THE SLOW ROLL

CHARTERED #921
Since DEC. 1974

Editor—Bob Purdy
rcbobsvf@aol.com

OCTOBER 2009

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 Joe Balabon…. Prez report…Minutes.. October B'Days & Treasurer Report …+SVF Members photos…3-D article.....…Building better….Lots of flyers & MORE...*ENJOY*!**

Dave Linne Pitts

THE PRESIDENTS CHANNEL

FRANK MOSKOWITZ

OCTOBER SLOW ROLL PRESIDENTS LETTER

Welcome to the October Slow Roll.

I will get right to the updates: The **Sun Valley Fliers Jet Rally is October 16th -18th** which a Friday through Sunday. We need volunteers to help with the gate, trash, directing cars as to where to park and just general workers. The busiest days will be Friday and Saturday. Sunday should be tapering down by afternoon. At our last general club meeting the following members volunteered to help; Dave Linne, Ron Thomas, Bruce Bretschneider, Howard Kennedy, Lucky Mitchell, Jerry Wright, Cole Cunningham and Jay Steward. It's a lot of work for just those 8 members so we could use more volunteers. If you think you can offer up some of your time, please let any board member know. Or email us with your availability. All officers' emails are on our website. **www.sunvalleyfliers.com**

Next item is that we have an opening for a Board of Directors position. This is a great opportunity to help shape the future of SVF. The individuals who are selected to be on the board of directors of SVF have overall responsibility for the activities of our club. A good candidate should possess the skills necessary to continue making our club the best there is for our members. Questions you might ask are: "Are we working the hardest on the most important tasks?" "Could we do things better and more efficiently?" "Where are we in meeting our long-range goals?" If you think you possess the qualities we seek, please contact myself or any board member with your intentions.

Lastly I am sure by now most of you are aware we own a generator. It is located in the new shed. We are presently wiring the Ramada to have a duplex receptacle on every other bench and in the kitchen. Eventually lighting will be installed at a later time. **We need some help in completing the job before the Jet Rally. Saturday October 3rd and the following Saturday October 10th we will be installing the final runs of conduit to the benches. If you care to help we would certainly appreciate it. Screwing the boxes to the poles, helping with the wire pulls and miscellaneous chores. Maybe an hour or two each Saturday. Let me know of your availability. And thanks in advance.**

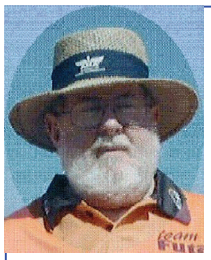
(If you any have generator knowledge let me know)

I hope to see some more members at our next club meeting **Wednesday October 7th 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.

Frank Moskowitz

President

SVF MEETING OCTOBER 7, 2009 @ 7:30 P.M.



Sun Valley Fliers Club Meeting Minutes
Date, September 2, 2009

The meeting was called to order at 7:32 pm by President Frank Moskowitz.
Guests: Andy Darling & Dale Bolin are guests, welcome.
New Members: none
New Solo Pilot: Darren Jeffries soloed with the help of Mark Bernier. Congratulation to all for their hard work.
Secretary's Report: Rusty Fried. Voted and approved as published in the Slow Roll.
Treasurer's Report: Gene Peterson. Voted and approved as explained.
Safety Officer Report: Joe Balabon. We need to remind all pilots not to fly east of the perimeter road. We are having a problem of guys leaving the gate open. A guy will ask his buddy to leave the gate open and he will be right behind him, well he forgets and 30 minutes later and a none member comes in or heads out through the desert. No more, you must lock the gate!
People who smoke are not policing their butts. Please use the butt cans provided or just don't smoke at the field.

Old Business:

1. The application for the IMAA is ready to be sent. This will make the SVF an IMAA chartered club.
2. Charlie Beverson received a round of applause for his great re carpeting efforts on the tables. Please don't drip glow fuel or kerosene on the newly re carpeted tables.
3. The dates for the Jet Rally is October 16, 17, 18.
   The Jet Rally need help with parking and general help:
   Guys that volunteered, Dave Linne, Ron Thomas, Bruce Bretschneider, Howard Kennedy Lucky Mitchell, Jerry Wright, Cole Cunningham, Jay Steward
   The web site for the Jet rally is now up and running.
   Sunvalleyjets.com
   The food will be furnished by SVF **Craig Guest.**
4. **The Electric Fun Fly dates have been moved from November 7 to November 14. John Geyer is the CD.**
5. The 1/8 AF event had 27 pilots show and become more educated about scale. This event was big success congratulation to all who helped put it on.

New Business:

1. The chain gang has not set a date for field clean up.
2. The community affairs Dept John Geyer & Howard Kennedy have been contacted by the Boys & Girls Club, they want to do more events with the Sun Valley Fliers. As well as the Cub Scouts want to do another demonstration with the SVF.
3. The float fly dept as of this meeting has nothing going on.

