THE SLOW ROLL

CHARTERED #921
Since DEC. 1974

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

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October 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 from RCU …Prez report…Minutes… B'Days & Treasurer Report…..**
Paving Runway photos….Good 2.4 GHZ Article….SVF Members photos/ Fresno/Scalemaster…..
Safety Box….Gone Fishing …Do You Remember?....OEAF/ TURKEY/WINGS-AZ etc...*ENJOY!*

Ron Long Trophy Winning F-86

THE PRESIDENTS CHANNEL

FRANK MOSKOWITZ

Welcome to the October Slow Roll

I hope by now that all our members have seen the great job that Markham Contracting Company has done on repaving our runway. We will re-stripe in a couple of weeks. We ordered some more gravel so we can bring the runway edges and ground to an equal level. Other improvement items to come will be to resurface all our tables with new outdoor carpeting, painting the Ramada and dragging (de-weeding) the park flier area south of the J-John. We are currently negotiating with a contractor to perform quarterly maintenance on and around our field to maintain it in the best possible appearance. As I mentioned in last month's letter all members need to practice good maintenance while onsite. Picking up cigarette butts, empty water bottles, etc. If you see weeds… pull them. Here are two of our members caught in the act of taking care of our field. We all need to chip in.

Remember this month is the One Eighth Air force Scale Model Fly-In which will be October 25th and 26th. Visit our website www.sunvalleyflier.com for more information on this event and others coming up in November. One last note is that Paul Steinberg has updated the prices on hats, jackets, T-shirts and they are posted on our web-site. We will be seeing cooler weather come in real soon. So if you want to order a windbreaker or jacket, now is the time to do it.

I hope to see some more members at our next club meeting **Wednesday October 1st 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

UPCOMING EVENTS AT THE SVF FIELD

Sun Valley Fliers Club Meeting Minutes
Date, September 3, 2008

The meeting was called to order at 7:29 pm by President Frank Moskowitz. There were 30 members in attendance.
Guests: None
New Members: None
New Solo Pilot: Marty Knopf.
Secretary's Report: Rusty Fried: approved as published by vote.
Treasurer's Report: Gene Peterson : approved as read by vote.
Safety Officer Report: Tony Holden: None.

STILL DRIVING TO FAST, WE STILL HAVE DUST PROBLEM. NO DUST SPEED LIMIT ON THE ROADS AND PARKING LOT!

Old Business:

At this meeting our President got his computer projector to operate correctly and had a great video of Ron Long learning to fly. Also there were pictures of our field from the air. Ron's video was produced by Brian McKelvey, way to go Brian.
Ramada repainting is progressing, the Ramada has been pressure washed and now is ready for paint. Mr. Wallace Balfour, a friend of Tony Holden gave the Sun Valley Fliers the paint to repaint the Ramada. Many Thanks Wallace.
It was voted and approved to purchase a small aircraft holder for the start up pad priced mat $38.00

New Business:

The 1/8th AF has found a place 2 miles from the SVF field for overnight camping. The facility is not sanctioned by the 1/8. See the 1/8 website for the location.
Dates October 25-26, 2008. (Contact Bob Frey)

November 8, 2008 is the E fly turkey fun fly, John Geyer has selected the Boys & Girls Club as charity recipient for the event. The event fees will be $15.00 donation per person, However you can donate more.

November 15 & 16, 2008 will be the SVF's first fall pattern contest. *Editor: Will there be a flyer?*

Door Prize Winners: Fuel- Mike Vivian, Fuel-Bob Wainman, Fuel Pump-Tony Quist, E Box-Jeff Wainman Futaba Hat-R J Powers, Rx Foam-Bob Purdy, Foamey-Rusty Redonated, Futaba Hat-Bernie Frank Airplane stand-Jay Steward
50/50 Drawing Winner: Won by Bruce Bretschneider. The amount was $37.00.

FOR ALL CLOTHING NEED SEE Dr. Paul Steinberg.
Show & Tell:
Rick powers brought the new Park Zone Corsair, like the T-28 it is a great flyer. Priced $279.00 complete. The Corsair comes with a 2.4ghz radio.
At the Scale Masters RJ Powers took 4th in class. Rick Powers took 3rd in team scale with a B-25. ***More in SR***
Rick talked about binding problems with JR 2.4GHZ radios, easy to solve.
Rick brought an Alpha 40 trainer, same as the older model with new paint, priced at about $299.00.
Bob Frey brought his ARF P-38 he is redoing, very nice job Bob.

Meeting adjourned at: 8:29pm

Rusty Fried, Secretary

$ TREASURERS REPORT $ with *Gene Peterson*

Well, it happened, the Dues Billings hit the mail this week. Watch for them. If you have any questions call me at 602-579-0925 or email **az49er@cox.net**

As you can see if you have been to the field, that the new runway is in and looking good. They had a little asphalt left and put it down in that area of the road where rains will wash out and leave water. Hope that helps that problem a little. Striping will happen soon. Should only close the field for a few hours. I'll try and get as much warning to everyone when a day is announced.

Painting of the ramada will also happen soon, and will close the field for a morning most likely. We will get you as much warning as possible when this gets scheduled.

Have a nice cool month and don't forget the 1/8 Air Force event on the 25th and 26th. I'll be the cool dude selling t shirts and hats and such.

Best Regards

Gene Peterson, Treasurer

OCTOBER SVF BirthDay Boys

First name Last name	Member type	Dob
Robert Purdy	***Senior***	***10/01/1935***
George Metro	**Regular**	**10/01/1943**
Brian Clermont	**Regular**	**10/02/1962**
Dean Brox	**Regular**	**10/02/1973**
Warren Folkerts	**Regular**	**10/03/1956**
Cecil Walters	**Lifetime**	**10/03/1940**
Joseph Mallard	**Regular**	**10/04/1985**
George Kroeger	**Regular**	**10/04/1971**
Bruce Bretschneider	**Regular**	**10/05/1940**
Tim Houghton	**Regular**	**10/15/1947**
Richard Mesh	**Regular**	**10/16/1942**
Chad Winter	**Regular**	**10/16/1966**
Lee Piester	**Senior**	**10/17/1938**
Paul Steinberg	**Regular**	**10/17/1951**
Tim Nelson	**Regular**	**10/19/1946**
Ryan Field	**Regular**	**10/20/1980**
Charles Vicary	**Senior**	**10/21/1936**
Ken Rhoads	**Regular**	**10/22/1950**
Scott Stemen	**Regular**	**10/26/1960**
John Mangino Sr.	**Regular**	**10/27/1942**
Douglas Dennis	**Senior**	**10/28/1941**
Gary Overby	**Senior**	**10/28/1941**
John Shutt	**Senior**	**10/29/1938**
Neil Wallis	**Regular**	**10/29/1969**
Howard Buxton	**Senior**	**10/31/1937**

SVF RUNWAY BEING PAVED ON SEPTEMBER 16, 2008

THE SVF RUNWAY BEING PAVED ON SEPTEMBER 16, 2008

SVF MEMBERS PAGE

Editor: Marty Jones has contributed many photos for the Slow Roll, decided to take a Alaskan vacation with his wife, Adrienne. Also seen in the photo their fishing guide and friend Bob McDonald. *Thanks Marty for your photos*.

