THE SLOW ROLL

CHARTERED #921
Since DEC. 1974

AUGUST 2015

President—Frank Moskowitz
Vice President—Tony Quist
Treasurer—JB Bowers
Secretary—Lou Pfeifer IV
Editor—Bob Purdy
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The Slow Roll is published by the Sun Valley Fliers by and for its membership to all others interested in the building and flying of radio control aircraft.

Inside this issue: **Cover Photo by Bob Purdy**

THE PRESIDENTS CHANNEL

Frank Moskowitz

August 2015 Slow Roll Presidents Letter

Welcome to the August Slow Roll.

I hope everyone is enjoying the summer weather. I had a few members asking me how to get hats and other apparel. As I mentioned in last month's letter, you can go to our website at www.sunvalleyfliers.com and click on the "SVF Apparel Embroidery and Accessories" Link. It's located in the center of our web page under the Slow Roll link. You will find two links. One is for embroidered items such as hats, jackets, polo shirts, button down shirts, hoodies, etc…. The other link is for silk screened logo T-shirts, coffee mugs, etc…

If you've been to the field recently you will notice how nice the landscape looks. It was a two step process. First we had **John Serio of Arizona Termite**, Pest and Weed spray the entire area. John is a member of Sun Valley Fliers. He also was the guy to get rid of a nasty bee problem. Spraying the weeds is new to us since we always used to just cut down the weeds to remove them. This program kills the roots and stops seed production immediately. It also lasts 6 months from the time of the application. I thank our savvy board members **Bob True** and **Andrew Schear** for helping bring this important component to our attention. The second step was the removal of the dead weeds. We enlisted the help of board member **Charlie Beverson** and along with others, they scraped and hauled away all the debris. I thank everyone involved. It looks great!

We will finally be replacing the tennis netting which protects flyers from run-away airplanes near ground level. *The new netting will be installed this month.*

On another note, the board appointed a new safety officer. His name is **Tom Kametz**. Because AMA chartered clubs are required to have a safety officer, the AMA has come with the role of a safety officer.

1. The Safety Officer should mentor; serve as a role model, an educator and a promoter of safety awareness.

2. He or she should assist in the development of club activities from a safety aspect and provide support in running such activities.

3. The Safety Officer is not the "club field police." Rather, he or she should display a positive attitude and willingness to teach others in regards to safety at the club field

4. Appropriate avenues should be established by the club to handle any safety matters that may surface—proper steps for the safety coordinator to take should a serious safety issue arise could be established in the club by-laws.

5. The Safety Officer will not make the final decision on safety concerns; these issues would be voted on and decided by the club board.

Quite a responsibility! So if you see Tom at the field, congratulate him on taking on this huge responsibility. The pay is not great but the benefits are superb.

That's if for this month. Enjoy the heat.

Our next club meeting will be Wednesday August 5th at 7:00 pm. If you want to eat I suggest you arrive no later than 6:15 pm. Location is Deer Valley Airport Restaurant. (7th avenue and Deer Valley Road). Lots of great. The Club meetings get better every month. 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

Frank Moskowitz
President

SVF MEETING AUGUST 5 @ 7 PM

Sun Valley Fliers General Membership Meeting Minutes – 7-1-2015

Meeting called to order by Frank Moskowitz at 7:03Pm. There were 31 members present.
Executive members in attendance Frank Moskowitz- President, Tony Quist – VP, Lou Pfeifer IV- Secretary, J B Bowers –Treasurer

Board Members in attendance: Charlie Beverson, John Russell, Dan Bott, Eric Stevens, Mike smith, Wayne Layne.
Absent: Steve Miller, Bob True, Andrew Schear.