Door Prize Winners: Rusty Fried - knifes, Mark Bernier - fuel, Jay Steward - fuel, Keith - Fuel, Jerry Wright - Torch, Tony Quist - JB Weld, Aaron Moskowitz - JB Weld, Mike Vivian - brushes, Joe Balabon - Flash light. Ron Thomas - heat shrink, Daren Jeffries - Allen wrenches, Ronald Long - fuel, Andy Darling - Brushes
50/50 Drawing Winner: Lucky Mitchell won $40.00.
Show & Tell: Bernie Frank of Franks Hobby House brought in a new Blade heli.
Meeting adjourned at: 8:11pm.

Rusty Fried, Secretary

$ TREASURERS REPORT $ with *Gene Peterson*

TREASURERS REPORT October 2009

It's That Time……..watch your mailbox for the Annual Dues letter. Should be arriving next week. Please check for any changes in any information, like phone numbers, email addresses and Birthdays. (How you gonna get on the BD list if we don't have the date???). *Remember, this year we're changing the gate code on Jan 1 and if your not paid by late December, you are not going to know the new code.*

Due to lack of need for such information as channel numbers, we are not keeping that information in our data base any more.

***But Cell Phone and Email* are of high importance for communications, so please keep this info updated for your club. We only send out an email a month, or maybe two, but generally necessary information, like "field closed" for some reason or "meeting change" , etc.**

Rates are the same, $30 for Seniors and $50 for regular. Plus if you can, make a donation to the Field Maintenance Fund.
Thanks and see you at the field.

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
Michael Curry	Regular	10/01/1981
Craig Guest	Regular	10/01/1966
Dean Brox	Regular	10/02/1973
Brian Clermont	Regular	10/02/1962
Warren Folkerts	Regular	10/03/1956
Cecil Walters	Lifetime	10/03/1940
Joseph Mallard	Regular	10/04/1958
George Kroeger	Regular	10/04/1971
Bruce Bretschneider	Senior	10/05/1940
Richard Mesh	Senior	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
John Wolcott	Regular	10/20/1972
Chris Grier	Regular	10/22/1954
Ken Rhoads	Regular	10/22/1950
Scott Stemen	Regular	10/26/1960
John Mangino Sr.	Senior	10/27/1942
Gary Overby	Senior	10/28/1941
Keith Hoffman	Regular	10/28/1956
Neil Wallis	Regular	10/29/1969
Paulo DaCosta Mello	Regular	10/29/1971
Howard Buxton	Senior	10/31/1937

SVF is IMAA Chapter 782

Sun Valley Fliers is now an official Chapter of the IMAA. **Our Chapter number is #782**. Our core membership in this organization will grow as other member of SVF will join and support this organization and it's activities. Several of our members have already committed to join the IMAA, and as our numbers grow, we will possibly have a fly in at Cave Buttes and of course support the doings of this fine organization. **If you decide to join up, please mention your part of Chapter #782.**

Many of the SVF members are already building and flying models over 80" and addressing the needs with regards to flying larger aircraft is something that should be taken into consideration by all members and the board. Being part of this organization should help address some of these items, whether concerns, or problems, or just promotion of the flying of larger aircraft.

Thanks for your interest and support.

Regards,
Gene Peterson
SVF Club Treasurer

SVF MEMBERS PAGE

Photos by SVF Members

FALL ELECTRIC AIRCRAFT RENDEZVOUS

Presented by:

KNIGHT FLYERS and ARCS

WHEN:

OCTOBER 2, 3 & 4, 2009

WHERE:

SURPRISE, ARIZONA
ARCS - MUSTANG FIELD

WHAT:

ELECTRIC AIRCRAFT ONLY

COST:

Fee is $15/day or $25 for three days if you Pre-Register before September 20, 2009. Add $5 after September 20.
Current AMA Required!
Pilot Raffle – You signup to fly and you are in the raffle!

Night Flying – Friday and Saturday night! Bring your night fly gear!

The Fall Electric Aircraft Rendezvous is co-hosted by the Knight Flyers and the ARCS. The event is held at the ARCS Mustang Field located in Surprise, Arizona at t he base of the White Tank Mountains.

Directions: SR303 to Greenway Road. West on Greenway Ro ad for 2.3 miles to a gate. Once thru the gate continue straight for 0.5 miles then turn left and go thr u the blue gate. If you have been to the ARCS field in the past, please note that the access from Bell Road i n CLOSED.

Camping (primitive) available on site – no hookups. Nearest hotels: Holiday Inn Express 16540 N. Bullard Avenue, Surprise - (623) 975-5540 or Hampton Inn 14783 West Grand Avenue Surprise (623) 537-9122

Visit www.knightflyersaz.com , http://www.rcgroups.com or email: knightsrc@cox.net for additional information.

