# THE SLOW ROLL

CHARTERED #921
**Since DEC. 1974**

President—Frank Moskowitz
Vice President—Tony Quist
Treasurer—Gene Peterson
Secretary—Rusty Fried

Editor—Bob Purdy
*rcbobsvf@aol.com*

## AUGUST 2008

*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 Bob Purdy …Prez report……Minutes.. B'Days & Treasurer Report…. SVF Members photos …SVF visits IAF Museum….ROAD UPDATE PHOTOS....Props...Electric motors… SAFEty Box…A123 cells….Exercise??...ARF Tips...RC Flyer killed in fire...Safe Side….Strokes…NATS....**


**Finally the GSA (Grade Stabilizing Asphalt) has been plowed and bladed to cover the dirt road. Please drive slow as there is still loose GSA.**

# THE PRESIDENTS CHANNEL

## FRANK MOSKOWITZ

Welcome to the August Slow Roll.

A lot has taken place since our last Slow Roll was published. I'm sure by now most of you have seen our latest improvement for dust control. *We were all expecting the crack seal and repave of our runway to have started but do to some unforeseen commitments on the part of our contractor, it will be postponed for a few more weeks*. In the interim, through the efforts of **Charlie Beverson** we were able to obtain approximately 994 tons of the **GSA material** (the piles you saw on our road). The GSA was delivered on July 2nd and **Mike Peck and Gene Peterson** spent the day supervising the exact placement of each truck load. Behind the scenes, Mike Peck was working with the property management section of the Flood Control District of Maricopa County to secure all permits for not only the placement of the GSA but the task to spread out the piles to form the road you now see. Through Mikes amazing ability to deal with the politics, he was able to secure the permitting necessary (after numerous engineers signed off on it) and we were given the go ahead to spread the GSA. Once again thanks to Charlie Beverson we obtained the use of a blade and water truck at substantially reduced prices. **Sun Valley Fliers** also thanks **Kenny Rhoads** for arranging free water from the fire station to initially fill the water truck. The final inspection by the Flood Control District inspector is scheduled for the last week of July. Mike Peck will meet with the inspector and get the final sign off. Now that we can enjoy a little faster drive to our field **I still caution everyone that this is not a highway! Please keep your speeds down and use your best judgment**. **We still have a dirt parking lot and the PM10 rules are still very real.** Thanks again to Charlie Beverson and Michael Peck for their efforts on this project. They saved SVF a lot of money!!

For those of you that were in attendance at our last club meeting, I had informed you of Karl Kohnke had resigned from the Board due to personal reasons. We asked for potential candidates and **John Geyer** and Lucky Mitchell came forward as potential candidates. At our last Board Meeting John Geyer was appointed to the Board of Directors with the majority of votes. Congratulations and welcome John!

Yet to come will be the new runway, repainting of the Ramada, and ground maintenance by **Ron Long's** landscaping crews. The Sun Valley Fliers field will be quite impressive looking when we are through!

Remember our next meeting time is **Wednesday August 6th at 7:30 pm. Location is Deer Valley Airport Restaurant. (7th avenue and Deer Valley Road).** Remember in order to use the room free of charge each month we need to purchase some food items off the menu. So **arrive a little earlier** and enjoy some of their great food choices. **Lots of great food and a smoke free environment.** The Club meetings get better every month. For added fun we have show and tell. We will always have more than one raffle prize and the 50/50 could make you very happy $$$. You never know what might happen, and you don't want to miss it.
Have fun out there!
Frank Moskowitz
President

*Frank Moskowitz*

**President**

**FIELD CLOSURE NOTICE!**
**ON WEDNESDAY AUGUST 13 THE FIELD WILL BE CLOSE FOR CRACK SEALING.**
**AND 3 WEEKS LATER THE FIELD WILL BE PAVED.**


# Sun Valley Fliers Club Meeting Minutes
# Date, July 2, 2008

**The meeting was called to order at 7:30 pm by President Frank Moskowitz.** There were 38 members in attendance.
**Officers in attendance**:
President: Frank Moskowitz, Vice President: Tony Quist, Secretary: Rusty Fried, Treasurer: Gene Peterson
**Board members in attendance;** Charles Beverson, Mike Peck, Bruce Bretschneider
Paul Steinberg, Ron Thomas, Dan Jacobsen

**Guests: Ray Moya**

**New Members: Welcome to Marty Knopy**
**New Solo Pilot: Bob Wainman, congratulation.**
**Secretary's Report: Rusty Fried. Voted and approved as printed.**
**Treasurer's Report: Gene Peterson. Voted and approved as presented.**
**Safety Officer Report: No issues.**

## Old Business:

1 SVF was able to get **grade stabilizing asphalt** at a very reduced price. We had to react very quickly to get the deal. Mike Peck went to the city and county and got the permit process started immediately. They gave Mike verbal permission so we could dump the GSA on our property. **Mike Peck** and **Gene Peterson** stayed all day on 7-2-08 to check in each load and make sure it was placed correctly. The SVF paid $75.00 per load, so we needed to be there to account for each load. Many thanks to **Charles Beverson** for making the arrangement for the SVF to get the deal. Each load is between 12 to 15 tons.
2 **Mr. *Jet* Ronald Long** is basically donating the services of his landscaping company to do a proper field cleanup. (no donuts for Ron) He will do the field clean up after the runway has been repaved. Ron will start at about 5:30 AM and finish around 2:00 PM.
3 **Mr. Daniel Bott** showed at the meeting, a blast from the past. Hope to see you at the field.
4 As of this meeting we have 305 paid members.
5 We had donated parts in the shed that were brought to the meeting to be given away.
6 **Mr. Daniel Jacobsen** is about to pull the trigger on the Ramada repaint. He still needs to talk to Vinnie about the pressure washer. Dan said "it will be done soon".
7 The contractor will do the crack seal soon. That is the first step in our runway repave project.
8 The club membership was assured by Mr. Beverson and Mr. Peterson that they will install the starting poles soon!.
9 The flight station merger has been put on permanent hold!

## New Business:

1 **Gene Peterson** brought aprons' for sale. These aprons have airplanes on the front, very macho butch. If you are interested in an apron see Gene Peterson.
2 **John Geyer** has already sent in the sanction for the fall ELECTRIC fun fly. Date is November 10, 2008 at the SVF field. Field will be closed except for the fun fly. The charity that companions this event has not been chosen as of this date.
3 **Tony Quist** modeled one of the new SVF polo shirts. Available in larger sizes. **Dr. Steinberg** has elected to take over the soft apparel business for our club. If we don't have it in stock we can get it. Golf shirts starting at around $20.00. Dr. Paul will be putting the inventory on the SVF web site.

