sink more (or climb less).

Consider the example again. If we fly at 60 ft/sec (41 mph) the L/D is 6 and the sink speed 10 fps. Now we match the upwash and so fly level. To do this and not fly away from the hill (to the other grandma's house at the bottom!) it is necessary to fly across the face of the hill.

This is what slope soarers do, they fly across the hill doing all manner of turn-around maneuvers to turn and return continuously back and forth.

What if the wind speed is too high and the model would blow away? Ballast! Ballast makes the model fly faster and increases the speed for minimum sink. Note the models L/D profile does not change, it only shifts up in speed.

The slope soarers build their models for the local conditions but always provide for the addition of ballast for when the wind really blows. This is when the really high speeds are possible.

Meanwhile, back at the Pass, let's examine a typical PSS model. Most of them are in the 60 inch span region and have only enough detail to look realistic at tens of feet. They fly fairly close-in but the real challenge is the landing. At the Cajon flying "site" there were no flat open areas in which to land, so the typical landing was a direct hit on the chosen spot.

This is the other reason that a great deal of detail is not included, these model take rough punishment. This is also the reason that many of them are made from EPP foam, the nerf ball material.

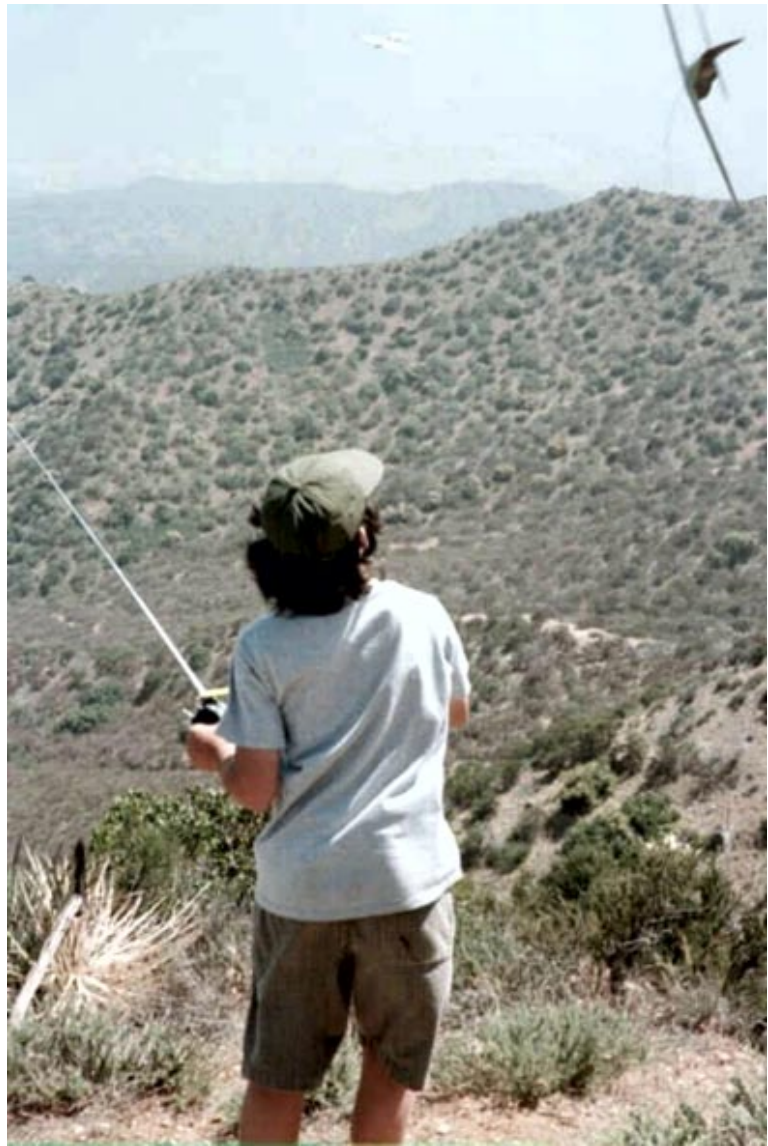


In flight the realism is stunning. As the background is tens of miles away and the eternal LA smog wafts though the pass the models take on an eerie scale-effect. The model, its detail, its flight motion and the setting look real, and you are the wingman.



**FW 190 Flies Cover over Cajon Pass.**

Not all of the models were large; one young man flew an 18 inch span Spitfire with realism and gusto.



#### Spitfire Away For Another Mission, Where Is That FW?

Models of this size look just as realistic, fly well and are more rugged to land. Jets are also very popular and well suited to PSS due to their clean lines and when ballasted in high winds really fly "like a jet".



Did I enjoy it, you bet. I learned to fly RC on the California slopes and enjoyed it immensely. By the way, slope soaring is an ideal learning method. If your plane matches the slope and wind well you launch and fly away from you forever! No turn arounds! Until you land and that is the hard part. But by then you are too tired to continue as the flight was only limited by your body needs or adrenalin supply. I always broke my model on landing, a Hobby Lobby \$25 foam Spirit of 76 glider, but I had till the next flying session to fix it.

Wish we had California conditions in Pennsylvania.

On the other hand, it makes my California visits something to look forward to, especially now I have somewhere to stash some slopers.

See you on the flat land or follow me to the slopes.

*Dave Harding*      2001      ✈

More Fun at Elwyn.



Where are the CA Field reports and pix?

## Is there a Float Plane in your Future?

Rumor has it that there are some float planes “growing” in our midst. Eric Hofberg and Pedro Navarro are planning to fly in the Chesapeake soon.

In anticipation of this trend here are some floatplanes from the Propstoppers past.

Al Cheung pursued a floatplane path some years ago flying off his cottage on Lake Oswego. Early lessons included how to waterproof the electronics. Here is his de Havilland Beaver.



Webmaster Larry Woodward also practices water borne flying from his place in Cape Cod.



Maybe we should clear Lake Christian behind the pits and try locally. Always wanted to put the Hanger 9 Cub on floats.

Dave