FEAR 2009 - PILOT REGISTRATION FORM

Pre-registration $15 for one day or $25 for weekend. Add $5 after Sept 15.
Make check or money order out to **ARCS** and mail to:
Knight Flyers, PO Box 5090, Peoria, AZ 85385

Name: _____ Camping Onsite? Y N

Address: _____

City: _____ State: _____ Zip: _____

AMA#: _____ # of Models: _____ Chan: _____
Email: _____

Proof of AMA membership is **required** _____ at the event in order to be able to fly. Please obser ve AMA, ARCS field and event rules. We are looking forward to seeing eve ryone at the event.

Getting the Harrier Down: a building-block approach *Part 2 of 5*

By Jeremy Chin

If you have followed along with the previous article, you now have a simulator to learn on as well as the right kind of airplane to learn with. This is a point at which many people just begin banging the sticks around and thrashing the airframe around the field. Not only does this not necessarily turn into the safest situation, but it does not often yield success.

To learn to 3-D well, you need to learn with a building-block approach that builds a good foundation of basic 3-D maneuvers and progresses from there. This progression will use much of the basic aerobatic knowledge you have previously learned to control the airplane in all attitudes and situations.

While most people think the core maneuver to flying 3-D is the hover, that is unfortunately incorrect. The most basic and fundamental maneuver for learning 3-D is the Harrier. The Harrier is a part of a majority of 3-D maneuvers and skills learned during training to help build rudder-control skills necessary for more complex maneuvers.

To learn to Harrier correctly, we are going to use another simple maneuver called an elevator. Learning to Harrier this way initially allows this first maneuver to be flown at a higher altitude and with an easy escape route.

Start by climbing to an altitude of “five mistakes high.” Level the airplane at center field with the nose into the wind and cut the throttle to idle. When the airplane has slowed significantly, hold full-up elevator and allow the airplane to fall. If your airplane is set up correctly with an appropriate center of gravity and control throws, it should descend slightly nose down or level. An idle set too high will cause the airplane to descend nose high.

As the airplane descends, use the ailerons to hold the wings level. During the descent, the wings may rock back and forth. Careful correction with the ailerons will help correct this problem with most good designs.

When the airplane has reached an altitude of one mistake high, decrease the pressure on the elevator and increase the throttle to fly out level. You have just completed an Elevator. Congratulations! Continue practicing this maneuver until you are comfortable with the airplane descending in this manner.

Next up, prepare to fly an Elevator just as you did before, however for this round of exercises, you should begin to use the rudder to steer the airplane as it descends. Remember to use the ailerons to keep the wings level during the descent. Try descending while steering the airplane through a gentle circling descent and exit as before. Continue flying this exercise until you are comfortable using the rudder to steer. This exercise may feel odd to many sport pilots who are not used to using the rudder on a regular basis.

In the next phase, we will begin the Elevator just as before and use the rudder and ailerons. As the airplane reaches the midway point of its descent, begin to increase the throttle until the nose rises slightly. The airplane will also move forward more than in previous exercises and its rate of descent will slow. Do this repeatedly until you feel comfortable increasing the throttle and maintaining control of the airplane.

Once you are comfortable descending in this increased throttle state, allow the airplane to descend to one to two mistakes high and increase the throttle more while easing off the elevator back-pressure. Your goal now is to find a point of equilibrium where the airplane maintains a nose-up attitude of approximately 30° to 45° while slowing the descent to no altitude change.

When you can complete this last exercise, you have successfully flown a Harrier. You can successfully control the heading of the airplane with the rudder and its attitude and rate of descent with a combination of elevator and throttle control. It’s now time to take your efforts to the next level.

Once you feel comfortable finding that balance between elevator back pressure and throttle input, you need to take the next big step.

In the next phase of this exercise, you are going to fly at a very low level. This is a point at which many students get very uncomfortable. They reason that, since they are closer to the ground, they are more likely to hit the ground. That is not an unreasonable thought; however it fails to take all the factors into account.

Learning to fly 3-D, especially learning to Harrier, at a very low level is absolutely the best place to perfect your Harrier. Optimally, you'll fly with your tail one to two feet off the ground.

By learning to Harrier at a low level, you:

Fly at an altitude and proximity to yourself that allows you to see every movement of the airplane no matter how small, and react to it promptly to keep the airplane flying the way you want it.

Keep the airplane low so that in the event it does get into an "out-of-shape" attitude, it does not have enough time or altitude to build up momentum that will cause significant crash damage.

Impress your friends!

Start this phase by flying low, level, straight-line runs down the runway into the wind. Remember to be courteous to your fellow fliers and yield the runway to those who need it. Pilots taking off or landing always have the right of way. If you get uncomfortable with the airplane at this altitude because of a gust of wind or other factor, use the ailerons to level the wings, cut the throttle back somewhat and let the airplane drop to its landing gear.

As you get more and more comfortable flying your Harrier down the runway, begin to add turns into your exercise. Start with circles one direction, then the next. When you feel comfortable flying circles in a Harrier, modify your exercise to include figure-eights over the runway.

These simple exercises are a great way to build, refine, and improve your fundamental 3-D skills.

