

THE SLOW ROLL



CHARTERED #921
Since DEC. 1974



President—Lou Pfeifer IV
Vice President—John Geyer
Treasurer—Oliver Heinen
Secretary—Bobbie Santoro
Editor—Bob Purdy

APRIL 2021

*The Slow Roll is published by the Sun Valley Fliers by
and for its membership to all others interested in the
building and flying of radio control aircraft.*



Inside this issue: Cover Photo by Brian Rhoads of John Gerhardt A7

SVF CLUB ending 46 years as a charter club

President Report

Happenings

Birthdays

Using A Wattmeter

There is no APRIL FOOL jokes in this SR

NONE Board Minutes

Getting into Gas engines

NONE Meeting Minutes

SVF PHOTOS

VIDEOS

MEETING AT FIELD APRIL 3, 10 AM



Presidents Report For April 2021

Hello all,

I hope all of you are doing well and you and your families are safe! This last year was very upsetting for many. Thank god that the members we had with covid got thru it and are doing well. As you all are aware of SVF can finally get back to some normal operations and not worry about restrictions due to Covid.

The 1/8th is having their event on April 9th thru April 11th. Now that we do not have any restrictions anymore our members are free to come and enjoy this event. Come out and enjoy!

Our April SVF Membership/Nomination Meeting will be held on April 3rd at the field at 10:00 Am. There will be no flying while the meeting is in progress. Come out and support our club.

I am sorry to say that this is going to be my LAST PRESIDENT'S Letter as President of SVF. I have done this for 6 years now and I have had enough! I have accomplished many things in this 6 year term like the NEW RUNWAY, along with Bob True. Having to sign a LOA for a 400 hard height restriction (UNFORTUNATLY), getting us a New Use Agreement from the City and Flood Control for (5) years with a five year extension clause (Thanks to Wayne Robertson and Bob True's help), along with other things that cannot be mentioned on public forum.

In closing I feel this is still the BEST FIELD AND CLUB IN ARIZONA!!! I am proud to have served you all for 6 years and thank you ALL for the support that you gave me throughout this time. I hope to see some NEW BLOOD as a NEW PRESIDENT. God Bless all of you and your families and God Bless SVF!

Lou Pfeifer IV

President of Sun Valley Fliers

What's Happening



**FOUND IN THE DUMPSTER
AGAIN!!
This has to stop!!!**



We're BACK!



The O.E.A.F. Spring Flyin is ON!

April 9, 10, 11, 2021

The event will be held at Sun Valley Fliers Field

April 9, 10, 11

AMA Sanction 11120

\$50 landing fee

Registration on site or online at:

https://paypal.me/flyincavebuttes?locale.x=en_US

CD Howard Kennedy (602-361-8475)

Or call, Kenny Rhoads (602) 809-4532



Free lunch Friday and Saturday.

Free Pizza Friday night.

Awards for different classes.





03/06/2021 MEMBERSHIP MEETING MINUTES

Officers: President- Lou Pfeifer, V.P. - John Geyer, Treasurer- Oliver Heinen, Secretary- Bobby Santoro

Board Members: Charlie Beverson, Jamie Edwards, Craig Guest, Wayne Layne, Ernie Mack, Frank Moskowitz, Bob True, Tony Quist.

Absent: Ernie Mack, Jamie Edwards

Open: 10:03

Assign Election Committee. 1 board member and 2 non board members

Board: John Geyer

Members: Kenny Rhodes
Rick Marshall

Guests:

New Members: None

Solo Pilots:

Secretary's Report: Bobby Santoro

1. Approve February Minutes - **Motion: John Geyer 2nd Frank Moskowitz**

Membership Report: Bob True

1. 195 members currently, reminder email to be sent out prior to late fee

Treasures Report: Oliver Heinen

- 1) Approve February Financials - **Motion: Ron Andersont 2nd: Paul Brown**
- 2) New charges for Solar Station have been included

Safety Officers Report: Ernie Mack

- 1) none

Old Business:

- 1) Weather station is up and running again thanks to Frank, Cole, and Oliver.
- 2) Please take the time to clean up the trash at the field. If you see the full trash cans please help out and empty them into the dumpster.