Open: Frank welcomed the members.
Guests: None
New Members: None
Solo Pilots: None

Secretary's Report – Lou Pfeifer
Minutes from the **6-3-2015** meeting were approved as published in the **Slow Roll**. **Marshall Sims** a past member of **SVF** has passed in January. His wife **Marie** has donated all of his flying things to our **SVF** members and was put out for every-one down the field last week along with 2 kits given out as door prizes at the meeting. **Thanks Marshall and Marie!**

Treasurer's Report – J B Bowers
J B gave his financial report to the members. His report is on record for review upon request by the members.
Membership Director's Report – Mike Peck
271 members for **2015**. **Mike's** financials were discussed at the meeting and is available for review by the membership upon request of the members.
Safety Officer's Report – None

Old Business; Field CLOSED on Thursday July 1st for weed control from 7Am to 1Pm.
Lou sent out a membership Email to the fact. If you did not receive this Email from **Lou** please contact him and make sure your **CURRENT EMAIL ADDRESS IS CORRECT for future emails!!**

New Business; National Model Aviation Day Saturday August 15th at **Palmcroft Baptist Church**, at **35th Ave.** and **Greenway**. **SVF** could have a table at this event. For more details contact **John Geyer**.

SVF Electric Fly will take place in **November** as in the past. We are going to make the recipients of this meet (**ANIMALS HOME FUR GOOD**). We hope to raise a **BUNCH** of **MONEY** for this **NEW AND GREAT CAUSE**. For any further info contact **John Geyer.** Thanks **John!**!

After many years **Walt Freeze** has retired from **SVF Webmaster** position. We wish to thank him for his longtime service to **SVF** and wish him well in his future endeavors!!! There is nice write up in the **Slow Roll** by **Bob Purdy**. President Frank Moskowitz will be the new webmaster until further notice.

Door Prize Winners: Tom Kametz, Mike Peck, Lou Pfeifer, Mike Smith, Nate D'Anna, Craig Demarcus. Bernard Doerenbecher, Lucky Mitchell, Vic Pietkiewitz, Lou Pfeifer SR. , Wayne Baker, Paul Brown, Phil Barr