It was mention they caught over 40 fish, and many of them went back in the lake. Adrienne caught the biggest one.

Photos by Marty Jones??

Yuri and his Kantana

SUN VALLEY FLYERS MEMBERS DO GOOD

The **U.S. Sale Masters Qualifier in Van Nuys, California** is always a well attended event. This year was no exception, with about 30 competitors (pretty good for a scale event) and some tough ones at that. Broke up into three categories, Expert, Team and Advanced, most of which were in my category (Advanced.)

The **San Fernando Valley flyers** managed to put together a very nice event despite some personnel issues. The weather that weekend was terrific, about 85 degrees with winds 5 to 10 right down the runway.

Team Powers got there on Friday and went through a brutal static portion of the event. The first competition with the B-25, we never knew what to expect. Unfortunately they beat us up pretty badly, that's what's the first competition with a virgin airplane is all about. The items that they found wrong are easy to fix and I will do much better at the next qualifier (Gunsmoke, Mesa, March 2009). RJ didn't fair any better with his P-47. We managed to get in a couple of practice flights to get used to the field.

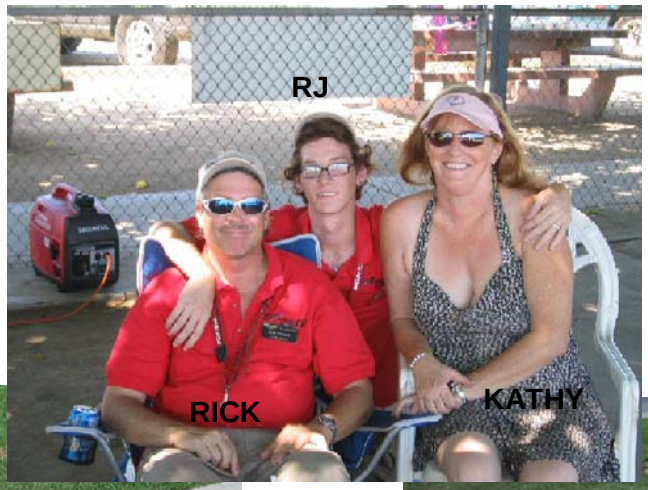
The field is gorgeous with a long row of huge mulberry trees for shade as they had no other built up structures. Grass every where, concrete pits and a 600' runway. The only drawback was that it was about 100 yards down the concrete taxiway from the pits to the runway, (maybe it was 50) but it was a long way to push or carry the aircraft. Next year I'm bringing a remote control tow vehicle, maybe a jeep. The field was actually a park right in the middle of the city. They even had U-control field on the other side of the parking lot with a competition going on at the same time. It was neat to watch them doing aerobatics between our rounds of competition.

Saturday started out slow as usual and my first flight sucked, probably nerves, new airplane, unfamiliar field. I'll make as many excuses as I can. But that's ok, that will just be my throw away round. RJ's flight went well but the judges didn't agree, oh well what the heck do they know. The second flight went very well, I got 9's and 10' on a lot of maneuvers. Sunday went even better when I got 9's and 10's on almost every maneuver, in fact I got the top flight score for the contest. To my amazement I even out flew the sole jet competitor, a gorgeous F9F cougar a navy Korean war era fighter. The jets always seem to have a particular advantage, perhaps its speed, smoothness of flight, or sound that's hard to beat.

The Cougar's static was a 94, our static was 87, with the flight scores averaged over three flights. I needed to out fly him by about 21 points, a nearly impossible task. To my surprise we pulled within 3 points of him. Unfortunately the competition was stiff and the difference between first place (the Cougar) and third place (me) was three points out of a possible total of 200 points. RJ managed a very respectable fourth place.

Best of all we got to bring home both airplanes in one piece, there were three competitors that didn't get to do that. Can you imagine come all that way, pay all that money, take your baby home in a bag. (crash)

Anyway hope you all enjoyed the story. Rick ***GO TEAM POWERS***



SVF MEMBERS PAGE

SVF'S AT THE FRESNO JETS FLY IN PART 1 OF 2

SVF MEMBERS PAGE

SVF'S DO GOOD AT THE FRESNO JETS

Photos from RCU
And by Tony Quist

Trophy winners in order:

Best Turbine Jet - John Gerhardt/Scratch built A-G7
Best Scale Finish - Ron Long/BVM F-86 MetalMorph
Pilots Choice - Ron Long/BVM F-86 MetalMorph
Best Ducted Fan Jet - Dan Johnson/BVM F-86 EDF
Best Scale Flight - Joe McBride/MIBO A-10
Best Sport Finish - Ron Long/BVM Ultra Bandit
Peoples Choice - Ron Longs Stable of Ships
Perpetual Bombing Trophy - Steve Unze/BVM Super Bandit

Ron Long and his crew drove all the way from Arizona and practically stole the show... but we dont give away trophies because you drive a long ways... no sir. Not only does Ron own a stable of ships that will make you drool, but he and all the rest of the AZ guys are fun to play with. And on the way out of the pits, they swept the floor and emptied the trash. No Kidding. Now, we have seen guys buy ships and have other people fly them, or let them sit like hangar queens... but Ron grabbed the respect of all the veterans by getting out there and giving it hell... and at one point, pulled off a landing save in the "Metalmorph" that had everyone holding their breath. Good job Ron... you can fly with us anytime!

So thats Ron in the picture with his yellow Ultra Bandit and "MetalMorph", a BVM F-86. Yes, all those trophies are His.

The Beautiful scratch built A-7 belonged to John Gerhardt who took the Best Turbine Jet award home.