You now have a great foundation to begin building more 3-D maneuvers into your repertoire, so what is next? Before moving to an entirely different skill, you need to go back to the beginning of this Harrier lesson, but progress through it inverted. A successful inverted Harrier is another important building block of learning to 3-D.

As you move through the inverted version of the Harrier lesson, remember that your rudder and elevator require inputs opposite of those you use in an upright Harrier. Most people find it extremely helpful to use their simulator at a slower time rate to build this skill before moving to the real world.

Becoming proficient at flying your airplane in a Harrier is one of the most important building blocks or fundamentals of becoming a great 3-D pilot. Don't be afraid to take your time moving through these exercises. Some pilots will progress through the Harrier lesson in a weekend. It may take others a month. You should also not be afraid to break this lesson out again when you have progressed past it.

From the Mid Atlantic Radio Kontrol Society, Snow Hill, Maryland

SVF Ron Petterec (Snowbird) sent photos on their new field in the Forest Preserve in Illinois. It's 30X167' now and in use. The Forest Preserve will add 267 feet at a later date.

SVF MEMBERS PAGE

Photos by SVF Members

It's a Safety issue.

Some of our flyers seem to have forgotten the safety rules at SVF.
This includes the Old timers, 3D, pattern, jet, heli pilots and foamy flyers. **One** is the requirement for a **Spotter**, whether one is required, and just how many can be around the pilot who is in command. **It's ONE**, **a pilot and ONE spotter**, **and** they should be standing on the concrete pads. **NOT ON the BLACK Asphalt!** The rest of their support group has to be behind the chain link barrier on better yet, seated in the shade.

If one is flying alone with no other aircraft, fly all you want just be safe and be aware of your surroundings .....

The other issue is the runway dead lines. For those who fly from the black top it's the **Center line** and one should not be south of it. In the Heli area, no further North than the beginning of the blacktop of the fixed wing runway (WEST End). 3D's try and not to hover in front of another flight station, especially when some one is flying from it. Foamy flyers if you are flying from the blacktop stay in that area, if from the heli area stay there. Don't seek out targets of opportunity even if temped.

BE Safe and enjoy the Hobby/Sport

Safety Coordinator

Joe Balabon

ON THE SAFE SIDE The Attitude of Gratitude

By Don Nix

Although there are regrettably a few among us who seem to occasionally think otherwise, flying model airplanes is a privilege, not one of the "inalienable rights" spoken of so eloquently in the U.S. Declaration of Independence.

And what a wonderful privilege it is that we live in an age and a country where all but those of the most meager means can afford to fly at least some sort of model. Thanks to present technology, most can afford to fly Radio Control, either electric or combustion-powered. For that, we modelers should be grateful indeed.

Here is where safety enters the picture: Anyone who has been flying more than a couple of months has undoubtedly seen a local hotshot who seems to think the rules are for you, and you, and you, and me, and not for him. After all, he "knows how to fly."

At the infamous (but no longer available to modelers) Mile Square Park in Orange County, California, where I usually flew when I lived in the L.A. area, we had 12 flight stations that were frequently all active at the same time. It was quite common to see 50 or 60 fliers out on a good-weather weekend. Clearly, this was an environment where courteous flying and "safety first" should have been the standard. Many times it was; too frequently it wasn't.

It always seemed as if some self-designated hot flier had to demonstrate his skill with shoulder-high passes at 120 mph a few feet in front of 11 others. Requests that he refrain from doing such were usually met with, "Get out of my face! I know how to fly!" I have to admit to a barely suppressed desire to wait until his airplane was far off the end of the field, clip his antenna at the base with bolt cutters and say, "You're through!"

L.A. and Orange counties compose a monster-plex of some 14 million people with all the accompanying potential interference generators known to human kind. Dear hearts, please write this down and date it: It does not matter how good you are if your frequency is suddenly zapped by outside sources.

This was demonstrated one Saturday when a particular flier got "hit" and his model ended up going through the open tailgate of another flier's station wagon. Happily, no one was hurt … that time. Fortunately, our technology has developed to the point where such instances are becoming less frequent, but the potential always exists.

Of course, mechanical, electrical, or structural failures are quite common. A servo gives up the ghost, we fly a little too long for the battery power left, something somewhere breaks. When any of these things happen, skill is of little use.

It's not only appropriate to speak to anyone whom you see flying discourteously and perhaps dangerously, but for the safety of others and our hobby, an obligation. It can certainly be done in a non-confrontational manner, and if that doesn't work, recruit one or two others and approach him with some backup. Numbers do help in a touchy situation.