New Business

- 1) There is a pile of batteries next to the dumpster that were pulled out. Please do not throw ANY batteries in the dumpster. If this continues we will possibly look at getting rid of trash at the field.

- 2) 1/8th Air Force event that was supposed to take place in November has been moved to April 9th-12th. Will follow the same style as winter warbirds in regards to covid restrictions. ONLY registered pilots will be allowed in the pits. Members will be able to attend but they must stay in the parking lot. The restrictions might change given the recent loosening of covid restrictions in the near future.

Kenny Rhodes - Currently half of the registration is filled so if you would like to attend please register ASAP. It will be like winter wars birds with no judges, just a fun event! Fire suppression will also be taken care of!

- 3) Helicopter pilots would like to fly helios with the sun at their back. A few pilots have proposed moving the current station closer to the dam to allow for this situation. The board will discuss this and look into what can be done with the city to move the current flite line for the helicopter flying area.
- 4) **Bob True has announced that he will be stepping down from the board.** Thank you Bob for all that you have done for the club in the past five years, you will definitely be missed by all!

Door Prizes:

- 1) Bobby Santoro
- 2) Steve Peterson
- 3) Steve Shepler
- 4) Gene Peterson
- 5) Ron Deppert
- 6) David O'Rourke
- 7) Oliver Heinen
- 8) John Nolte
- 9) Paul Brown
- 10) Bryan Rhodes
- 11) Dick Polkinghorn
- 12) Dennis Lamb
- 13) Mike Taylor

Gas Cans Auctioned off thanks to Bryan O'meara!

50/50 Raffle: None

Show and Tell: None

Adjourn at 10:45, **Motion: Oliver Heinen 2nd Kelly Payne**



03/15/2021 Board Meeting Minutes

Officers: President- Lou Pfeifer, VP. John Geyer, Secretary- Bobby Santoro, Treasurer- Oliver Heinen

Board Members: Charlie Beverson, Jamie Edwards, Wayne Layne, Frank Moskowitz, Tony Quist.

Absent: Lou Pfeifer, Frank Moskowitz, Oliver Heinen

Open:

Guests:

Secretary's Report: Bobby Santoro **Motion:** John Geyer **2nd:** Tony Quist

- 1) Approve January Minutes

Membership Services: Tony Quist

1. Discussion on transfer of membership information/access

Treasures Report: Oliver Heinen **Motion:** Bobby Santoro **2nd:** Wayne Layne

- 1) Approve Financials for February

Safety Officers Report:

1. Searching for new safety officer as Ernie as resigned

Old Business:

- 1) The 1/8th event was approved from the County. They have given us camping for 4 with (2) security vehicles. Contract was signed by Ken Rhoads and Myself (Lou)

New Business:

- 1) Voting process. Who is going to handle the online voting this year being bob left? if no conclusion at the meeting please table this item till the next meeting. Bobby has offered to champion this and try to use the previous voter system.

a) Member Representative: Kenny Rhodes, Rick Marshall

b) Board Representative: John Geyer

- 2) I will put the results of the Nominations out in email form as usual.
- 3) Helipad discussion from the Membership meeting has been addressed by me. County told me we have to have aerial shots and surveys done before we can even talk.

Adjourn at: 19:20 Motion: Tony Quist 2nd: Bobby Santoro

Getting into Gas Engines – Expert installation & setup tips



There are lots of good reasons to use gasoline engines to power your model airplanes. When you fly giant-scale airplanes, reliable engine performance is of up-most importance. Generally speaking, gas engines are also very easy to start and run very consistently while producing their peak power at lower rpm settings than glow engines of similar displacement. These lower rpm tend to produce lower noise levels while also burning less fuel per minute as compared to nitro burning 2-strokes. And there's the added benefit that gasoline is a lot cheaper than nitro glow fuel.