ONE EIGHTH AIR FORCE

SCALE MODEL FLY-IN

OCTOBER 25 & 26, 2008

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SVF FIELD OFF CAVE CREEK RD AT JOMAX

A GOOD TIME FOR EVERYONE

FRIDAY EVENING HOSPITALITY HOUR WITH PIZZA & WINGS

SATURDAY NIGHT DINNER AT THE FIELD

OEAF'S UNIQUE AWARDS FOR MANY FLIGHT CATEGORIES

REGISTRATION STARTS AT 7:30 AM SATURDAY

AMA REQUIRED AMA SANCTION 08-1767

$10.00 ENTRY PER PILOT 100 DB SOUND LIMIT

ALL TYPES OF SCALE AIRCRAFT WELCOMED

PARKING $5.00 PER DAY NO OVERNIGHTCAMPING

THREE D FLYING NOT ALLOWED

FOR MORE INFO CD: TOM GUCA 602-509-0895 tguca@cox.net

COMMANDER: AUSTIN GOODWIN 480-357-1816 n4351x@aol.com

www.oneeighthairforce.org

The Safety Box

Dr. Paul's Corner, October 2008

When I'm at the flying field seeing people enjoy their days flying, I'm reminded of the fact that we are entering the flu season shortly and for some, this could spell trouble and serious problems thus grounding them. Make no mistake, the flu is a specific disorder and rather easily diagnosed by your health care provider. I see folks call everything from seasonal allergy, colds, asthma and gastroenteritis (stomach flu), the flu! Influenza is a very serious disease however that affects people of all ages. In an average year, the flu causes around 36,000 deaths in the USA (mostly among those aged 65 years or older), and more than 200,000 hospitalizations. The flu season usually runs from November through April each year and in Arizona it may start later..as late as Christmas! During this time, flu viruses are circulating in the population and you will be exposed to them. An annual flu vaccine (either the flu shot or the nasal spray flu vaccine) is a very effective and safe way to reduce the chances that you will get the flu.
The best time to get the vaccine is from late September through November, but any time during the season from November thru January work. There are no reported vaccine shortages this year and the Mollen clinics are starting to offer vaccinations this week. Remember, with this vaccine your immunity will decline over time and therefore it is recommended to repeat the vaccination every year.

Finally, I hear many patients tell me that they had the flu shot years ago and became so ill that they have vowed never to get it again. This is really not true. Our modern vaccines, and particularly the flu shot (not the nasal spray) are manufactured using recombinant DNA technology and contain inactivated virus. They are incapable of causing an actual case of influenza. I have administered hundreds of these shots and have never experienced a patient develop a serious reaction. These vaccines are not only safe and effective, they also save many lives each year.

Next month I'll discuss the CDC recommendations on who should get the flu shot and why. Until then, happy and healthy flying!

Paul Steinberg, M.D.

SVF Sun Valley Fliers

Caps, Hats & Tees Price List 2008

Hanes Beefy T's with Pocket $9.00
Golf Shirts with Pocket & Embroidered Logo $21.00
Flex Fit Caps with embroidered Logo $21.00
Adams Sunblock Safari Hats with SVF embroidered logo $31.00
WinnerMate SVF Windbreakers (special order) $65-75.00 depending on size / style.

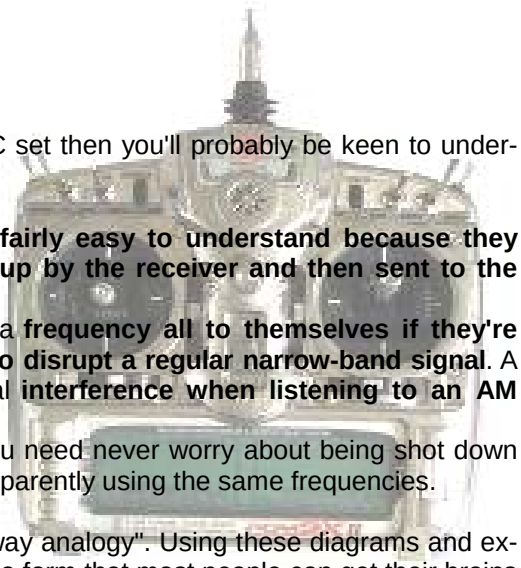
(Prices in photos are up $1.00)

I will bring a selection to every club meeting for purchase so please bring cash or checks. I can be reached at: psteinberg@cox.net or *602-616-0833 if you would like to order any genuine SVF apparel!*

2.4 GHz Radio Control Explained

by Bruce Simpson

RCModelReviews.com



JUST HOW DOES SPREAD SPECTRUM RC REALLY WORK?

If you've got, or you've been thinking of buying, a 2.4GHz spread-spectrum RC set then you'll probably be keen to understand exactly how it works, and hopefully this article will help you do so.

First, a few words about older "narrowband" RC systems...

Traditional narrow-band RC systems on anywhere from 27MHz to 72MHz are **fairly easy to understand because they work** just like your regular AM or FM radio - sending out a signal that is picked **up by the receiver and then sent to the servos.**

Unfortunately, just like regular FM broadcast radio, these RC systems require a **frequency all to themselves if they're going** to avoid interference with each other. What's more, it doesn't take much **to disrupt a regular narrow-band signal**. A noisy thermostat or electric drill can often cause massive amounts of electrical **interference when listening to an AM broadcast** and FM isn't always that much better.

But manufacturers of spread spectrum (SS) radio systems are claiming that you need never worry about being shot down by other fliers and that all 2.4GHz systems can get along in harmony, despite apparently using the same frequencies.

So how can that work?

Well to explain this, I'm going to use a series of illustrations that I call "the freeway analogy". Using these diagrams and explanations, I will do my best to convey the complex world of spread spectrum in a form that most people can get their brains around. Of course in doing this I've had to take a few liberties with the details but these are not important.

Which Flavor of Spread Spectrum?

YES, IT COMES IN DIFFERENT FLAVORS

Before I launch headlong into a detailed explanation, it's worth pointing out that there is more than one flavour of spread-spectrum.

The first and most common type is what we call **Direct Sequence Spread Spectrum** (DSSS). This involves the transmitter and receiver staying within a fixed part of the 2.4GHz spectrum.

The second type is called **Frequency Hopping Spread Spectrum** (FHSS) and involves having the transmitter and receiver constantly changing their operating frequency within the alowed limits of the 2.4GHz band.

At the present time, only Futaba and Airtronics use FHSS, the remainder using DSSS.

And right now I can year you asking *"which flavor is best?"*... to which I have to say... neither and both.

Or, in other words, neither solution is best all the time, there are benefits and drawbacks to both, as you will see. However, it's safe to say that in theory, the Futaba FASST system does give the best of both worlds because it is not only FHSS but also DSSS.