Sun Valley Fliers Presents

SUN VALLEY JETS

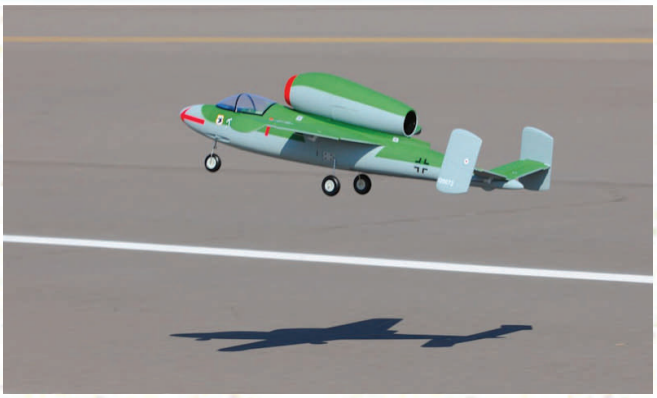
October 16-18 2009 dawn to dusk
Cave Buttes RC field at Cave Creek and Jomax Rd
Food onsite catered by Pig N Whistle BBQ
Saturday night awards dinner at the field
Spectator parking $5 per car No overnight camping

Registration information is available at

www.sunvalleyjets.com

SVF MEMBERS PAGE

Photos by SVF Members



Build for Better Performance

by Phil Bayly

Concept: We all know that a lighter-weight airplane is easier for the motor to pull through the air and will perform better, especially with a stunt ship—right? "Lighter" also means the airplane has a more favorable wing loading (weight vs. wing area) and stunt maneuvers are done more easily. The airspeed doesn't sag off during maneuvers, and this preserves the energy needed to continue the flight smoothly without stalling. We also know that we need to build in enough wood to give the strength needed to withstand the forces of flight, landings, and engine power, including vibration. So, here comes the weight penalty. Therefore, the real question is, how can we get the best of both worlds? Obviously a light weight and strong airplane is the ideal solution. But, reality says we probably need to find a compromise between the two.

With this accepted, the intent of this article is to outline some of the tricks of the trade that should help you lighten up your airplane without losing strength and achieve better performance. In fact, the first principle to understand is that a lighter airplane has less inertia. Therefore, less force is available to drive an airplane to its destruction as easily as a heavier one under similar conditions, e.g. crashes, air loads, etc. The guiding theme then says that what is really needed is just the right amount and kind of wood in the right places, and no more. This will give the optimum between the airplanes weight and its required strength. That's it! Now, let's examine some of the important details of construction principles, techniques, and wood selection that let us do this—the key to it all.

Bending Moments and Force Distribution: From physics we find that something breaks when enough force is applied to distort it beyond its elastic limits. When this happens, one side gives in compression and/or the other gives in tension. When less force is applied, we only get minor bending or distortion with a return to original form as the force is reduced. We should visualize this principle of breakage each time we select the wood (type, size, and density) for every part of the airplane, joint locations, and reinforcements. Try to imagine what forces each part will actually experience and choose the wood type, density, and size accordingly without any excess anywhere. You should use as little (light) as possible, but as much as necessary in every location throughout the airplane. This assessment includes the wood's size, density, grain, location, etc. in conjunction with the stress expected. Most important, realize that extra weight is simply unnecessary cargo that actually increases the inertia and force that is extended to the weaker places that break under stress.

The wing: So, where and how can we save this extra weight? Logically, you must attack the heaviest parts first to make the most difference with less effect elsewhere. So, let's start with the wing since it is normally the heaviest part of the airplane. In practice, diminishing the weight towards the wing tips with proper limits will make it stronger. Why stronger? Because the weight toward the tips is the major leveraging force that finally causes the wing to break at the usual spot, the intersection of the fuselage or edge of the wing capping, whichever is weaker. On nose impacts, especially with profiles, you typically find the wing's trailing edge tears loose at the body as the leading edge compresses, or the wing buckles up or down from the vertical force during flight maneuvers or when bellied in to the ground. With this understood, you can and should taper spars, trailing edges, leading edges, and capping to effectively reduce the overall weight progressively towards the wing tips without sacrificing the wing's strength. Other parts of the wing, including the tips, should be made of very light weight density wood. But think a minute. The outboard wing tip is usually weighted for flight stability. Therefore, heavier and stronger wood is always better than lead for tip weight, except for the need for a small amount of adjustable flight trim. Since the outboard wing needs to be heavier, it accordingly needs a little more strength throughout the outboard wing (higher density in the main spar is probably enough, so select the heavier one for the outboard).

Joints are the next consideration. Always be careful how joints are designed and where they are placed. Butt joints are the worst for strength! Diagonally cut, well matched, and glued joints are the best, especially with the reinforcement since the stress is distributed over a large area. Matching a diagonal joint is an easy fit if you overlap the two pieces of wood and cut the diagonal with a razor saw without letting them move.

Overlapping spars vs. diagonal matching and reinforcement is a great technique for strength and weight reduction since reinforcement is unnecessary, but difficult to achieve except with Free Flight wings. Since all joints become stiff and strong when reinforced, the wing spar's bending and breakage usually begins at its edge or thereafter. If not, you should reexamine your methods of jointing, including the type glue you use. Clamping joints while the glue dries is always best and can double its otherwise holding strength. Clothes pins work well too.