But as with all things RC, to operate properly, your gas-fed engine needs to be installed and set up correctly. Let's take a closer look.

Mounting

Installations start with properly centering and attaching your engine to the model. This can be done with soft or hard-mounting points. Hard point mounting can be as simple as drilling holes in the firewall and bolting your engine directly into place. For engines with rear mounted carburetors, this will often require using long metal standoffs. In both cases, the mounting hardware (nuts and bolts), need to be secure and tight. For lightly built airframes, soft mounts are often used. These include rubber isolators that separate the mounting bolts from the firewall. They also minimize the amount of engine vibration that finds its way to the rest of the fuselage structure. Be sure to follow the airplane's instructions for side and down engine thrust angles.

It is preferred to have all your hardware, engine, muffler and fuel system before you begin building your model. This way you can make changes to items like firewall placement, to avoid excessive modifications after the model is assemble to fit your engine and fuel system. A little pre-planning will save a lot of effort afterwards.

Here is a typical hard mounted gas engine installation shown on my friend Mike Gross Jr.'s Ziroli Zero. The engine is mounted on an engine extension box added to the firewall.



Here what included in typical engine soft mount hardware. Soft mounting the engine helps isolate the fuselage from engine vibration by using rubber inserts around the engine bolts.

For this P-47 build, the engine's rear-mounted carburetor passes through an opening cut into the firewall. Though the throttle linkage is easy to install, the choke linkage becomes more involved.

To keep the carburetor in front of the firewall long metal standoffs can also be used to install an engine with a rear mounted carburetor.

Whenever possible, use your engine while building your airplane to position your firewall and formers.

Linkages

After you've installed your engine properly, the next step is to work out and install your throttle and choke linkages. Start by installing your throttle servo. I prefer to use 4-40 music wire with a threaded on heavy-duty ball-link at the carburetor and a soldered-on

metal clevis at the servo. You can determine the length of your throttle pushrod by using your transmitter to position the throttle arm all the way to the idle position with full down throttle trim setting. Here too you should visually confirm in which direction the servo needs to move to open and closed the throttle. Since one end of the linkage is threaded you can fine-tune the length mechanically after you solder the clevis into place. The overall throttle travel endpoints can be fine-tuned by programming the travel volume or endpoint adjustments. I personally like to remove the return spring from the carburetor throttle arm to minimize the throttle servo drain on the receiver battery pack. Once this is all done, be sure to remove your throttle linkage and use a solvent to remove all the solder flux to prevent corrosion later on. For the choke you have the option of using servo control or a simple mechanical linkage operated by hand. Using a servo also provides an emergency engine shutoff during flight.

Secure throttle linkage is very important. I prefer to use heavy-duty ball links to make the connection.





You have to first install the throttle servo to determine the length of your throttle linkage.

Plumbing

Next are the fuel lines to connect the engine to the fuel tank. The tank position is less critical with a gas engine than with a glow engine because most gas engines use a Walbro or similar pumper carburetor. These draw the fuel into the carburetor so the tank can be further away from and lower than the carburetor without any issues. The most important thing is to make smooth loose fitting holes in the firewall so the fuel line does not chafe. I drill a larger hole, slip the fuel line through it and then add a dab of Zap Goo to seal around the fuel line. Also, be sure to use a gasoline compatible fuel line like Du-Bro's Tygon or similar for your fuel system plumbing. Use it inside the tank also as well as a gasoline-proof rubber tank stopper. An excellent way to make sure all your tank hardware is gasoline compatible is to use the Heavy Duty Multi Fuel Stopper Kit from Sullivan Products.

For the actual plumbing setup, I prefer to use a 2-line fuel tank setup with a tee fitting installed in the fuel-supply line to the engine. The other line is the vent which exits the bottom of the firewall, close to the exhaust pipes. I always install a fuel filter between the carburetor and the T-fitting.