But first, let's see how a traditional "narrowband" FM RC set works on frequencies such as 27, 35, 36, 40, 41 or 72MHz.

How do traditional RC systems work?

NARROWBAND FM/PCM RADIO CONTROL

Ever since the first radio control systems for models were built over half a century ago, the technology has been "narrowband".

Narrowband refers to the amount of space that signal takes on the spectrum of available frequencies.

Today's FM/PCM radio control systems operate on a tiny sliver of space on relatively low frequencies (27, 35, 36, 40, 41 or 72Mhz).

This tiny allocation of bandwidth for each RC channel creates a number can be likened to riding a bicycle down a narrow trail and the same problems apply:

Firstly, you can't ride very quickly simply because it's such a squeeze to get past the bushes and fences either side of your trail. In radio terms this means you can't send the control information between transmitter and receiver very quickly.

Secondly, if you run into another cyclist on that narrow track, chances are that you'll both fall off and get hurt. In radio terms it means that almost any other signal on the narrowband frequency you're using will result in interference (glitches or lock-out).

Clearly this isn't the best situation for controling a potentially expensive and sometimes dangerous radio controlled model but, with careful channel management, it has served us well for decades.

Distributed Spread Spectrum (DSS)

SPREAD SPECTRUM EXPLAINED

SVF Editor note: This article was taken from Bruce website (RCModelReviews.com) with his permission. He has an interesting website, do check it out. Bob Purdy

continue to page 2

Distributed Spread Spectrum radio can be likened to a multi-lane freeway where your car seems to appear at random in different lanes. In fact, it appears and disappears so quickly that it almost appears to exist in all lanes at the same time.
In radio terms, the transmitter uses a wide spread of frequencies to send data to the receiver, rather than the very narrow band of frequencies used by the older narrowband RC sets we've seen up until now.
So what's the point in spreading yourself so thinly?
Well if you stop and think about it, if your "DSS" car encounters another on the freeway, it won't have very much effect. Your own vehicle won't be blocked because it will simply continue past when it suddenly appears in another lane which isn't blocked.
In radio terms, a single (or even quite a few) other transmissions won't have much effect on your RC system because they'll only block a tiny amount of the signal being sent. In fact, unless the freeway is almost completely blocked, at least some of the signal from your transmitter will get through to deliver your control inputs to the receiver.
Even better, if another DSS transmitter (or even several more) is operating on the same channel, it is also unlikely to interfere because it'll be jumping lanes in a different sequence and at a different rate.
So in a DSSS system, the last SS stands for Spread Spectrum and the first two letters stand for Direct Sequence. This relates to the order and frequency at which your vehicle moves between the lanes

How DSSS Handles Interference

THE BATTLEFIELD ANALOGY

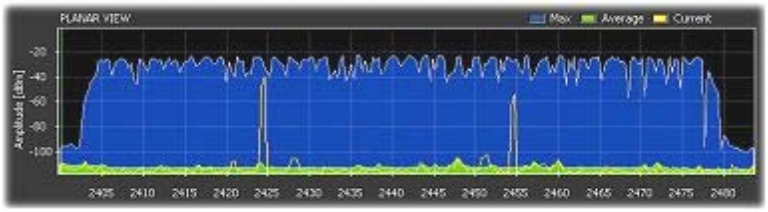
Another way to help you understand how a DSSS system avoids being "shot down" by interference is the battle-field analogy.
When an army goes into the modern battlefield, they're usually ordered to "spread out" -- and that's exactly what DSSS does, it spreads your transmitter's signal out over a much wider area than is the case with FM/PCM gear.
Just as on the battlefield, it's much harder to kill an enemy when they're spread over a wide front, so it is with a DSSS radio signal.
The chances of any single rifle-shot actually hitting a soldier on the battlefield is significantly reduced when they're widely spaced across the whole front. With DSSS, your radio signal is similarly spread very thinly across the radio spectrum and thus virtually immune to enemy fire, unless that fire is very intense.
By comparison, a closely grouped army of men can be decimated in moments by a single mortar shell or burst of machine-gun fire. That would be the equivalent of your old RC gear being shot down by interference or another transmitter on the same frequency being turned on while you're flying.
So what if someone turns on another DSSS system that uses the same channel you're already on?
Well because DSSS spreads your troops so thinly across the battlefield, there's plenty of room for another platoon from a totally different army to run between the ranks without the two colliding. This is why multiple DSSS systems can co-exist on the same channel without interfering.

Which radios use DSSS

Of the currently available 2.4GHz spread spectrum systems, all use some form of DSSS but others, such as the Spektrum/JR and Futaba FASST systems use other techniques to offer even greater protection from interference.
Several other systems that have gained a small following are those from XPS, Assan and iMax. These also use DSSS but appear to have no effective way of coping with the kind of crippling interference that might leave the other systems unaffected.

How do FHSS RC systems work?

FREQUENCY HOPPING SPREAD SPECTRUM



Frequency Hopping Spread Spectrum radio systems work by constantly hopping between a number of frequencies.
If you've just read the description of how DSSS systems work you're probably wondering "what's the difference?"
Well, whereas the DSSS system is like a car that repeatedly appears and disappears on various lanes of a freeway, at such a rate that it almost appears to be everywhere at once, a FHSS system effectively sees your car not simply jumping a small distance to a nearby lane, but all the way to a completely new freeway.
In radio terms, this means that the frequency sent by the transmitter doesn't just jump around within the chosen operating channel but actually jumps between a whole range of different channels.
It can be seen that, at least in theory, the FHSS system should be even more immune to the type of congestion that would cause problems with a DSSS system. That's because although nothing may get through while it was using a very congested freeway, the hop to a less congested one would allow the normal transfer of data to resume. ***Continue on page 3***

Under normal circumstances a FHSS system hops between a fixed number of channels in a repeating random sequence. When multiple FHSS systems are used together, the random anture of the hopping sequence means it's very unlikely you'll find multiple sets trying to use the same channel (freeway) at the same time