The wing's spars' distribution of force, beyond the stiff center area, should be diminishing toward the tip to optimize its overall strength. This means you don't want the forces to be able to over-concentrate at one spot causing the compression-tension relationship and breakage to happen as discussed earlier. You also want to trade off to have more wood (density and size) toward the fuselage at the tip. Smoothly distributed (non-visible) bending absorbs the force by spreading the load throughout instead of applying most of it at one place. Therefore, tapered spars, reinforcements, gussets, and anything else that helps the forces to be distributed smoothly throughout the spar is what we are looking for as we progressively have more wood approaching the fuselage where it is needed to help counteract the increasing leverage (breaking) force. This happens because most of the forces will now be concentrated there (as balsa spar enters a rigid reinforcement) when leveraged from the tip or from the wing during its high levels of flight loading (such as 90° or 120° turns).

Additionally, wood in the center of a spar or a wing does less for its strength (and stiffness) than the same amount at the surface. Therefore, for the maximum strength for its weight, intelligently laminated spars and V- or U-shaped and tapered reinforcements add the (least) wood at the right points where there is little compression and tension and the most wood near the surface where the stress is greater. You may recognize this as an “I-beam” concept for the spar with its veneer capping on a wing. Light weight sheet balsa on the surface adds much greater strength (and prevents distortion) than the same wood will do near the center of the wing. Its curvature to the airfoil also improves its rigidity. The ideal structure for weight vs. strength is tubular for stress to be applied from any direction; whereas, an I-beam wins for vertical stresses alone. Again, because this puts most of the mass of the material at the point of compression and tension where breakage begins or is countered for flight stresses. Additionally, you are always tasked to consider where some wood’s weight would be better removed for use somewhere else or not at all.

Finally, you should inspect all spars and stringers for minor nicks. Forces can concentrate here too and cause easy breakage under stress. You are much better served to sand out all of the nicks to help the distortion under stress to be uniform instead of concentrated at a flawed point. Don’t leave it “rough cut” or as is. Strange enough, sanding the spars is more for strength than saving weight, unless you significantly change the dimension of the wood.

The fuselage: A proper combination of woods, good design, and craftsmanship is essential here. The engine must be mounted on hardwood beams with a plywood firewall and gear mount. The sides must be hard and strong balsa reinforced internally to solidly support the power, vibration, and G loads of the motor while the sides continue to support the tail section’s air loads. The top and bottom blocks are the final elements that require good wood selection for lightness and strength, whereas a removable cowling contributes no structural strength and can be ultra light. In flight, leverage stresses are amplified at the wing’s leading and trailing edges and are enormous for stunt airplanes with long moments. Ultimately, cracking occurring at these high stress points is normal, even through the top and bottom blocks.

Don’t discontinue internal beefing there unless you expect a short life airplane. Strange as it seems, thin plywood will provide the required beef-up strength at less weight than more volume of balsa, since it does not tear or compress easily, e.g. 1/64 inch. All of the same rules apply. Internally trim away all of the wood that does not contribute to the strength of the airplane while filling (non load bearing) holes such as cowlings with light wood. The tail portion of the fuselage may progressively get lighter (thinner) as your proceed rearward from the stabilizer’s leading edge, but leave enough to support the tail wheel stresses. They are high stress during a hard landing, so a ply mount is best here.

The Stabilizer, Elevator, and Rudder: The previously described considerations for the wing’s construction and stresses apply equally to the entire tail section except that the shorter linear dimensions do not have as much leverage to cause breakage. Therefore, lighter materials and designed construction should be used accordingly. Equally important, the tail section is critically important to the airplane’s horizontal (nose to tail) center of gravity and must be kept as light as possible to prevent addition of nose weight for balance and performance degradation. Most tail sections are overbuilt (with heavier and too much wood) well beyond what is needed. The stabilizer and elevator intersecting spars must endure the continuing air loads and control system forces and care must be taken to select strong wood for them. Proper wood selection is even more difficult for solid wood stabilizer-elevator construction to achieve light weight and the required strength. After that, you may go very light, including the entire rudder and fin. Examination of many crashed airplanes seldom finds damage in the tail section! So, judge accordingly.

Wood Selection: Good wood selection is also an art and a science. The serious modeler will never rush down to the hobby shop to buy all the wood he needs to build the airplane he is

build the airplane he is ready to build. It's too late. The right selection of wood will likely not be there. The right approach is to always look over the wood every time you go to the hobby shop and buy the good stuff when you find it! This way, you will have it available when you are ready to build. Your inventory of wood on hand is a quick measure of how light you will be able to build your airplanes. Kits are typically terrible for wood selection (and fit). Therefore, don't hesitate to replace the heavy parts accordingly. In fact, it is best to look the wood over before buying any kit to be sure you are getting what you expect. Otherwise, you may have only bought a set of plans. Your first indication of the weight your airplane will be is the "as is" weight of the kit in the box, right off the shelf. Too heavy will always be too heavy unless you plan to change out the kit's bad wood.