Your fuel tubing tank hardware has to be made using gasoline compatible materials. Also use small cable ties to secure all the fuel tubing connections.

There are several gas rated fuel tank fittings available. This one comes with a heavy duty anodized fuel stopper cap.



Firewall Forward

The insides of an engine cowling can get crowded especially if you are installing a smoke pump system and adding ballast weight in the nose to adjust the balance of your model. So, in general, it is better to work out all your engine installation issues during the construction of your model, than to try and cram everything into place after the plane has been built.

Prevent loose wires or fuel lines from coming in contact with the hot engine or exhaust system. Take your time and work on everything one at a time. I use plastic cable ties to secure dangling wires and fuel lines. If you need to do some maintenance, they can be easily snipped away with a pair of wire cutters.

When it comes to troubleshooting a gas engine that unexpectedly becomes more difficult to start, it is good practice to check the internal fuel inlet filter screen. Often this is where debris is caught and it can cause a reduction in fuel flow. Replacing the screen is very easy. For minor blockage you can simply flush the screen with fresh fuel and then reused. Also, be sure to check all engine bolts and screws especially those holding the carburetor in place. Securing fuel tubing with cable ties also improved reliability by preventing them from coming in contact with the engine.

Keeping the engine compartment neat and uncluttered helps keep engine performance reliable by preventing the wires from touching the hot engine case or muffler.

When you are test running your engine on an open air engine test stand, cooling is seldom an issue. I like to test run my engine on my test stand, so I can get to know it and adjust the fuel mixture, before I install it on the plane. Though running an engine too lean or spinning a propeller that's too big can lead to overheating, the primary cause of dead-stick landings is insufficient airflow into and out of the engine cowling. Fully cowled engines tend to run at higher temperatures than uncowed engines so be sure to set your fuel mixture slightly on the rich side, so the engine runs at about 200rpm below peak speed.



Engine Cooling

For proper air flow the outlet area has to be larger than the inlet area by about two



to one. With inline designs like P-51 Mustangs and Spitfires, the trouble is usually not enough inlet area. With radial cowl designs like the Grumman Hellcat, F4U Corsair and Japanese Zero, the problem is usually too much inlet area, compared to the outlet. Most ARF planes with cowled engines will provide proper instruction for how much engine cooling is needed, but if not, just remember that your outlet area should be about one and a half to two times as big as your air inlet. Some airplanes will also benefit from internal ducting that helps guide cooling airflow around the engine cylinder's cooling fins.

Here you see a radial engine cowl from my Top Flite Corsair. Notice that there is only a small area allowing cooling air into the cowl just in front of the cylinder head. You can have too much inlet area.

For proper engine cooling, the air outlet should be bigger than the air inlet opening. Here the engine and muffler have plenty of airflow for proper cooling.



Test Runs

Once your model is completely built and it is time to test run the engine, many will simply run the engine with the model secured to the ground so it cannot move forward. If you do this, I recommend that you place a sheet of plywood or other material to prevent debris from getting into the carburetor. Also, your first few runs should be done with the cowling removed to make it easy to make adjustments.

Another way to test run your engine is to do so on a test stand. This eliminates undue stress on a newly built airframe and it provides excellent access to the throttle linkage and fuel tank so you can fine tune the setup for maximum performance.

Static engine runs are best done over a smooth surface to prevent debris from being kicked up. Also with the cowl removed, you have access to linkages and the car-

buretor.

Using a test stand is also a very good way to run and adjust your new gas engine.

A test stand can be as simple as a piece of wood with a firewall screwed to a sawhorse.

Safe Starting

For safety reasons, I recommend the use of an electric starter, but if you want to hand prop your engine, here's the best way to do it.