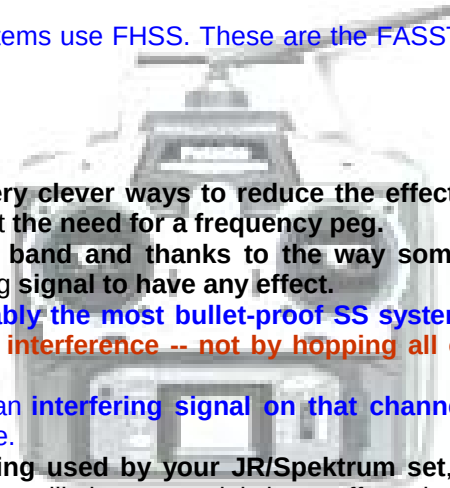
How FHSSS Handles Interference

THE BATTLEFIELD ANALOGY

In a pure FHSS system, the troops are all closely grouped together as was the case with an old narrowband system but, because they're constantly jumping from battle-field to battle-field, the effect of enemy fire in any particular field is minimal.
Imagine that the whole army is teleported onto a battle-field and then, before you realize it, telported away to another. Clearly this makes a FHSS system a hard target for interference to hit.
However, the FHSS systems we're seeing used in radio control systems right now are a blend of both DSSS and FHSS. This means that not only is the signal spread across a whole channel but it also hops continuously from one channel to another.
This means that an FHSS system is an incredibly difficult target for any interference to hit -- and when you're flying RC models, that's a very good thing.

Which radios use FHSS

Right now, only two readily available 2.4GHz spread spectrum radio control systems use FHSS. These are the FASST radios from Futaba and the Airtronics offerings.



Belt and braces

EVEN MORE PROTECTION AGAINST INTERFERENCE

By now you've probably realized that spread spectrum technology offers some **very clever ways to reduce the effects** of interference and allow many different radio sets to operate simultaneously without **the need for a frequency peg.**
Thanks to the way these systems spread their signals thinly across the 2.4GHz **band and thanks to the way some of** them hop around so as to remain a moving target, it takes a very strong interfering **signal to have any effect.**
I've already explained that, at least in theory, the Futaba FASST system **is probably the most bullet-proof SS system** on the market, but the JR/Spectrum offering has also made it self doubly resistant to **interference -- not by hopping all over** the place but by adding a redundant channel.
As previously outlined, a DSSS system *can* be knocked out if the strength of an **interfering signal on that channel is** strong enough -- so JR/Spektrum reduces the risks by using two channels at once.
This means that even if a very strong interfering signal appears on a channel **being used by your JR/Spektrum set**, you won't lose control, and that's because the second channel on its different frequency will almost certainly be unaffected.
Reputable manufacturers realize that their systems may be in control of very large, expensive and potentially dangerous models so they try to allow for as many contingencies as possible. Futaba uses constant frequency hopping, JR/Spektrum uses a backup channel (a tactic known as redundancy).

What is diversity?

Another important aspect of 2.4GHz spread spectrum radio control systems is something called diversity.
Diversity is required because the radio signals at 2.4GHz behave quite differently to those we're used to on lower frequencies such as 72MHz.
Whereas the old narrowband frequencies will pass right through most objects such as houses, trees, fences, and model airplanes, 2.4GHz behaves much more like light, being either absorbed or reflected by many parts of the environment.
This absorbing and reflecting of the 2.4GHz signal results in occasions when the receiver antenna by be shielded by some part of the model, or may even be subject to the kind of ghosting that used to be seen on old TV sets when the signal was reflected by trees or buildin gs (called multi-pathing).
The effects of shielding and/or multipathing mean that it's quite possible the receiver will be unable to hear the transmitter clearly enough to extract the data being sent.
The simplest (and best) solution to this problem is to use more than one antenna and/or more than one receiver in your model. By mounting these antennas or receivers in different places (even just an inch or two appart), one can take over if the other is unable to get a clear signal.
The JR/Spectrum system allows for multiple receivers, up to four or more and some of these receivers have mutliple antennas. This is surely the ultimate diversity setup. On very large models, you can be absolutely sure that there's no chance of shielding or multi-pathing by simply increasing the number and distribution of receivers within the plane.
The Futaba FASST system uses two antennas mounted on the one receiver. In theory this isn't as good as the JR/Spektrum option but in practice it seems to work perfectly adequately.

continue on page 4

I'm sure the big question most people want to know is "which SS system is best?"

Well the truth is that the big-name sets (**JR/Spektrum** and **Futaba**) are both pretty decent offerings that have a growing record of reliability and performance.

Of course if you ask enough people you're bound to find someone who has had problems with almost any brand of radio, and these new 2.4GHz systems are no better.

It's well worth remembering that we're still dealing with first-generation equipment here so there will inevitably be teething troubles and issues that need to be addressed. Indeed, both **JR/Spektrum** and **Futaba** have already faced some of these problems but things now appear to be quite stable.

I don't think anyone will be disappointed by purchasing either of these big-name brands so the selection criteria will most likely be based on your budget and the type of models you fly.

However, there are alternatives to the "big two" brands, although they remain less proven.

The **XPS** module-based 2.4GHz system is a single-channel non-hopping DSSS system that offers neither antenna nor receiver diversity.

Although many people have reported excellent results with this system, it is worth perusing the various discussion forums around the Web to read about the issues others have had with **XPS**.

Perhaps one of the biggest problems is not so much the technology as the man behind the product and his approach to marketing. Right from the start, the **XPS** system has been grossly over-hyped and under-delivered.

There are a growing number of former fans of the system who now freely air their disappointment, usually after losing models to unexplained lockouts or other failures.

Another second tier offering is the module-based **Assan** 2.4GHz system out of China, which is another DSSS non-hopping system. However, **Assan** do offer receivers with antenna diversity and there have been few reports of problems to date.

Another new entrant to the scene is the **iMax 9X** 2.4GHz RC system out of China.

Unlike **XPS** or **Assan**, the **iMax** system is a complete radio, albeit the transmitter can be used on 35/72MHz or 2.4GHz simply by swapping modules. It is far too soon to establish the robustness, reliability and ultimate perforance of the **iMax** system yet as it has only just started selling. (but look for a review soon on **RCModelReviews.com).**

So which is best?

As I said before, there's no absolute "best" 2.4GHz system because everyone's priorities are different.

If you want a system that offers a wide-range of different receiver sizes and capabilities with maximum diversity on very large models then the JR/Spektrum offering has much to offer.

However, if you're looking for a "technically superior" system, it's hard to go past Futaba's FASST. Unfortunately, at this time there are not a lot of receiver options and Futaba has been very slow on delivery of some options.