Wood grains or "cuts" is an article of its own, therefore, it won't be covered further here except to say that all woods of the same weight are not equal for all applications. The is A, B, and C grain with correct and incorrect use for each that goes well beyond its weight considerations alone, e.g. do not use C grain for spars or linear strength. Its strength is undirectional and doesn't like to bend. For additional information, SIG provides an excellent information brochure on balsa grains and correct uses. Also, remember the earlier comments suggesting you visualize the stress each part will experience as you select its type, size, density, and grain of the wood for them.

Covering and finish: The covering and finish are great contributors to an airplane's weight and strength. The primary job of the finish is to provide the protection needed to prevent weakening from fuel penetration. To most, it significantly adds to the overall strength of the airplane, especially since they are at the surface where the maximum (tension and compression) stresses occur. If you are planning to go light on the covering and finish, additional strength will be required in the wood construction to survive. And, if you experience a tear in the wing's covering near the fuselage, without repair you may easily buckle the wing during a subsequent flight. A complete article on good covering and finishing techniques is in order for this complex subject. Maybe next time.

Conclusions: No airplane is crash proof. Still, the better airplanes incorporate the building techniques discussed herein so they will last longer, fly, and look better. If you still crash a lot from inexperience, this article can improve your survival rate and guide you toward building a better flying airplane. But just as important, examine every crash (not just your own) for the evidence of what broke and use your new knowledge to improve the weak spot(s) on the next airplane you build. Our progress only comes from doing it better the next time.

Improving Poorly Controlled, Dangerous Takeoffs

by Jim Devine

How often have you seen an airplane that is taking off veer toward the pilot stations? Usually the pilot gives the engine more gas and, using the ailerons, yanks the airplane back to the right. Occasionally, the airplane continues to the left, clears the safety barriers, and heads for the people in the pits and the cars just beyond.

If you have poorly controlled, potentially dangerous takeoffs, try practicing control of your aircraft on the runway. First, check the wheels and make sure they have a little toe-in. Also, the wheels should not continue to spin when given a flick. To create friction and avoid free-wheeling, slip a 3/16-inch long piece of fuel line on the axle and push the retainer collar in tight. With proper adjustment, the wheels will turn only if you push them with your finger. This braking action allows for a high idle speed without the airplane moving, which reduces the chance of the engine dying when the idle is too low. This also helps stop an airplane that might otherwise roll off the end of a runway during landing.

Choose a day when the wind is light and the runway isn't being used. Practice taxiing back and forth the length of the runway, using the rudder for control. Stay within a few feet of the yellow center line. When you have mastered taxiing at slow speed, click the throttle up another notch or two and keep practicing. With enough practice and a slow, smooth application of power, you can approach takeoff speed while moving down the center of the runway. You also can practice aborting the flight by shutting off fuel when you're about to lose directional control of the airplane.

With this improved directional control and practice at aborting a poorly controlled airplane, your takeoffs will be much safer and a pleasure to watch.

From TRAC News, Tampa Radio-Control Aircraft Club, Tampa, Florida

ARIZONA MODEL AVIATORS
R/C AUCTION
R/C KITS, ENGINES, AIRPLANES, BOATS, CARS, TOOLS, RADIOS, ETC.
SATURDAY, November 7, 2009
SUPERSTITION AIRPARK
MERIDIAN Rd. & LEVEE DR.
MESA, ARIZONA

REGISTRATION AT 7:00 AM – STARTING TIME 8:00 AM

ADMISSION $3.00 FOR BUYERS & SELLERS

CLUB RETAINS 10% OF SALE PROCEEDS
MINIMUM BID - $35

SALE TABLES AVAILABLE FOR ITEMS UNDER $35

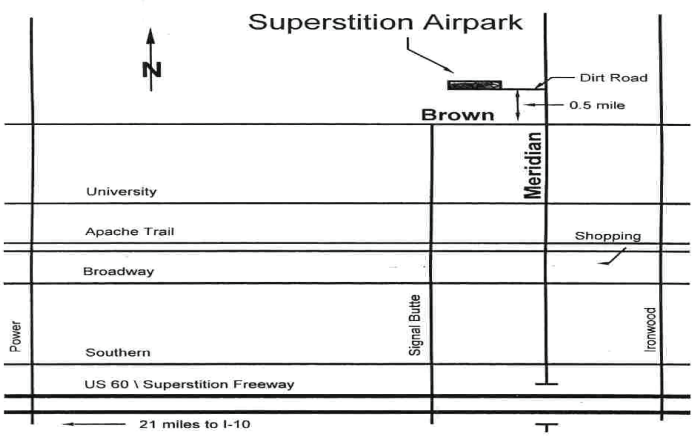
Note: **This Auction brings a different format than previous auctions. All auction items will be picked randomly instead of selling all a persons items at one time. This will allow us to present the best possible program to both buyers and sellers.**

HOT COFFEE, HOT CHOCOLATE & DONUTS WILL BE AVAILABLE ON SITE

FREE PARKING

FOR MORE INFORMATION CALL Art Ashenden AT:
480-314-0064

The Arizona Modeler Aviator's flying site, *Superstition Airpark,* is at Usery Park near Apache Junction, AZ. Follow Route 60 until Signal Butte exit, go north until Brown Rd. then turn right. At Meridian (1 mile) turn left, then 1/2 mile past the Rodeo grounds to Levee Dr. Turn left to enter the club field. Look for the signs.