1. Make sure your flying buddy holds your model so it can't move forward, and be sure the propeller is properly installed. Always use a balanced propeller.
2. Position the propeller (relative to the engine's compression stroke) according to the instructions.
3. Turn the ignition kill switch off, and close the choke. To draw fuel into the carburetor, flip the prop until you see gas flowing through the fuel line and into the carburetor.
4. Open the throttle fully, turn on the ignition system but keep the choke closed.
5. Flip the propeller again until you hear the engine "bark" telling you it is properly primed.
6. Close the throttle, advance the throttle trim fully and open the choke.
7. Flip the propeller a few times and the engine should start. If it doesn't, switch the ignition off, and repeat the procedure.

Always secure the tail of your airplane before starting the engine. If you do not have a tail-anchor system have a friend hold your airplane during engine starts.

Gas Accessories

It is important to always use gasoline grade fuel accessories when building your model. The use of glow fuel grade accessories is not acceptable as many of the materials used in them will be adversely affected by gasoline. There are several resources for gas-proof accessories including Du-Bro, Sullivan and Slimline to name a few.

Don't guess about this; always be sure to use the propeller.

Text & Photos By Gerry Yarrish

TUCSON JET RALLY

SVF guys flying Jets at TIMPA, March 18-21. Kenny and Brian Rhoads, The Rick's (Paquin and Marshall), John Gerhardt, Spencer Kleinhans, Charlie Beverson, and Tony Quist, Gary Thompson all participated.



TUCSON JET RALLY



Knowledge Is Power: Why You Need A Wattmeter

Written by Terry Dunn Electric



KNOWLEDGE IS POWER: WHY YOU NEED A WATTMETER



A wattmeter is an invaluable tool for all electric fliers. It provides the data you need to tune and troubleshoot a model's power system.

ALTHOUGH I'VE WRITTEN numerous articles and reviews for *Model Aviation* throughout the years, this is my maiden "Electrics" column. I was flattered when Greg Gimlick asked me to take the reins. I'll do my best to keep this space entertaining and educational (in both directions!).

Some Things Never Change

I became involved with electric-powered RC models in the late 1990s. At that time, most power systems still used brushed motors and NiCd batteries. Achieving good performance from a model often required some tinkering and experimentation. In fact, that is what initially attracted me to electric power. Each new project was like a brainteaser. With a given setup, I might have changed the cell count of the battery, the propeller size, the gear ratio, or some combination of those things in a never-ending search for better performance.

We often pushed motors and batteries well beyond their advertised limits. More often than not, electric modelers of that era had to strike a balance between performance and equipment longevity. You could only push a motor or battery so hard before it overheated or self-destructed in some dramatic fashion. Because we worked within such narrow margins, having accurate data was vital to success. Our primary tool for obtaining that data was the Astro Flight Wattmeter.



The Wattmeter (aka wattmeter) is a handy device that is inserted between the battery and ESC. It displays the system's voltage, current (amps), power (watts), and electric charge (milliamp-hours; mAh) on an LCD display. That's all great information to help you better understand whether you still have some headroom for more power, or whether a meltdown is imminent! You can also place a wattmeter between your charger and battery to make sure the battery is accepting the expected amount of charge and reaching the proper voltage.

These wattmeters differ in age and cost, but they work essentially the same way and provide nearly identical data. Brands from top to bottom are Astro Flight, Great Planes, and HTRC.

Much has changed in 20-plus years. Participating in electric-powered flight no longer demands a tinkerer's mindset. Powerful and efficient brushless motors and LiPo batteries ensure that most electric-powered models have more than enough power right out of the box. Additionally, modern battery chargers now have built-in screens that display the information that we once relied on from a wattmeter. Despite all of those advancements, the wattmeter remains a vital tool for electric fliers.

Components for electric power systems are readily available from vendors around the globe, in a wide range of price points.

The quality of those components and the accuracy of their printed specifications can also vary. Sometimes it's difficult to really know what to expect from the gear in front of you.