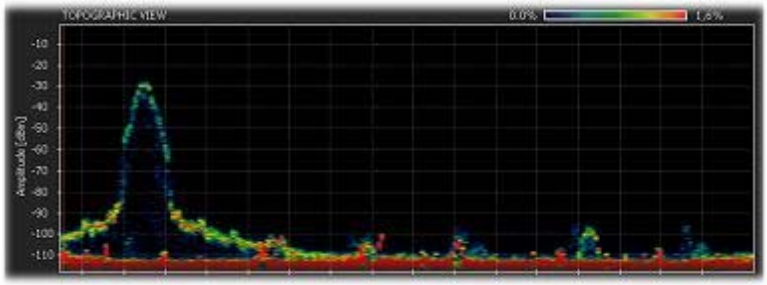
If you're prepared to be an early-adopter then the new wave of low-cost offerings out of China may be worth a try. Check their specifications carefully though, and also keep an eye on the various discussion forums around the web. As first generation products they may have some as-yet undiscovered problems or limitations.

About the only system presently on the market that I would be hesitant to recommend is XPS.

As I said earlier, many people have had no problems with this system and it has worked perfectly for them. However, from a technical perspective, too many of the system's wild claims are unable to be substantiated by the manufacturer and the growing number of dissatisfied customers must be a concern worthy of consideration.

The 2.4GHz Spread Spectrum FAQ

QUESTIONS AND ANSWERS TO THE 2.4GHZ PUZZLE



Do you have a question about Spread Spectrum 2.4GHz radio systems?
If your question isn't already here, use the feedback page to drop me a line and I'll do my best to come up with an answer

continue on page 5

QUESTIONS AND ANSWERS TO THE 2.4GHZ PUZZLE

Do you have a question about Spread Spectrum 2.4GHz radio systems?
If your question isn't already here, use the feedback page to drop me a line and I'll do my best to come up with an answer

Q. Is it true that you can't be shot down on 2.4GHz?
A. It is true that you can't be shot down by another 2.4GHz radio control system but there is still always a chance that other forms of interference can cause you to lose control of your model. The 2.4GHz band is used by a very wide range of other electronic equipment from wireless internet to microwave ovens. There's no guarantee that one of these other devices won't interfere with your RC set.

Q. Are there disadvantages to a module-based 2.4GHz system?
A. There are some disadvantages to using a module based system over a totally 2.4Ghz one. The newer non-module-based 2.4GHz systems often offer higher resolution and faster response. The JR native 2.4GHz systems also offer a unique feature (Model Match) that elminates the risk of flying with the wrong model memory selected in your transmitter.

Q. Can I use my existing servos with a new 2.4GHz system?
A. Yes, all of the currently available 2.4GHz systems are compatible with conventional (analog or digital) servos. There is talk of a new generation of totally digital servos becoming available specifically for advanced SS RC gear but nothing has yet been seen. The only exception to this is that some Hitec digital servos may not work reliably (or at all) with some Futaba FASST receivers due a lower than expected voltage on the signal line.

Q. What causes lockouts on 2.4GHz?
A. Spread spectrum radio sets work in a way very similar to PCM ones in the way they respond to strong interference. If you're unlucky enough to experience interference so strong that the link between transmitter and reciever is lost, your receiver will enter "hold/lockout" mode and then go to failsafe mode (if set).
The cause of such a lockout/failsafe can be almost anything including, but not just limited to, interference. In fact, in the case of spread spectrum systems, experience has shown that lockouts are far more likely to be caused by inadequate batteries in the model or bad installation.

Q. Should I switch to 2.4GHz now or wait?
A. this depends very much on your own situation. If you've never had a glitch with your existing narrowband RC system and have no problems with frequency control at your flying field then there's no reason why you should rush out and by a 2.4GHz spread spectrum set. However, if you do live in an area where interference on your existing set is not uncommon, or if there are long queues for frequency pegs then the move might be worthwhile.
If you're just starting out in the hobby and don't yet have any RC gear then it probably makes sense to go straight to 2.4GHz.

Q. Why are good receiver batteries so important on 2.4GHz? A. Inside every spread spectrum receiver are an array of tiny computer chips that must perform millions of complex instructions without mistakes every second. In order to function reliably, these computer chips require a steady stream of electricity. If that steady stream is interrupted, even for a tiny fraction of a second, the computers can crash or stop working briefly.
This means that if your receiver batteries, BEC or regulator aren't up to scratch then you will almost certainly have real problems with your new 2.4GHz radio.

Unless you're flying helicopters with servos that can't handle the extra voltage, it is strongly recommended that you use a 5-cell receiver pack (6V) or even one of the new 2-cell A123 battery packs (6.4V) to further reduce the risk of voltage-related receiver problems.
Many of today's hi-torque servos can draw very high amounts of current and if your battery isn't up to the task, this can cause the voltage they deliver to be drastically reduced. Should that voltage drop below the 4.5V some receivers require to function, a lockout or reboot may result. Remember that when the computer in your 2.4GHz recevier crashes, its' quite likely your plane will also crash. Good batteries of adequate capacity and well-charged are absolutely essential to safe flight.

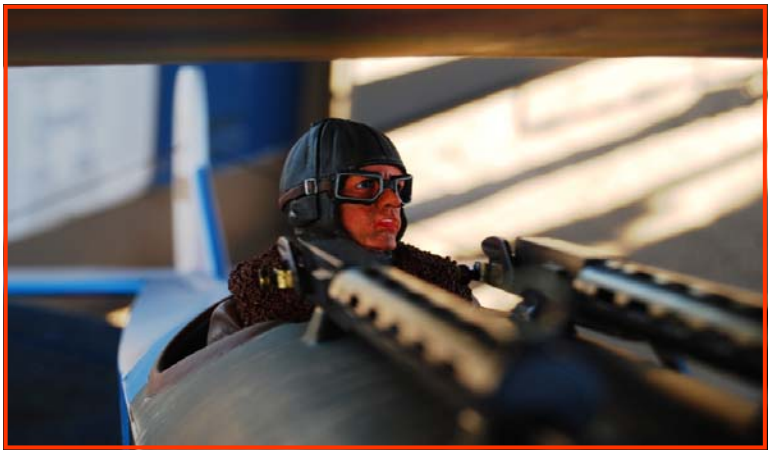
Q. Can I use a 2.4Ghz system in my carbon fiber glider
A. Unfortuately carbon fiber acts as a pretty good shield against 2.4GHz radio transmissions. This means that if you mount a 2.4GHz receiver inside a carbon-fiber fuselage, it probably won't work very well at all. For this reason, many glider fliers (especially DLG fliers) are sticking with narrowband radios where not only are the frequencies less affected by carbon fiber but at least some of the antenna can be routed outside the fuselage.
Some 2.4GHz receivers such as those from Futaba have extended antennas that make it easier to route them through the CF to the outside world. It's still very important to make sure that at least one antenna is visible from every angle.