SVF MEMBERS PAGE

The Heliport

Bob Bayless Electric tandem

4 photos by Eric from the Albuquerque fly in

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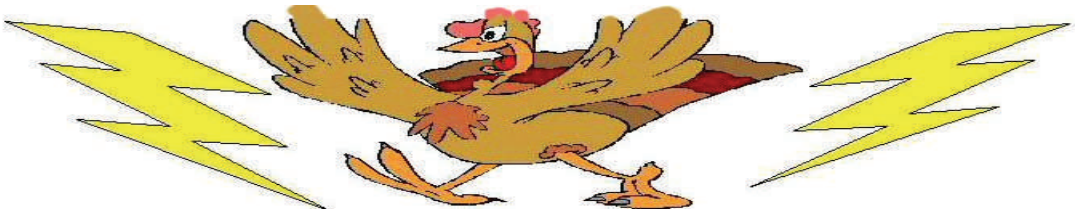

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+ Planes Must Fly To Qualify For Any Plaques.
+ Landing fee $20 for as many planes as you bring.
+ Pre-registration is recommended.
+ Pilot's Parking & Saturday night Pizza Party is included in the Landing Fee.
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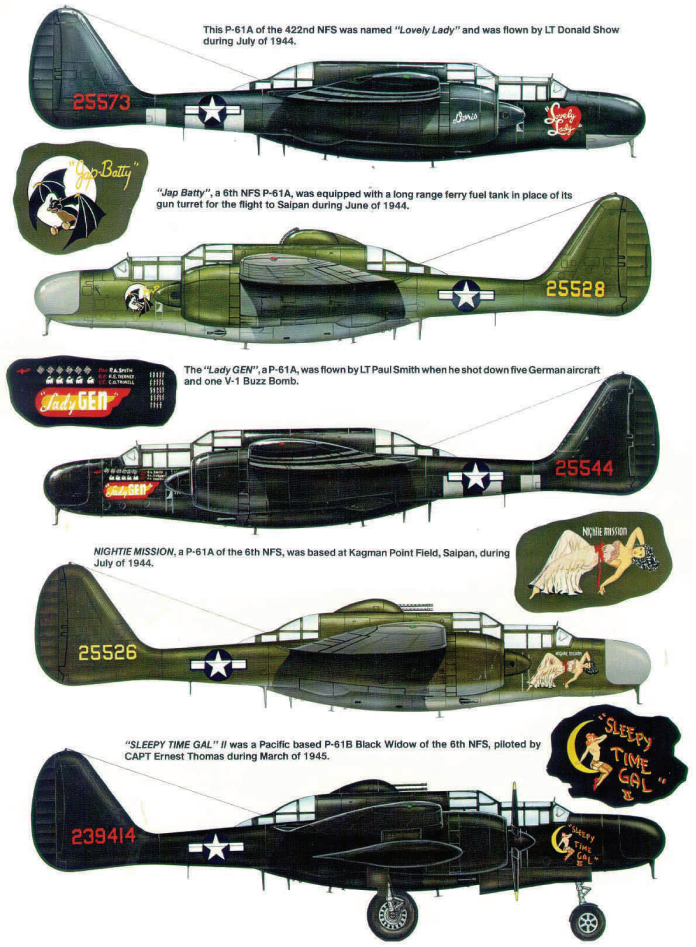
+ Proof of AMA & IMAA membership required. For Turbines, an AMA Turbine waiver will be required.
+ IMAA Applications Will Be Available At Registration.

Contact: Paul Goldsmith 602-323-7753 or wiinger@aol.com
Arizona Model Aviators web site http://www.azmodelaviators.com



Next month Issue

YEP! Its up to you members AGAIN. Its your news-letter.

If you got something going let me know. Be the *SR* field reporter, great job and good benefits, like free fresh air. Maybe we can throw in some *Hot coffee* . We'll give you a *Hat and gloves too*! See you then.

Would you like to be notified when the *SLOW ROLL* new issue is available? Give Gene your e-mail address.

This Month Issue

The 3-D article continues. Many events coming up so get your aircraft ready!!. Some good BUILD info this issue. No response from any SVF member attending any scale events . Send those articles and photos in!

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

THE SLOW ROLL

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Tony Quist, Vice President

Gene Peterson, Treasurer

Rusty Fried, Secretary

Walt Freese,
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