**Door Prize Winners:** Paul Steinberg Prop, Dan Jacobsen Prop, Howard Kennedy Fuel, Val Roquein Fuel, Gene Peterson Fuel, Charles Beverson Fuel, Jerry wright Calendar, Aaron Moskowitz Calendar, Mike Peck Calendar, Dave Uhlving Calendar, John Neilson Battery Charger, Wayne Layne Tee Shirt

## 7-2-2008 Sun Valley Fliers Club Meeting Minutes (continued)


**50/50 Drawing Winner:**
**$52.00 winner Gene Peterson. Humm**

**Show & Tell:**
Welcome back **Rick Powers**, it has been several months since we had a show & tell.

1 Rick informed the membership that glow fuel prices are going up 40% very soon. Higher nitro fuels will be no existing in the near future. There are 2 nitro plants in the world one in the US and the other in China. The China plant either from floods or earthquake is now closed and will remain closed till after the Olympics. Nitro is used in many industrial and farming applications. Model fuel is at the bottom of the food chain so we take it in our shorts!

2 For the Spectrum radios they have a logger device for the 7 channel radios. This device is used to check the number of fades seen or not seen during a flight. This will help in locating the satellite receivers.

3 Slim Line has a new Pitt's muffler that is actually a muffler. The claim is no horse power losses.

4 Great Planes has developed a 120 size P51. According to the top scale guys this is as close as it comes in the ARF world. It has lots of top of the line hardware. It comes with a scale tail wheel location. It has a 2 piece split cowl, and scale flaps and ailerons. Sells for about $279.00 MANY THANKS RICK.

5 Please leave a generous tip for the waitress.

6 **Karl Kohnke** has resigned from the SVF board. If you are interested in the job talk to Frank Moskowitz and bring lots of money for a bribe. The job pays well and great bennies.

**Meeting adjourned at: 8:17 PM.**

*Rusty Fried, Secretary*

## Strokes: What to Look For

Although unable to find and credit the original source, the following knowledge of first aid is always helpful. The simple steps outlined might save a life or lessen later complications. None of us is getting any younger. Spread this around as you see fit.

### Stroke Identification:

A neurologist says that if he can get to a stroke victim within three hours he can totally reverse the effects of a stroke. He said the trick was getting a stroke recognized, diagnosed, and then getting the patient medically cared for within three hours, which is tough.

### Recognizing a Stroke:

Remember the "three" steps, S.T.R. Read and learn!

Sometimes symptoms of a stroke are difficult to identify. Unfortunately, the lack of awareness spells disaster. The stroke victim may suffer severe brain damage when people nearby fail to recognize the symptoms of a stroke.

Now, doctors say a bystander can recognize a stroke by asking three simple questions:

**S**: Ask the individual to smile.

**T**: Ask the person to talk and speak a simple sentence coherently. (i.e. It is sunny out today.)

**R**: Ask him or her to raise both arms.

If he or she has trouble with any one of these tasks, call 999/911 immediately and describe the symptoms to the dispatcher.

### New Sign of a Stroke

Another sign of a stroke is this: Ask the person to stick out his tongue. If the tongue is crooked—goes to one side or the other—that is also an indication of a stroke.

*Original source unavailable*

*A special thanks to David Mills of the Thermal Thumbers of Metro Atlanta for providing this information.*

# $ TREASURERS REPORT $ with *Gene Peterson*

Kinda slow in the treasurers dept in July. Everybody is on vacation I guess. Say hello to our two new members, **Jack David and Ryan Field** if you see them at the field or at the meeting.

Speaking of the meeting, the board of directors passed a resolution to obtain a speaker system for our meetings so you guys that sit all the way in the back of the room can hear what's going on and won't go to sleep. We even got wireless mics for the front table. We certainly are getting high class.

Anybody not been on the new road into the field? It is really nice. **Kudos to Bob Purdy who ventured out on the new road first and tried it out. After he didn't disappear we all ventured out. Remember, the parking lot is still dirt and you must drive slow on the parking lot.** We moved our "no Dust" sign to the beginning of the parking lot just to remind you.

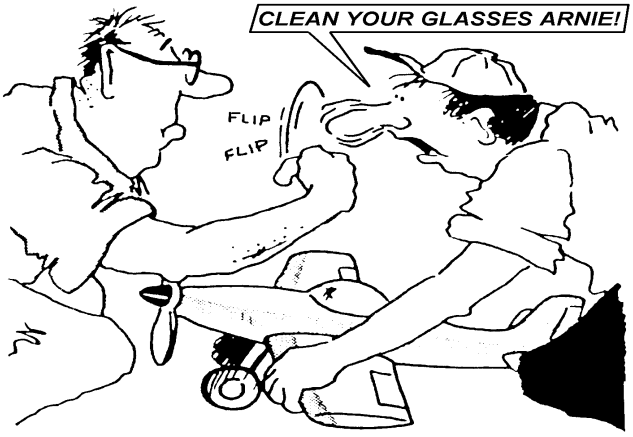
Have a nice back to school to month and see you at the field and the SVF General Meeting on August 6th.