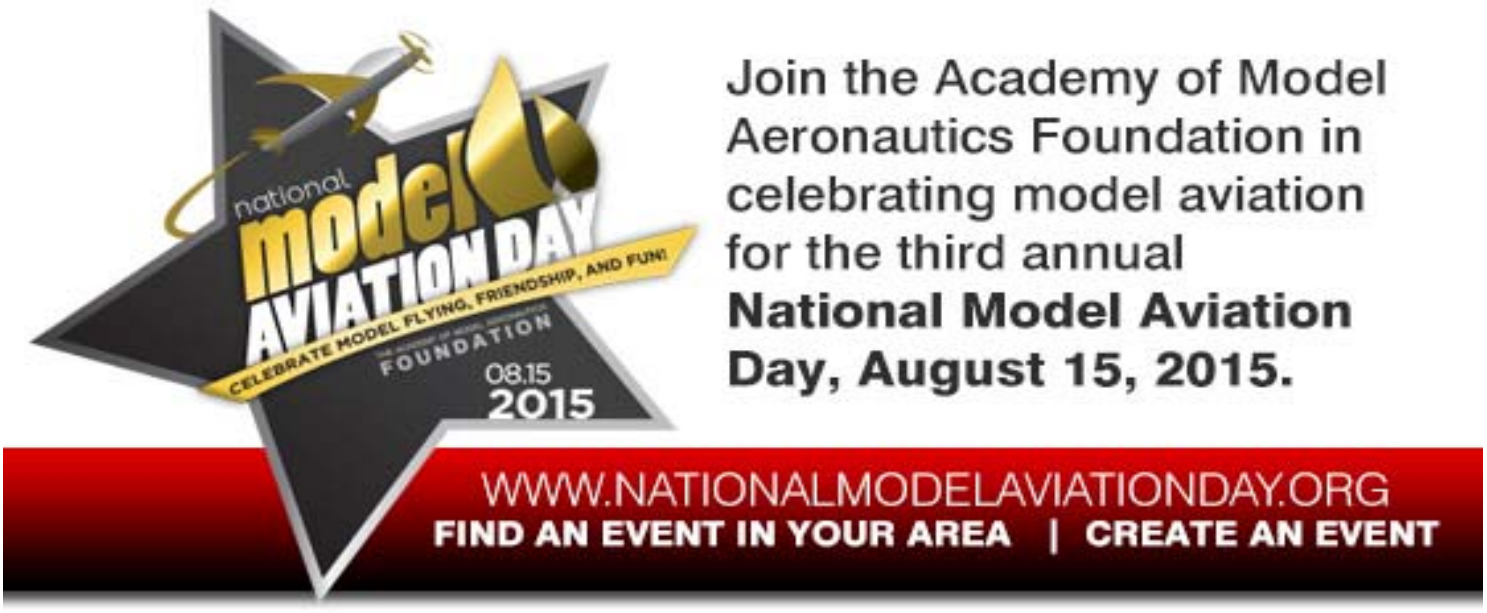
50/50 Winner: Vic Pietkiewitz

Auction for Avistar goes to **Ron Thomas** for $50.00. Kit was donated by **Sam Foote**. Thx Sam
Show And Tell: None
The meeting adjourned at 7:32 pm

Respectfully submitted,

Lou Pfeifer IV, Secretary

Home 'Fur' Good
ANIMAL RESCUE & PLACEMENT



Location: **Saturday August 15**
Palmcroft Baptist Church
15825 North 35th Avenue
Phoenix
It is on 35th Ave North of Greenway on the East side

Setup time:
Setup time starts at 0800. Tables and chairs will be provided.

Event time:
The event will run from 0900 until the building closes promptly at 3:00 P.M.

Items to bring:
Please bring a banner for your organization and if you wish fliers for people to take that describes your group. It will be best if there are club members at the table to talk to the people.
Bring models for display. There will be a very large air-conditioned indoor area for you to set them up.

There will be a donation box to collect for the Wounded Warrior Project.

Thanks for your support,
Bob Bayless.....

WEEDS B GONE

Beautiful!

Sun Valley Fliers

Early Morning Flying

Sun Valley Fliers

ARIZONA WORLD WAR II ARMY AIRFIELDS

THUNDERBIRD FIELD #2

Scottsdale Airport

History

During World War II the airfield was used by the United States Army Air Forces Army Air Forces Training Command as "Thunderbird Field #2" on June 22, 1942, as a primary flight training school for aviation cadets. Since its inception, Thunderbird #2 graduated more than 5,500 students, a total three times greater than the entire total contemplated by the AAF's original expansion program. In addition, Thunderbird #2 pilots flew nearly 26,500,000 miles, more than 3,000 times around the world at the equator. The school was deactivated on October 16, 1944.

While in operation, Thunderbird #2 underwent a transformation that took it from a small piece of isolated desert to a primary training school. This transformation is attributable to Air Force officers such as General Henry H. Arnold and Lieutenant General B.K. Yount (commander of the Army Air Forces Training Command, and the civilian contract school operated by Leland Hayward and 1.