Did I install a 30-amp ESC for a system that actually pulls 40 amps? Can I use this motor with the largest recommended propeller and the maximum recommended battery voltage at the same time? Those are both common questions, and a wattmeter provides the answers.

Even off-the-shelf ARF models with factory power systems need to be checked from time to time. A wattmeter can immediately tell you the effect of using a battery with a different voltage or discharge rate. Perhaps you want to try a

new propeller that looks more scalelike. Or maybe you just want to know whether that puffy LiPo can still deliver the juice that it used to. Landfills around the world are littered with burned-out LiPos, melted ESCs, and overheated motors because their owners (including I) committed to a change that pushed some component past the breaking point. The only way to truly understand how a power system is performing is to measure it with a wattmeter.

There's no question that buying a wattmeter will save you money sooner or later. Preventing the destruction of just one ESC, battery, or motor is usually enough to recoup your investment. Trust me! It's much better to have a wattmeter tell you that you've over-propped your motor than to wonder why your favorite model suddenly has a smoke trail!

Data on a Budget

I still have my original Astro Flight Whattmeter and use it regularly. Throughout the years, numerous hobby companies have released their own variations on the wattmeter theme. For example, I also have a Great Planes PowerMatch Power Meter. It is basically a wattmeter with a few extra features and a built-in battery balancer. I would trust a wattmeter from any well-known RC company for the purposes that I have previously described. Among the various wattmeters I have seen, there are minor differences, but they all function essentially the same way.

I recently saw reports from a few modelers who were using wattmeters that they purchased from Amazon at low prices. That got my attention because some of the RC equipment found on Amazon is, quite frankly, junk! My hunch was that these inexpensive wattmeters would be inaccurate and/or unreliable. Perhaps the only thing worse than no data at all is shoddy data.

I decided to buy one of these budget Amazon wattmeters and compare it with my trusted Astro Flight and Great Planes units. For approximately \$15, I obtained a wattmeter from HTRC, a company based in China. It did not come with battery connectors, so I soldered on a set of Deans Ultra Plugs. The unit appeared to be well built. I could not find any obvious physical or cosmetic defects.

The one-page instruction sheet is typical for imported electronics. Some information is confusing because of poor translation. There are also contradictions. One section stated that the wattmeter can be powered by an auxiliary battery of at least 4.8 volts (up to 60 volts), yet a diagram indicated that the auxiliary battery must be at least 8 volts. A quick test revealed that the 8-volt value is correct.

In order to test the accuracy of the HTRC unit, I measured data from three different models with power systems ranging from approximately 40 watts to 800 watts. I then compared data collected with my Astro Flight and Great Planes units. I limited variables as much as I could by using the same battery for each model and topping off its charge between each test.

My results were encouraging. All of the data I collected with the three wattmeters differed by no more than 5%.

That's well within my margin of error when honing or troubleshooting power systems.

At this point, I have no reason to question results from the HTRC wattmeter. I can't speak to other wattmeters offered on Amazon, but this one seems legitimate. My only gripe so far is that the LCD screen is difficult to read in sunlight. I'll report back if my long-term testing reveals any other issues.

Get Smart

If you're an electric flier without a wattmeter at your disposal, you're now officially out of excuses. A tachometer is useful, and a servo driver is handy, but a wattmeter is essential if you want to understand, troubleshoot, and optimize your electric-powered models.

The screen on this wattmeter from HTRC is somewhat difficult to read, but the author's testing indicates that it provides accurate power system data.

By Terry Dunn | terrydunn74@gmail.com

Editor: This is a copy of AMA March 25 MEDIA MINUTE.



Several interesting articles in this issue, do check it out.



VIDEOS and Websites Links
Click on to view video, website



https://www.youtube.com/watch?v=1kqWnxFR6_w&t=487s

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time_continue=9&v=NZasXBQ8t68&feature=emb_logo](https://www.youtube.com/watch?time_continue=9&v=NZasXBQ8t68&feature=emb_logo)

CHECK THESE VIDEOS OUT

https://www.youtube.com/embed/E-1_JwIHO-8

My thanks to those who passed this info on.