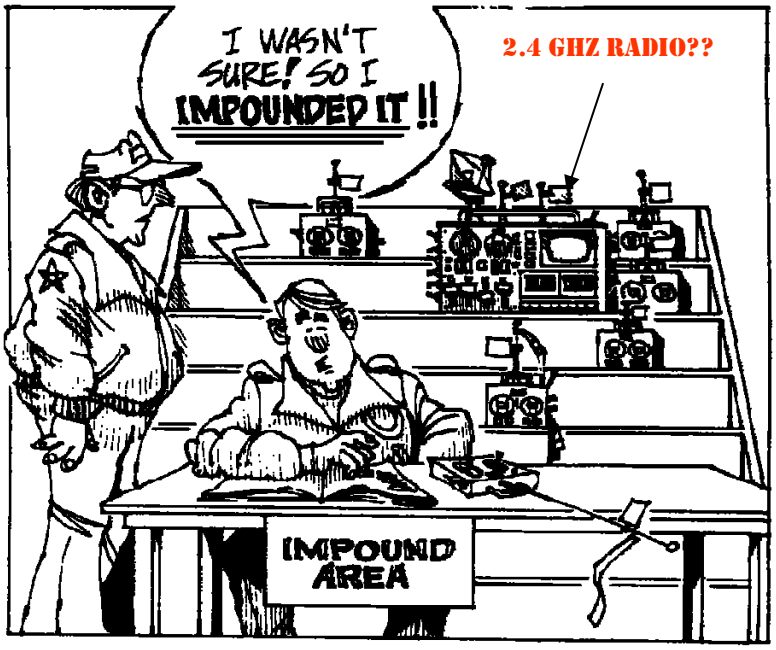
Regards

*Gene Peterson, Treasurer*

## AUGUST SVF BirthDay Boys

| First name | Last name | Member type | Dob |
|---|---|---|---|
| John | Boccia | Regular | 08/01/1963 |
| Steve | Tillson | Regular | 08/01/1946 |
| Ron | Marshall | Regular | 08/02/1961 |
| Edward | Andres | Senior | 08/04/1928 |
| Tony | Guyer | Regular | 08/04/1956 |
| *Frank* | *Moskowitz* | *Regular* | *08/05/1954* |
| Chuck | Arquette | Senior | 08/08/1932 |
| Jackson | Furedy | Regular | 08/13/1952 |
| Bill | Pearse | Regular | 08/14/1941 |
| Scott | Sibson | Regular | 08/15/1962 |
| Gary | Hedges | Regular | 08/16/1943 |
| Jim | Owens | Regular | 08/16/1955 |
| Bob | Niven | Regular | 08/16/1942 |
| Jim | Stabile | Regular | 08/17/1968 |
| Haim | Lichaa | Regular | 08/17/1972 |
| Richard | Hartman | Regular | 08/19/1940 |
| Ray | Fulks | Regular | 08/20/1947 |
| Robert | Dunn | Regular | 08/21/1936 |
| James | Musser | Senior | 08/21/1937 |
| Ronald | Thomas | Regular | 08/21/1949 |
| John | Harpenau | Regular | 08/22/1965 |
| Bob | Corley | Regular | 08/23/1950 |
| Brandon | Pearce | Regular | 08/25/1970 |
| Jonathan | Colner | Regular | 08/27/1949 |
| Ash | Zeller | Junior | 08/28/1991 |
| Greg | Evans | Regular | 08/28/1956 |
| Curtis | Westra | Senior | 08/31/1933 |



# THE SAFEty BOX

## Following the rules

*By **Tony Holden**, Safety Officer*

The original working title of this piece was "Why you still need to pin up, even if you are using the new **2.4 GHz radios**". Some what long winded, but it was the under lying reason this article was written. In my time as SVF Safety Officer I have yet felt the need to put pen to paper, unfortunately that all came to an end this past weekend. I have had very few occasions to speak to people over their actions, or the lack there of, at the flying field. In fact I have been very pleased at the way most pilots seem to resolve, what few flying conflicts there have been, between themselves at the time of the incidence. Those few I have talked with have always been most generous and polite in resolving the matter in question.

A large number of those people I have spoken to was in reference to the need to still pin up, even if they were using 2.4 GHz radios. This past weekend was no different after I noticed that one of our long time members had not pinned up. (I should add that I regularly check the board for current AMA cards, which is my primary concern.) I know it is easy to forget, or not realize that it is still a club rule to pin up even with the new radios. (There is a place on the left side of the main frequency board to peg up your card.) I very politely asked this member if had pinned up, he thought there was no requirement, I stated there still was. At this point, let's say the conversation, if you can call it that got very ugly. Among a lot of things that were said was that certain rules don't apply to 20+ year members, only new fliers and that he saw no point in the rule as he couldn't possible shoot anyone down.

On the latter point I don't disagree, that is the beauty of a 2.4 GHz radio. However that is not the reason we still ask everyone to pin up. Proof of current AMA membership is first and foremost. It is also a way to check who is actually flying on a particular day. I know Gene checks the pinned up cards for the club sticker, we still have people who try to fly for free. Now I know that none of this applies to this particular member, he has always been in good standing with both the AMA and the club, so why ask him to pin up? Because the rules apply to EVERYONE. There are some club rules that I am not really in favor of, but as a board member I cannot chose which rules to enforce and then only on certain members. The rules are made by the board; I am but one vote on that board. The reason I became a board member several years ago because I didn't like the direction the club was heading with the rules concerning large gas powered IMAC airplanes. As a result I have been able to influence the few small rule changes that have taken place. If you want to bring about a change, attend a club meeting; now "smoke free", at Deer Valley airport. Better still, stand for one of the club officer positions, elections are held every May. The bottom line is the rules are there for everyone's and benefit and safety and they apply just as equally to everyone, whether you are one of the clubs original founding members, or you joined last week. If you feel that you can no longer abide by those rules, then unfortunately it is time for you to find another club with rules that you can live with.

**TIPS: Instrument Panels**

An easy and cheap way to obtain an instrument panel for that sport model is to look through a full-scale airplane magazine for an advertisement showing instruments. I found one I liked and used my scanner to scan the image into the computer, and then pasted it into my word processor, scaling it to different sizes. This could also be done using a copy machine that will reduce. If using the computer any size can be easily scaled. I printed out several different sizes to have on hand. The ones I made were all in black and white, but if you have access to a color scanner and color printer, some really nice instrument panels could be created this way. You could also add color to black-and-white copy instruments using markers or colored pencils so they look more realistic.

## Chandler man, 69, killed in garage fire

by **Lily Leung and Senta Scarborough** - Jul. 27, 2008 06:37 PM
The Arizona Republic

A 69-year-old Chandler man died in a fire in his hobby workshop while working on **model airplanes** Saturday, fire officials said.

Authorities are identifying the victim as James Storts, the owner of Storts Security Systems in Chandler and Storts Electric, which is listed as a business in San Francisco.

The man's wife called 911 about midnight saying their two-car garage which serves as a part office, hobby shop and storage area was in flames with her husband inside, Chandler Fire Battalion Chief Dan Couch said.

This is the first fatal fire in Chandler this year, Couch said. The cause of death is still unclear.

The couple's home was located in the 1200 block of West Toledo Street near Alma School Road and Chandler Boulevard.

The two-car garage area was engulfed in flames when firefighters arrived and they were unable to attempt a rescue, Couch said.

The fire started in the garage/shop, which is attached to the house by a coverage walkway, and spread to the house attic. Firefighters were able to contain the house fire quickly. The house is not a total loss, Couch said.

The victim's wife was able to get out of the house safely and is now staying with her daughter who also lives in Chandler, Couch said.

Investigators have not determined the cause of the blaze but the fire doesn't appear to be suspicious, Couch said. The investigation is expected to take several days.