SVF MEMBERS PAGE

Bob Frey helping Lynn Babcock with his P-61

WS@89" 20lbs 2-OS .91 2 Stroke 13 Servos

CD John Gyer
Electric DR VII



John photos by Jerry Wright

S V F

S V F

Eighth Annual

Electric Turkey Fly-In

November 8, 2008

Hosted by the Sun Valley Fliers

Cave Butte Park, Phoenix AZ

Cave Creek Road to Jomax, Turn West at Traffic Light

$15 Landing Fee

All Proceeds to the Boys and Girls Clubs of Metropolitan Phoenix

All Electric Aircraft Welcome

Open Flying

Phantom Judged Fun Events

Raffle, Trophies, and Prizes

On site Vendors, Lunch

Join us for a relaxed day of fun flying, and sharing information with other Electric Fliers, while helping the Boys and Girls Clubs of Metropolitan Phoenix

AMA Sanction 08-1775 **AMA License Required**

www.sunvalleyfliers.com

For More Information: CD John Geyer – 602-810-1767 or jegeyer@cox.net

SVF MEMBERS PAGE

Wayne Layne

Tony Quist gas power Zero

Do you Remember ?

Building with Balsa wood. Using Ambroid as your main stickum.

Japanese tissue. And don't forget the Dope. Following plans. Yes, Plans! Remember the folded up paper enclosed with your new kit. How many T pins have you dislodge from your building table with sheets of wax paper you borrowed from the kitchen. Anyone remember Frisco racing fuel ? I'll date myself a little -- just the smell brings back memories. Some others: Fox Missile Mist, the purple piss**, Testors and K&B just to name a few.**

Then the hobby was really about building an airplane. You actually cut stuff out and assembled the parts. Most of the time you had to wait till the glue dried (no epoxy or any other CA's to speak of) which left time to review the next step to be completed in your most favorite new flying machine.

I can't even guess how many 4 oz jars of Aero Gloss paint I have used. Balsa…who remembers round edge planking, the main stay of Berkley kits? You would just look at the pile of wood you got in each kit (yes kit) and check the T pins to see if you had enough to tackle the job. I remember building a Ram Rod 250, a free flight. It was huge, 23 inches! Today some wheel parts are larger.

They use to call us Modelers. Interest today seems to be more in turn key flying than in the satisfaction of building. All the ARF's being done really have shortened the assembly time. After all, flying is what most of us really want to do.

Just look at what we have today: jets and gas engines that have almost as much power as my first Triumph Spitfire. Who would believe it?

So what will be next? Ok…sailboats.

Dirt 02 *(Charlie Beverson)*

How're Your NiCads?

By Ted Brindle

The Nicad batteries that we use in our transmitters and aircraft wear out with time. If you have a battery pack that is more than three years old, you should be keeping a close check on it by cycling every month. If it is five years or older, you should replace it and be sure to properly dispose of the old cells. So, how do we tell the age of our batteries?

Most Futaba battery packs and individual Sanyo battery cells (which most OEM radio manufacturers use) have a two-letter date code stamped somewhere on the pack or cell. The first letter of the code is the year of manufacture and the second letter is the month of manufacture. 1996=A, 1997=B, 1998=C, etc. January=A, February=B, March=C, etc.

If you have a battery or pack with a date code of IB, it was manufactured in February of 2004. Probably still okay but keep a close check on it. The pack in my 8UAF transmitter was ZF, or June of 1995 so I replaced it. I found one pack with a date code of WC which translates to 1992; replaced that one without question. ✈

From the Suffolk Aeromodelers, Long Island, New York

SVF MEETING OCTOBER 1, 2008, 7:30 P.M.
@ Deer Valley Airport Restaurant

Multiblade Propellers

Originally from Hooked-on-rc-airplanes.com

Three-bladed model airplane propellers are less efficient than two-bladed propellers. In fact, the more blades that are added, the less efficient the propeller becomes. The only advantage of a multiblade propeller is a smaller diameter.

Multiblade propellers are used with full-scale airplanes when ground clearance is an issue. World War II fighter planes are a good example. For this reason, many pilots use multiblade propellers on their scale model airplanes to make it look more like the full-scale airplane.

Twin-engine airplanes often use multiblade propellers because the smaller diameter is needed for the propeller to clear the fuselage. This is true of full-scale airplanes and often the case with twin-engine model airplanes as well.

Evolution Engines offers a three-blade propeller to be used with a trainer. The inefficiency of the propeller "tames" the engine a bit for the beginner by allowing the airplane to fly slower while maintaining the thrust needed for easy takeoffs and climbs. The extra blade also helps to slow the airplane down when landing. After the beginner becomes comfortable flying the airplane, he or she can tap into the rest of the engine's power by changing to a more efficient two-bladed propeller.

From the Suffolk Aeromodelers, Long Island, New York

Covering Idea

By Vic Welland

Have you ever wanted a graphic or picture for your model but didn't want to spend a ton of money to have a custom sticker made? This technique, developed by Brian Ireland from the Frontier Fun Flyers of Alaska, allows you to have a detailed image made of several pieces, keeping them in their proper location to each other, while cutting them out and transferring them to your model.

Using your covering of choice, a piece of glass, Windex, razor or X-Acto blades, Glad Press'n Seal Wrap, and your normal covering tools, you can have the image you want with a steady hand and some time.

Let's begin by printing your image in the size you want on a regular piece of printer/copier paper. This is assuming your image will fit on a standard sheet of paper, of course. I recommend you start simple the first time out.

Spray some Windex onto the surface of the glass, be sure the glass is free of dust and debris to keep things clean and bump free. Remove the backing from your covering and lay it down on top of the Windex and glass. Squeegee the excess Windex out so you have a good bump/bubble free piece of covering to work on. Let things dry for several hours.

Tape the piece of paper with your image directly over the covering and glass while being careful to not move things around and wrinkle the covering.

Here is where a steady hand and time come in. Carefully cut out the image with your razor or X-Acto blade. It's a bit easier if you start at the top and work down while working on the small fiddly bits that need to be removed first.

Once you are satisfied that you have the image cut out you should be able to see what your piece(s) will look like as they are located on the glass plate.

Here is the cool part. Using a piece of Press'n Seal, cover your image completely and press it down with some form of straight edge (credit cards work great). Gently peel the whole thing off the glass. The Press'n Seal will hold your covering in location and allow you to move it to your model.