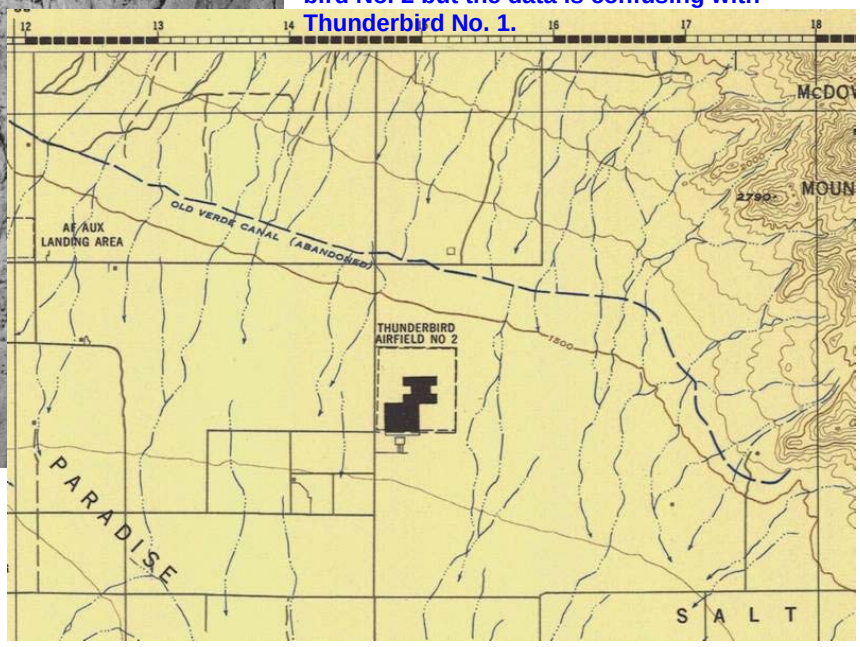
One of three does not exist)" Southwest Airways' training schools in the Valley, Thunderbird #2's first class of cadets, arriving before the field was pronounced ready for occupancy, had to be trained at Thunderbird Field #1 in Glendale. Not until July 22, could all personnel, consisting then of 28 flight instructors, move to Scottsdale. Throughout World War II, Thunderbird #2 devoted its every facility to the training of more and more cadets. In November 1943, the peak was reached; 615 cadets who flew an average of two hours a day, making 1,845 separate takeoffs and landings. In a period of ten weeks, students received a total of 65 hours of flight training and 109 hours of ground school. In spite of the intensified training, the field gained a widespread reputation for thoroughness of instruction and high caliber graduates.

An increase in the number of students brought about a similar gain in the number of persons employed, until in January, 1944, Thunderbird II's payroll boasted 508 employees, with a total monthly salary expenditure of $115,247. Gradually the tempo slowed as World War II came to an end. So well did civilian contractors complete their initial assignment, that by August 4, 1944, only 40 of the original 64 primary schools were still in operation. At the closing of Thunderbird #2, only 15 remained opened to complete the task of primary training.

After the war, Arizona State Teachers College (now Arizona State University in Tempe, Arizona), acquired the airport in order to implement its own aviation program. Distance from the college campus and cost of operating an aviation program soon convinced the college to abandon its plans.

The airport was acquired by the City of Scottsdale in 1966 from the Seventh-day Adventist Church (which founded the airport) and have continued to operate it since.

Had two "paved" areas - first was a large square area and on the NE side of this area was an "H" paved surface too. Scottsdale airport now; during WW2, was owned by Defense Plant Corp. There may have been some auxiliaries associated with Thunder-bird No. 2 but the data is confusing with Thunderbird No. 1.

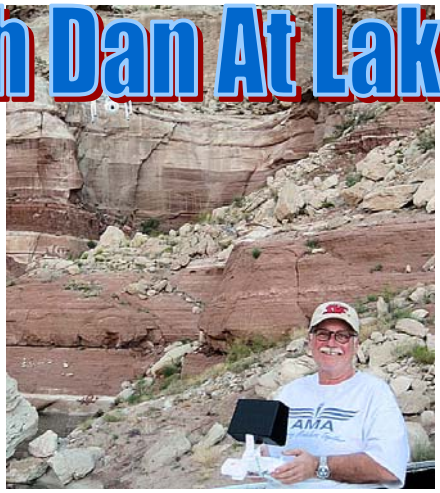


Editor: This is the last of the Arizona WWII Army Airfield information that I could fine. Hope you enjoyed it.

Joe and Kimberli Balabon at the Udvar-Hazy Center in Chantilly, VA.

Sun Valley Fliers

Flying With Dan At Lake Powell

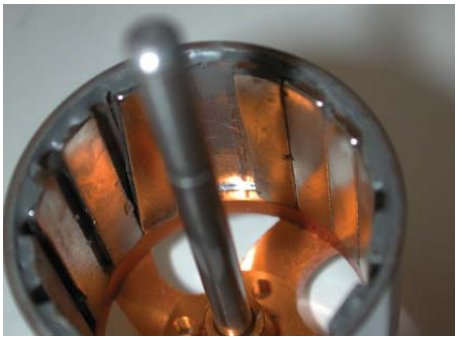


Sun Valley Fliers

Don’t cook your speed control!