Fire investigators suspect that Storts was not working on a gas-powered plane but repairing an electrical one Saturday night.

Detective David Ramer, a Chandler police spokesman, said Storts' passion was flying model planes. He was an active member of the Sun Lakes Model Airplane Club.

Dave Gomez, the club's webmaster, called Storts "the heart of the club" in a Sunday morning post on the club's Web site, www.slmac.org.

Gomez also wrote, " . . . My thoughts also wander to so much about what made Jim a great friend, and person...His ease with laughter, oh how I will remember his laugh. His daring attitude toward flying, that this is fun no matter the outcome. The way he could jump in to work with both feet. The obvious way he just loved his family . . . "

## Nitro fuel prices increasing

Just came back from a club board meeting. Got the word that nitro fuel will increase 25% at the LHS after the next shipment!!!! Apparently the factory in China has been shut down because it produces a lot of pollution and the officials do not want competitors and spectators affected at the Olympics. Also the US has increased taxes on nitro from China. The US supplier of nitro is also increasing prices and apparently will not sell to those who buy it from China. The nitro drag racing guys are going crazy, they buy mostly from China.

I'm going to fly the gasser more.

*Editor:Taken from the Flying Giants forum*

# SVF MEMBERS PAGE

Remember those piles stacked up?

They are about to disappear!


July 23, 2008 6:59 AM
Gene Peterson pointing to sign stating No Flying while road work is on.

July 23, 2008 7:00 AM
Mike Peck pointing where to go, Charlie Beverson agrees with Mike.

July 23, 2008 7:03 AM

July 23, 2008 7:04 AM
Running shower, anyone?

# SVF MEMBERS PAGE








# SVF MEMBERS PAGE






**ATTENTION**
**SVF MEMBERS and GUESTS**
**Please drive slow as there Is still loose GSA on the road.**

# SVF MEMBERS PAGE

Ward Emigh scratch built Miles M20. See link below.

http://en.wikipedia.org/wiki/Miles_M.20#Specifications_.28M.20.2C_as_tested.29

Ron "Jet" Long *Turbo*

Airworld FW-190, 25% scale 102" wingspan, 47lbs. Moki 250cc Radial engine, 30" 3 blade prop from Solo, It has adjustable pitch. It is currently at 14 pitch. Sierra precision retracts, JR 8411 servos Weatronics 24-12 receiver

Dave Morales Jenny

Ray Olsen FW-190

# ARF Tips

Manufacturers strive to design and build almost-ready-to-fly (ARF) kits that any RC pilot can proudly show off and enjoy for many years, and more often than not, they are enormously successful. The quality, appearance, and flight capabilities of the airplanes available today are truly outstanding, and I am among those who want to ensure that my new models will still be around for me to enjoy 10 years down the road. Fortunately, a little extra time during the final assembly will help extend the life of that new airplane. Try out some of these tips on your next ARF.

**1. Seal down loose covering:** This should be the first step in the assembly of an ARF that uses heat-shrink covering. Use an iron or heat gun to remove wrinkles that may have emerged during shipping, and then turn the heat up and go over all the surfaces where the covering overlaps or ends on bare wood. Be sure you don't melt or shrink the covering too much, and pay particular attention to the engine compartment and wing-saddle areas. After you've sealed the covering where it ends on bare wood, apply **cyanoacrylate glue (CA)** along the edges to ensure that it stays that way.

**2. Fuel proof the firewall:** After a few flights, the firewall or engine compartment of airplanes powered by nitro and gas engines can incur damage if left unprotected. Check these areas, and if needed, paint, epoxy, and CA can provide the necessary protection. (Heat-shrink covering material will not sufficiently protect these areas from repeated exposures to fuel and gas residue.) The paint can be sprayed or brushed on, and the epoxy should be thinned with a little rubbing alcohol and applied with a brush. Thin CA can be dripped on the surface and allowed to soak in, but thick CA should be rubbed in with your finger; of course, it's a good idea to wrap your finger in plastic.

**3. Check high-stress glue joints:** All visible glue joints should be checked for cracks or stress breaks when you unpack a new kit. Damage can easily occur during shipping; changes in humidity levels from one part of the country to another can warp parts and cause cracks or other damage to joints. When checking the joints, pay particular attention to high-stress areas such as the wings, stabilizer, rudder, firewall, landing gear attachments, and servo trays. Repair the damage with CA or epoxy, and reinforce that area with balsa triangle stock, plywood, or fiberglass cloth.

**4. Rubber tubing around the clevis:** When the control surfaces deflect, pressure builds on the control horn and the clevis. The weakest link is the clevis—specifically, on its tiny pin. The pressure can generate enough force to pop that clevis pin loose but rubber tubing will help prevent this.

**5. Reinforce the screw holes with CA:** All screw holes in wood (balsa, plywood, and hardwood) should be reinforced with CA, especially those for the control horns, servos, canopy, and cowl. Drill the hole, insert the screw and remove it, and then drop thin CA into the hole. This will strengthen the wood and prevent it from being stripped.

**6. Seal fuel-tank tubing at the firewall:** Tubing that exits through holes in the firewall will eventually wear out from vibration, but you can prevent this by sealing the fuel tubing at the firewall with silicone sealant. Tanks that extend through the firewall should also have sealant around the hole; this will stop any fuel from seeping into the tank compartment.

**7. Properly installing the hinges:** The CA hinges that are included in many ARF kits do a fine job of supporting the control surfaces. They are usually chemically treated to encourage the CA to wick to all parts of the hinge and provide good adhesion, but this process can be helped along by drilling a small hole (3/32 inch) in the center of each hinge slot. This gap above and below the hinge will allow the CA to penetrate all the way to the back of the hinge.

**8. Foam tape on the wing saddle:** Exhaust residue that enters through the wing saddle can damage unprotected wood in the airplane's interior and will eventually ruin it. You can protect this area by applying foam tape around the wing saddle. It will form a fuel proof seal and is soft, so it won't hinder wing alignment.

**9. Thread-lock all bolts:** With the exception of engine screws, all of the bolts that screw into nuts, blind nuts, and threaded metal pieces benefit from thread-lock. It reinforces the grip and provides a measure of insurance that the screws won't vibrate loose. This simple step can save you quite a bit of grief later.

**10. Keep those wheels rolling:** To ensure that the wheels remain in place, use a small file or a rotary tool to grind a small flat spot on the axle beneath the wheel-collar setscrew. This flat spot will prevent the wheel collar from sliding off. Don't forget to apply thread-lock to the setscrew.