Again apply Windex to your clean, dust-free model followed by placing your Press'n Seal/image assembly in the desired location. Squeegee the excess Windex and bubbles out as you did when you put the covering on the glass sheet. Allow to dry for several hours.

After a reasonable period of time (overnight is recommended) using your heat gun on low heat, gently play the heat onto the Press'n Seal to get it to release from your model's covering and the covering your image is made of. You should now have your image securely located on your model and looking great! It's recommended that you go back over the edges with some trim solvent or acetone to ensure a good bond.

This idea has been condensed from several posts in RC Universe by Vic W. The thread can be found at http://www.rcuniverse.com/forum/m_6686800/anchors_6867168/mpage_2/anchor/tm.htm#6867168.

Watch the YouTube tutorial by Brian Ireland at http://youtube.com/watch?v=8NhLZ-4V1pM. Q

From the Caldwell Aeromodelers, Hildebran, North Carolina

1st Annual SVF Fall Pattern Classic

November 15th-16th, 2008 @ Sun Valley Fliers Field Phoenix, AZ

- All AMA and FAI classes with awards for top 3 in each class
- Special 2-day Introduction to pattern class for sport pilots interested in learning to fly pattern. Each day a separate event with awards for top 3 each day. Experienced pilots will be on hand to help anyone that would like to participate.
- Sportsman and introductory pilots may fly any AMA legal airplane
- BBQ saturday night
- Field open for flying everyday sunrise to sunset
- Pilots meeting at 8:00am
- Historical weather averages for that weekend in Phoenix are 50° lows and 76° highs

Contest Director
Robert Beaubien
rob@koolsoft.com
(623)486-9987
Assistant CD
Troy Newman
troy@troynewman.net
(720)939-0550

Entry Fees

$40 - Intermediate - FAI Pilots
$25 - Sportsman Pilots
$10 - Introductory Pilots

Pre registration required **{link will be up shortly}**

Here is the routine and rules for the Introductory to Pattern class for publication in the Slow Roll:
SVF Club Class Maneuvers

1. **Straight Flight Out (Upwind)**
2. **Procedure Turn**
3. **Straight Flight Back (Downwind)**
4. **1 Loop (Upwind)**
5. **1 Roll (Downwind)**
6. **Horizontal Figure 8 (Upwind)**
7. **360° Aerobatic Turn (Downwind)**
8. **Stall Turn (Upwind)**
9. **Immelmann Turn (Upwind)**

Sun Valley Fliers field is at

N. Cave Creek Rd & E. Jomax Rd,
Phoenix, AZ 85024

View Larger Map

Rules
1. All maneuvers to be performed centered on the judges.
2. The maneuver order can't be changed, but pilots can make extra passes to get set up for the maneuver. Judging will begin when pilot indicates he/she is ready to begin.
3. Maneuvers will be judged on roundness of circles, straightness of lines, consistent altitude on horizontal maneuvers, same entry/exit altitude of loop/stall turn/roll. Takeoffs and landings will not be judged.
4. Each judge will score from zero to 10 for each maneuver and the lowest scored maneuver will dropped for each flight. Total score will be the best 8 maneuvers per flight. 2 rounds each day. Each day is a separate contest. Top 3 pilots will be awarded each day.

The Arizona Model Aviators Present

WINGS OVER ARIZONA II

- ***An IMAA sanctioned GIANT SCALE FLY-IN***

  All aircraft must comply to IMAA Guidelines.
  80" Monoplane, 60" Bi-Plane or True ¼ scale. Jets must be 140" combined wingspan + length.
  Proof of AMA and IMAA membership will be required.
  For Turbines, a waiver will be required.
  IMAA Memberships will be available at the event.

- ***Date:*** ***Saturday & Sunday, December 6th & 7th, 2008***

  Friday will be an informal get together day at the field to fly if you want.

- ***Location:***

  Superstition Airpark, Mesa AZ

Dear Fellow Modeler:

My name is Paul Goldsmith and I am the contest director for "Wings Over Arizona II" for the Arizona Model Aviators. This event will be held on December 6th and 7th of 2008 at our field in Mesa AZ. I have enclosed a flyer with a map on the back for your convenience. We are trying to raise the interest level for Giant Scale Aircraft in this area of the state of Arizona. One of the easiest ways for us to do this is to hold events in our area for Giant Scale Models. To accomplish this we have become a Chartered IMAA club. Membership in the IMAA is a sure way to meet and mingle with other flyers who are also interested in large scale models. The membership fee of only $25.00 includes a subscription to HighFlight, one of the finest magazines I have ever received. It is devoted to Giant scale Models and has some of the best articles in this sector of the hobby. Starting with the winter issue, the magazine will be 100% color. With this in mind I am encouraging you to join the IMAA and join us at this event. Memberships will be available at the event. We are looking for some people who want to have a good time with others having the same interests. Please contact me with any questions at 602-323-7753 or 480-588-6941. You can also e-mail me at winger@aol.com.

Respectfully yours, Paul Goldsmith

- ***Food will be available Saturday and Sunday.***

- ***Plaques will be awarded for nine different catagories.***

- ***For More Info:***

  Primary Contact: Paul Goldsmith 602-323-7753, wiinger@aol.com
  Secondary Contact: Ken Kear -- kearskustomhobby@yahoo.com
  Arizona Model Aviators web site www.azmodelaviators.com

SVF Editor; The full Ad and Map will be in November Slow Roll

YOUR AD HERE

Gabby's Twenty - Eighth Troy White

Next Month Issue

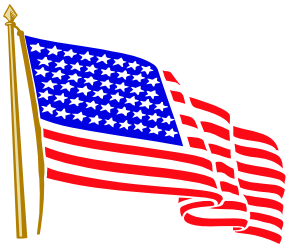
November we hope to have the OEAF photos. The TURKEY ELECTRIC is coming and the PATTERN Contest also in NOV. The SVF got some cool stuff for sale to beat the heat. See Doc Paul. Would you like to be notified when the *SLOW ROLL* new issue is available? Give Gene your e-mail address. AZ49ER@COX.NET

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

This Month Issue

Big issue this month with photos and knowing what 2.4GHZ is all about. The jet boys did good in CA. Scalemaster guys did well also. Of course the PAVING was excellent! Our thanks to the SVF members for those photos, articles.

*Remember to **ZOOM** the **PDF** page to see more.*



THE SLOW ROLL

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Website Supervisor

Please check your Membership list for Phone numbers.

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