APRIL 2021 SVF Birth Day Boys

Steven Shepler
Mark Overhage
Bill Heuermann
Wayne Layne
Spencer Key
Richard Hanson
Nate D'anna
William Stiving
Tony Holden
Albert Asendorf
Gerhard Gallifant
John Gerhardt
Robert Bayless



Mon-Fri 9:00 AM — 8:00 PM

SAT 10:00 AM — 8:00 PM

SUN 11:00 AM — 6:00 PM

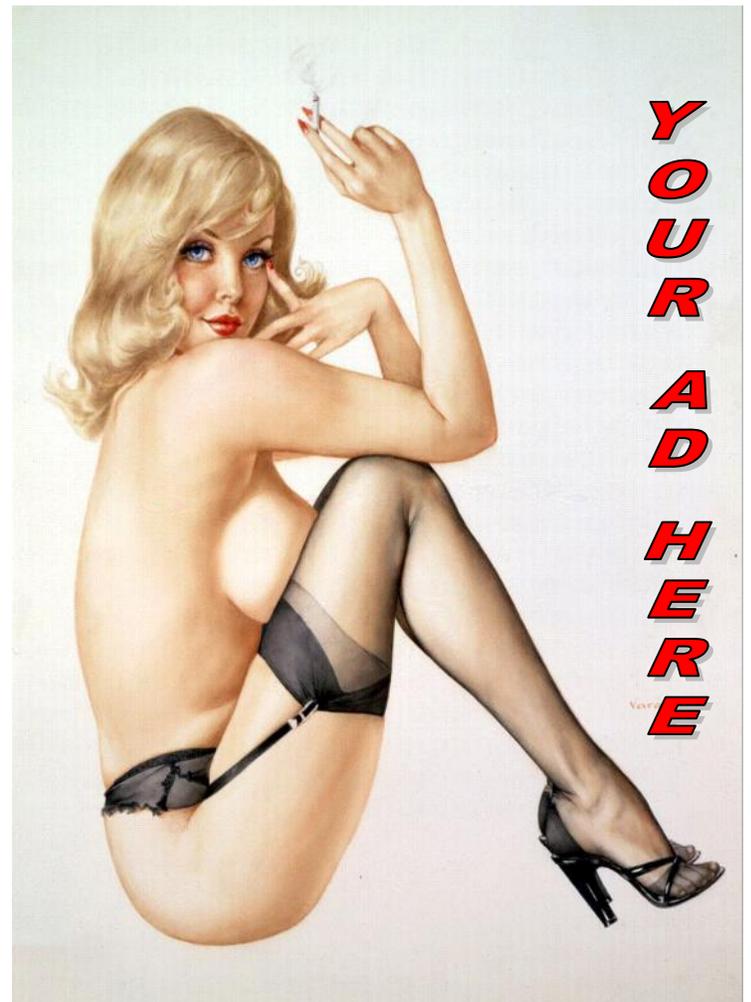
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4240 West Bell Rd. 602-547-1828 Glendale

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SPECIAL NOTICE TO PILOTS!

"Sun Valley Flyers Utilizes a
400ft ceiling for flying
model aircraft allowing
for only momentary
breaks caused by
non-sustaining maneuvers.



All pilots must utilize a spotter at all times
and abide by AMA Rule 540d"
(see and avoid procedures)

Any pilot willfully violating this rule is subject
to loss of flight privileges.



THE SLOW ROLL



Club Officers 2018-2019
 Lou Pfeifer IV, President
 John Geyer, Vice President
 Oliver Heinen, Treasurer
 Bobbie Santoro, Secretary
 Safety Officer Ernie Mack

Bobby Santoro
 Website Supervisor
 Please check your
 Membership list for
 Phone numbers.



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YEARS



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