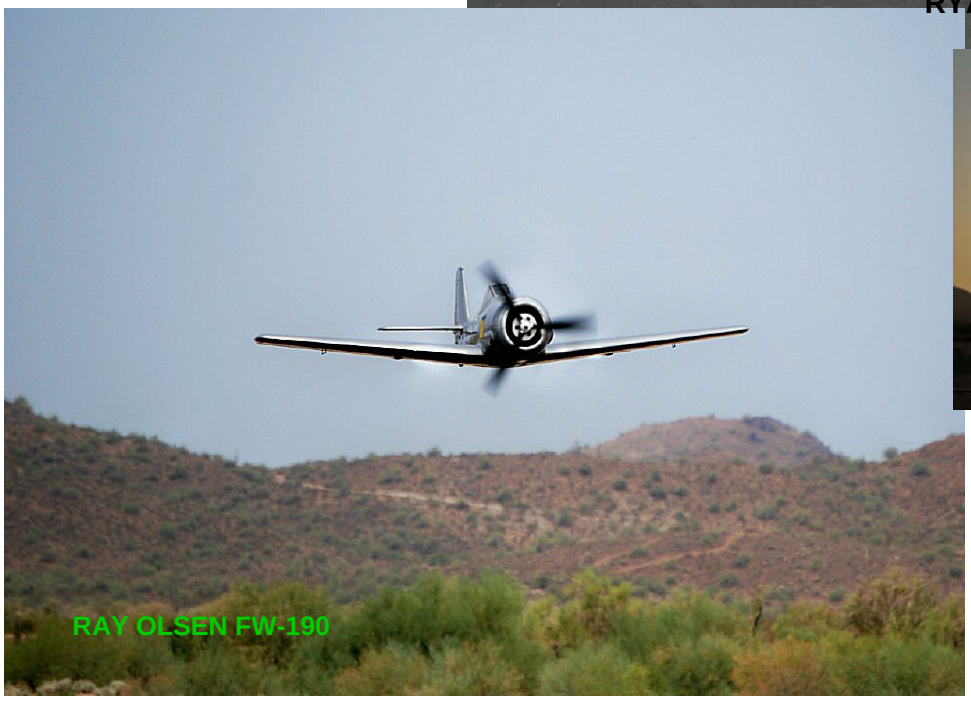
*From the* Aero-Shaft *newsletter, Flint, Michigan*

# SVF MEMBERS PAGE



TROY NEWMAN BIPES


RYAN FIELDS&MARTY JONES CUB



RAY OLSEN FW-190

**PHOTOS BY**
**CHARLIE BEVERSON**
**MARTY JONES**
**BOB PURDY**

# SVF MEMBERS PAGE

**One of the last few flight worthy Spitfires MK. IX**
**By *SVF* Haim Lichaa**


I recently returned from a trip to Israel, where I had the pleasure of visiting their Air Force museum, located just outside of Be'er Sheva. I was literally like a kid in a candy store. From Spitfires to P-51s, Migs, F15A, Dessault's and countless others. As you can imagine I left the museum with a sore index finger from all the pictures I took.
To my delight they also had a flight worthy Spitfire MK. IX on display, in their hangar.
The IAF's first two Spitfires were assembled in 1948 from parts of grounded Spitfires the British had left behind and from parts of enemy Spitfires that had been shot down over Israel, post WWII.
Many more were purchased from Czechoslovakia and Italy following the war. These Spitfires participated in Israel's War of Independence in an interception role and shot down 11 enemy planes (both belonging to Arab nations and Britain) without suffering a loss.
Later on all but one of the functional Spitfires were sold to Burma, with the exception of the "Black Spitfire" flown by Israel's former president, Ezer Weizmann.

***Few more photos of the IAF Museum on next page.***



# SVF MEMBERS PAGE

IAF Museum photos by SVF Haim Lichaa






haimiko@gmail.com Contact Haim for more IAF photos.

# Electric Motors 101

*by Vic Walton*

If you're like me, you sometimes use technology that you just don't know that much about. Take electric motors—how do they work really? I knew it had to do with magnets and electromagnets, and something about brushes, but I hadn't taken the time to figure out how they all worked together.

And now we have "brushless" motors—how do they work? So I did a little reading and have shamelessly cobbled together this primer from various Internet sources.

In a typical "brushed" DC motor, there are permanent magnets on the outside and a spinning armature on the inside. The permanent magnets are stationary, so they are called the stator. The armature rotates, so it is called the rotor. Clever, eh? Picture a big horseshoe magnet. Now take a big nail and drill through the middle crosswise, and put a wire through the hole; now the nail can spin head-over-heels. Wrap some wire around it, and then attach it to a battery. You have an electromagnet right?

Now this particular arrangement isn't that useful; the nail just sits there. Of course, if you were to reverse the current, it would flip around, right? And if you were really clever and fast, you could reverse the current again, just as the nail was flipping, and it would flip back. This is what the brushes in a brushed motor do. They make contact with terminals on the rotor (called the commutator) and as it spins, at just the right spot they break contact and reconnect on the other side, causing the electric field to reverse, spinning the motor around another half-turn (or one-third turn, since most electric motors have three coils for efficiency). The horseshoe magnet is your stator, the nail the rotor.

This setup works and is simple and cheap to manufacture, but it has limitations because of the need for the brushes to press against the commutator:

1 It creates friction.

2 At higher speeds, brushes have increasing difficulty in maintaining contact. They may bounce off the irregularities in the commutator surface, creating sparks. This limits the maximum speed of the machine.

3 The current density per unit area of the brushes limits the output of the motor.

4 The imperfect electric contact also causes electrical noise. Brushes eventually wear out and require replacement, and the commutator itself is subject to wear and maintenance.

5 Having the electromagnet in the center of the motor makes it harder to cool.

So in comes the brushless DC motor. In this design, you put the permanent magnets on the rotor and you move the electromagnetic to the stator. Think about that. The electromagnets are on the stator—they are stationary. That's a problem because now you need something even more clever than a commutator and brushes to flip the polarity of the current at the right moment. This very clever thing is the microcontroller in your ESC. What it does is sense the position of the rotor (utilizing something called the EMF feedback through the main phase connections, which I have decided I don't need to understand) to switch the field rapidly at just the right moment to pull the permanent magnets on the stator around at the RPM that you have requested. This system has all sorts of advantages:

1 There is no sparking and much less electrical noise. A happy situation for our radios, particularly as the motors get bigger.

2 There are no brushes to wear out.

3 With the electromagnets on the stator, they are easier to cool.

4 You can have a lot of electromagnets on the stator for more precise control.

5 The timing of the pulses sent to the electromagnets on the stator can very precisely adjust the speed of the motor.

So that's how it works. But one more thing: what's an in runner and what's an out runner?

An in runner is a brushless motor with the permanent magnets rotating inside the electromagnets; in an out runner this situation is reversed, with the permanent magnets on the casing of the motor and the windings of the electromagnets inside. Out runner motors generally have some torque, but spin somewhat slower. This makes them better for spinning large propellers, which our airplanes need. In runner motors spin a lot faster but with less torque; this means that in order to get the same torque, you have to put the in runner in a gearbox, adding weight, complexity, and most importantly, cost. However, if you can afford it, this is the most efficient setup for any given size motor.

By the way, airplanes aren't the only things that use brushless motors. Computer hard drives, CD drives, and hybrid cars are some of the other uses. It's only a matter of time before someone takes the brushless motor out of a Pruis and uses it in an airplane.

*From the San Gabriel Valley Radio Control League, South El Monte, California*

# Sizing the Model Airplane Propeller

*From the Suffolk Aeromodelers, Long Island, New York*

The manual for every engine will give you a range of propellers that is safe to use with that engine. The manual does not specify the exact size propeller because the propellers must be sized for the airplane they are used with. It is very important to stay within this recommended range.

You can also refer to the Top Flite propeller selection chart below to determine the range of propeller sizes that are acceptable for your engine size. Keep in mind that the Top Flite chart is sized for 2-stroke engines. Consult the manual for 4-stroke propeller sizes because these engines produce more torque at the slower speeds and will use a larger propeller.

The propeller puts a “load” on the engine. If the load is too small or too large it will damage the engine. You must choose a propeller within the recommended range that best suits your airplane and your flying style.

The characteristics of a propeller are defined by the diameter and the pitch. The diameter is the distance from one tip to the other. The pitch is defined as the distance the propeller would move the airplane forward in one rotation in a “perfect” world. Perfect world meaning that the propeller is 100% efficient and the air does not compress; neither of which is practical in the real world.

The “twist” of the propeller is what determines the pitch. Basically the length of the propeller and its twist defines its characteristics.

A model airplane propeller size is always referred to as its diameter x pitch. An 11-inch-diameter propeller with a 6-inch pitch is called an 11 x 6 propeller.

Generally speaking, the larger the diameter of the propeller the more thrust will be produced by the engine. The larger the pitch the more speed you will get out of your engine. A small diameter, larger pitch propeller will move a small volume of air really fast. A large diameter small pitch propeller will move a large volume of air at a slower speed.

Increasing either the pitch or the diameter puts a larger load on the engine. To keep the proper load on the engine, you generally change the pitch and diameter together. For example, 9 x 7, 10 x 6, and 11 x 5 propellers would all put a very similar load on the engine.

If you want to change the maximum RPM, then you change the load on the engine. Replacing a 11 x 6 propeller with a 10 x 6 propeller, or replacing an 11 x 6 propeller with an 11 x 5 will decrease the load on the engine and raise the maximum RPM. Changing from a 10 x 6 to a 10 x 7 propeller, or changing from a 10 x 6 to an 11 x 6 will increase the load and lower the maximum RPM.

If the propeller load is too large, the engine will not turn fast enough to fly the airplane and could cause the engine to overheat. If the load is too small the engine will turn too fast damaging the engine. So it is important to stay within the window recommended by the engine manufacturer. It is also important to know that the engine must be tuned each time the propeller size is changed because of the change in load the engine sees.

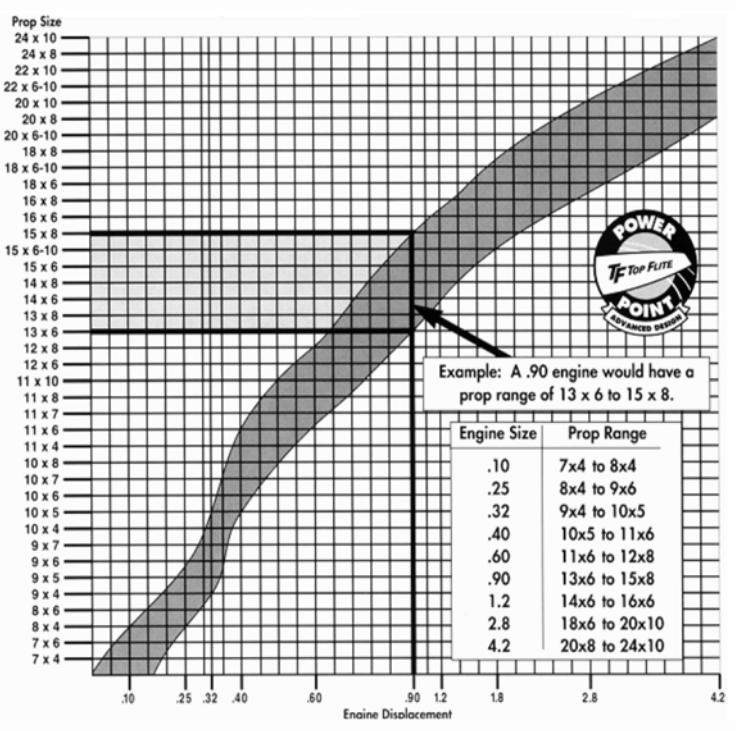
When choosing a model airplane propeller you must keep in mind that you are choosing the propeller based on how you want the airplane to fly. This really has nothing to do with the engine other than the fact that you must stay within the recommended window of propellers to prevent damaging it. The same engine used on two different airplanes may be using two completely different propellers. If you have airplane with low drag designed for speed then you will want more pitch. If you have a slow airplane with a lot of drag, such as a biplane, you will want more diameter (thrust) and less pitch (speed).

Choosing a propeller that best fits your airplane and your flying style is a trial-and-error process. Pick up several propellers within the recommendation range. If your airplane seems too sluggish when taking off and accelerating, then change to a lower pitch, larger diameter propeller. If your airplane has plenty of pep and you want to make it go faster, then change to a larger pitch, smaller diameter propeller. It’s really fun to experiment with different propellers and observe how the airplane reacts.

**How to use the chart to find the right propeller for your engine:**

1 Find your engine size along the bottom axis.
2 Follow the line to where it intersects with the shaded area.
3 Follow each point within the shaded area to its corresponding propeller size on the left axis. This will be your approximate propeller range.

**Note:** Four-cycle engines are typically higher torque engines and should use the larger propellers indicated in the range. Recommended propeller ranges will vary depending on your particular engine and airplane. This chart represents average propeller usage and should be used only as a general guideline. Always refer to the manufacturer’s instructions included with your engine.



# SVF MEMBERS PAGE


**Dr. Paul new E-FLIGHT DH Beaver ready for floats this fall.** ***Photos by Dr. Paul***


**Three shots by Eric Stevens with his new Canon camera.**

## Summer Safety Steps

Summer is here! Some key points to keep in mind as our days get hotter: stay hydrated, take frequent breaks, and keep some shade handy.

Heat can create extra stress on your body, so it's important to pay attention to that inner voice. Don't y'all hear that voice sometimes? Seriously though; know your limits. Some of us can't plow through the days like we used to.

We might remember having done strenuous work during the summer months, but do you remember how old you were then? Sad but true, age can make a difference on how well your body can tolerate the hot days ahead.

The summer months will afford more flying days, but they'll also be hot. Sunscreen is another agent to protect your skin from the damaging effects of long exposure to Sol, our sun. I'm sure that at some point during our lives we have all experienced a sunburn or two, which probably led to "I ain't gonna do that again."

You have better protection from the sun's effects available these days than you did in the past, so take advantage of sunscreens and wear a hat to protect your head. A wide-brim hat will offer more protection than the plain old baseball cap most of us wear. The straw hats, like you see on the golf course, are a good choice too. They allow air to circulate to keep your head cool, similar to a cowl on an airplane. The sun can cause skin cancer, a topic I would just as soon avoid.

In addition to protecting yourself from the ravages of the sun, add insect repellant to your list of stuff you'll wish you had in your flight box. Mosquitoes are a real nuisance, but they can also carry some nasty parasites in addition to disease. The mosquito problem is really noticeable at the end of a day of flying. As the sun starts to get low on the horizon, the little bloodsuckers seem to come alive.

The ingredient I have heard the most about in insect repellants is DEET. I know that like everything else, people tend to get the products with the highest DEET content.

While the stuff works fairly well, keep in mind that you are spraying a chemical on your body on purpose. If you're serious about not donating blood to perpetuate the mosquito population, you'll be spraying a chemical on your hands and rubbing it on your face, neck, hair, shirt, shorts, legs, and just about anything else you can reach. Go easy on the DEET—I don't know what it is or how it works, but I would be willing to bet that it doesn't taste good and it really could cause red, bloodshot eyes. Take some time, read the label and buy small quantities just in case you don't like it or it has some other undesirable effects.

How about wasps? It's wasp season too, you know. People usually get into a wasp nest because they were unseen, hidden under something, and so on. Wasp spray would be a good idea for the club to keep in the storage shed just in case.

Is anyone in your club allergic to bees and/or wasps? Perhaps keep a bee sting kit handy, again just in case.

*From the Temple Aero Modeler's Newsletter, Temple, Texas*

## Does Radio Control Flying Qualify as Exercise?

Is the flying of Radio Control aircraft considered adequate exercise? Arguments for and against are described below.

**1.** Almost every flier gets up at 6 a.m. to fly in the mild breezes of dawn. Problem: A person has to get up more than once before they are considered to be doing sit-ups.

**2.** RC fliers tend to have larger thumbs. Problem: There is no known association between cardiovascular fitness and large thumbs.

**3.** RC fliers often bend down or squat near their airplanes. Problem: It has been noticed that once they are down, they have a hard time getting up.

**4.** Some of the terminology sounds like exercise. For example, sport aerobatics, fuel, or gear. Problem: Terminology in and of itself is insufficient evidence of an adequate aerobic exercise program.

**5.** RC fliers often are seen walking in the woods. Problem: Generally, they only walk in the woods once a quarter, and that is not for exercise but to recover a downed aircraft.

**6.** Weight lifting involves a buddy to spot the lifter. Problem: Even though club members use a "buddy box" and often "spot" real airplanes, the concepts involved are quite different than those used in body building.

**7.** In an exercise program, an individual is known to sweat after about 20 minutes. RC fliers also are known to sweat after about 20 minutes. This is the only assertion where similarities exist between exercise programs and RC flying.

*continue*

**8.** People who exercise usually have better eyesight. Fliers often have to see at great distances but generally cannot tell whether the object they are looking at is right side up.
**9.** Persons involved in exercise programs often are fixated on building the perfect shape. Similarly, RC builders are fixated on achieving the perfect shape, but in this case, we are talking about the aircraft, not the person. The individual may actually be way out of shape.
**10.** Those involved in exercise programs are concerned about weight gain. RC builders are equally concerned about weight gain, but again the focus is on the aircraft.
**11.** People who are successful in exercise programs generally work out at the same time of day, five times a week. RC fliers can be found at the field on the same days and times.
Conversations among those who exercise regularly often are laced with letter and number combinations, (B-6, B-12, the B complex). Similarly, RC flier conversations contain letter and number combinations (B-52, P-26).
*From the Eglin Aero Modellers, Fort Walton Beach, Florida*

## A123 Cells

*By Carlos Reyes*

Electric model airplanes have been around for roughly three decades. A huge problem in the early days was battery energy density. In other words, they simply weighed too much for the amount of juice you could get out of them. This situation has improved dramatically in recent years with the advent of Li-Poly cells, but a battery pack for a larger model can easily cost hundreds of dollars. The advent of electric cars, such as the Toyota Prius has spurred an enormous amount of research into new battery technologies. In this article, I will describe an alternative to Li-Poly batteries that offers intriguing possibilities.

A123 Systems (www.a123systems.com) produces Lithium-Ion Nanophosphate cells. These cells have a nominal voltage of 3.3 volts and can withstand continuous discharge rates of 30C. They can be safely discharged down to 2.0 volts. The voltage remains fairly constant through the discharge cycle, but they do have a sharp drop-off at the end. Expect 300 cycles before you notice any reduction in capacity while at 1,000 cycles you'll have 75% of the original capacity. They are very safe. Overcharging or over discharging will not cause an explosion and will have little effect on the life of the battery. Balancing the cells when they are charged is still a good idea, but not absolutely required. They can be charged immediately after use in 15 minutes.

The cells are available in two sizes. The original M1 cell has a capacity of 2.3 Ah and weighs 70 grams (2.47 oz). A newer, smaller size can hold 1.1 Ah and weighs 40 grams (1.41 oz).

The primary source for A123 M1 cells has been DeWalt 36-volt portable power-tool battery packs. Each pack contains 10cells. I purchased two of these for $100 each through Ebay. The prices appear to have gone up recently to the $120-$130 range. Single cells can also be purchased online for $15 from a growing variety of vendors. You can find two of the smaller cells in a Black & Decker VPX battery pack which sells for about $15. The smaller cells can also be had for $12.50 each.

There are many Li-Poly chargers that support or can be modified to support the charging of these A123 cells. Because of the sharp voltage drop-off when discharged, you are probably better off using a timer when you fly. Otherwise you need your ESC to shut off the motor when 2.0 volts per cell is reached.

Bottom line? These cells give you 70% the energy density of Li-Polys for about 45% of the price. For many of us, that is a good trade-off. They are extremely safe and can be charged in 15 minutes. If you end up buying half as many battery packs because of the shorter charge time, then they become a much better value.

*From RCadvisor.com*

**SVF MEETING AUGUST 6, 2008 @ DEER VALLEY AIRPORT 7:30 P.M.**

# AMA NATIONALS STANDINGS in Precision Aerobatics

## RC Precision Aerobatics: The Rest of the Story

That famous broadcaster, Paul Harvey, usually ended his broadcasts with the title of this article. I chose to start that way because there is more to tell than already covered in the *NatsNews* for Precision Aerobatics 2008. I need to talk about those who are going to the World Championships in 2009 in Portugal.

Who goes? As I mentioned in my last column each country is allowed three pilots per team. We saw those happy faces coming in first, second, and third in our Nats finals/team trials: Jason, Andrew, and Brett. There is still more to tell and this is the newest chapter in our quest for a World Championships in 2009.

The defending World Champion has a decision to make. He can return to the next championships as the defending champion, or he can return as part of a three-pilot team. Wisely, luckily, and generously, our defending World Champion, Quique Somenzini, graciously opted to return as the defending World Champion. This allows the USA to bring three more pilots to the Worlds in 2009.

Quique's points will not count for our Team Championship even though he is still part of our 2009 team. I am confident we all support Quique in his decision, probably most of all our newest addition to the team: Brett Wickizer.

Quique had some engine problems with his beautiful Euphorias in the finals, as we all saw, but we can also be confident that if he was in competition for a place on the team, things would have looked different for those final few flights. Since his place on the 2009 USA Team was sealed when he took home the gold in his home country of Argentina last fall, he could take a more philosophical view of his engine hiccups at our National Championships/Team Trials.

Someone who is so dedicated to our country to sit out one World Championships so he could fly for us, the USA, in future world championships deserves all out appreciation.

No, you still don't know all the rest of the story yet. The fifth and final chapter of this story is to be written by us.

Chapter one is our first team member, the defending World Champion, Quique Somenzini. Chapter two is our two-time National Champion, Jason Shulman, going to the Worlds for a record sixth time. Chapter three is Andrew Jesky, on our team for the second time. Chapter four is our newest team member: Brett Wickizer.

These are our four team members, but they need us, the fifth team member. Each of us needs to do his/her part to send these four fantastic, world-class pilots to Portugal in 2009. We did a great job fund-raising for the 2007 World Championships and now we can do it again.

We are sending the best of the best, the reigning World Champion, our two time National Champion, and two of the brightest and best of our youngest world-class champions. Bring home the team and the individual gold. We are so proud of all four of you.

See you in Muncie and in Portugal in 2009.

*Jim Quinn*


| | | | | |
|---|---|---|---|---|
| 1 | JASON A SHULMAN | O | 2000 LAKE MARY | FL |
| 2 | ANDREW R JESKY | O | 1994.54 MONROE | MI |
| 3 | BRETT M WICKIZER | S | 1960.09 THE WOODLANDS | TX |
| 4 | QUIQUE SOMENZINI | O | 1952.67 SPRINGFIELD | OH |
| 5 | GORDON D HYDE | O | 1941.63 TUCSON | AZ |
| 6 | SEAN M MCMURTRY | O | 1841.12 MOORE | OK |
| 7 | CHAD NORTHEAST | O | 1882.55 CALGARY | CAN |
| 8 | TROY A NEWMAN | O | 1846.25 GOODYEAR | AZ |
| 9 | DAVID K LOCKHART | O | 1833.81 MEDFORD | NJ |
| 10 | BILLY CUNNINGHAM | O | 1785.08 TULSA | OK |

**F3A Finish**

YOUR AD HERE






## Next Month Issue

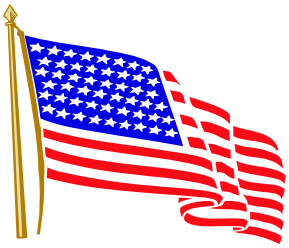
**Don't have any idea right now what will be in the next *SR.* Your input is always welcome. Hot months are here, stay cool, use sunscreen. The SVF got some cool stuff for sale to beat the heat. See Doc Paul. Would you like to be notified when the *SLOW ROLL* new issue is available? Give Gene your e-mail address. AZ49ER@COX.NET**

***Hope you will enjoy it. Bob*** *rcbobsvf@aol.com*

## This Month Issue

**Well we got the grade stabilizing asphalt (GSA) on the dirt road. Good job! There is still loose gravel so drive slow. Don't drive to close.**

**Again we got some good photos from members, our thanks again to you. *Please ID the pilot and aircraft. Thanks*** *Remember to* ***ZOOM*** *the* ***PDF*** *page to see more.*



# THE SLOW ROLL

**Club Officers**
**Frank Moskowitz, President**

**Tony Quist, Vice President**

**Gene Peterson, Treasurer**

**Rusty Fried, Secretary**

**Walt Freese,**
**Website Supervisor**

Please check your Membership list for Phone numbers.

**Board of Directors**

**Charlie Beverson '08-10**

**Tony Holden '07-09**

**Paul Steinberg '07-09**

**Mike Peck '07-09**

**Eric Stevens '07-09**

**Ron Thomas '07-09**

**Dan Jacobsen '08-10**

**John Geyer '08-10**

**Bruce Bretschneider'08-10**

---

Sun Valley Fliers

***First Class Mail***


***SUN VALLEY FLIERS***
***P.O.BOX 31816***
***PHOENIX,AZ. 85046-1816***

***WWW.SUNVALLEY FLIERS.COM***


**To:**

**33** SUN VALLEY FLIERS ARIZONA **YEARS**

AMA CHARTERED #921

***SINCE DECEMBER 1974***