Avoid these common power system mistakes

Electric fliers all have one thing in common regardless of the size or type of models they fly—the electronic speed control (ESC). It doesn’t matter if you fly helicopters, airplanes, giant-scale, indoor, or micro models; at the heart of your power system is the speed control, and if it’s unhappy, you will be too. The costs and types of speed controls vary in every aspect and that includes quality. The one constant, however, is your understanding of how to make them last, which in the end, saves money and your aircraft!

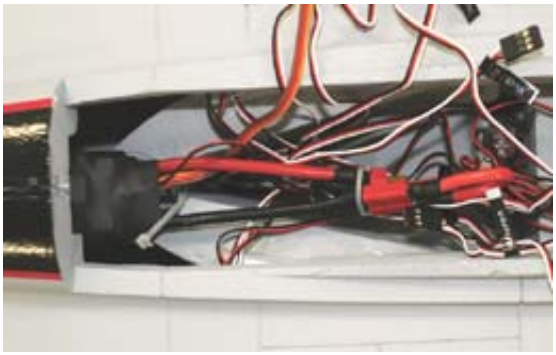


Poorly constructed motors can throw magnets and cause extreme current spikes that will destroy a speed control.

Quality Matters

This pretty much covers everything. Quality motors, connectors, speed controls, installation, solder joints, etc., but let’s talk about components. When encountering speed control problems, we don’t often think about whether they might have been caused by a cheap (poorly made) motor, but it can and does happen. I recently experienced a catastrophic failure in a foam jet that caused the speed control to melt and actually burn its way out of the bottom of the aircraft. Parts of it were left inside, but it unsoldered itself and melted completely. Upon post-mortem inspection, I found that the magnets inside the motor were unevenly spaced and one had actually come loose and been chewed into pieces as the motor spun. The funny thing about electric motors is when something starts to go wrong, the motor will just ask for more current so it can work to overcome it. My on-board data logger showed normal current at takeoff and shortly after, it began to climb until it spiked off the scale. This is an indication that the motor was failing and the binding of the magnet chunks caused the excessive current spike that subsequently melted the speed control. Some speed controls have over-current protection and others don’t. Look for one that does! This doesn’t guarantee that it won’t be damaged by a sudden failure like mine, but it just may help save the speed control. This was an expensive failure due to a poorly made motor.

BE COOL!



The speed control in this foam jet is jammed into the nose, so it’s fully insulated and gets no cooling air. With the heavy load from the motor and too many servos, this will overheat and die quickly.

Install your speed control in a place where you can get maximum airflow across it. Remember that if you let cool air into the fuselage, you have to provide a place for the air to get out too. That exit hole should be about twice the size of the inlet hole. Heat is the enemy, so the cooler you keep your speed control, the happier it will be.

Eleven servos and an onboard LED lighting system overtax the speed control’s BEC.

SIZE MATTERS

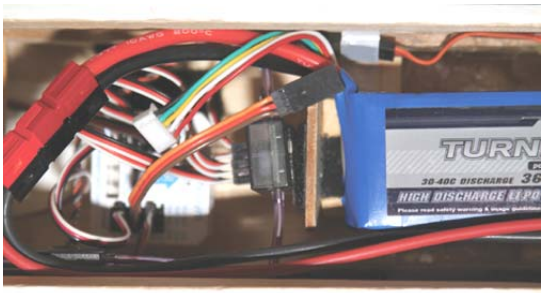
The quickest way to get experience buying speed controls is to buy them too small for the application—meaning the motor voltage and current requirements along with the BEC (battery eliminator circuit) requirements if you’re using one. If you’re sizing your speed control based on the maximum requirements of the system and you’re just barely meeting them, go to the next size up. If you can use one with a heat sink, do so. If your BEC requirements match or exceed the ratings of the speed control’s BEC, then choose a different speed control or disable the BEC and use appropriate receiver power. Remember, if your BEC fails, you lose the airplane.

continue

- ***You must keep battery wires as short as practical. Short means one foot or less, brushed or brushless makes no difference.***

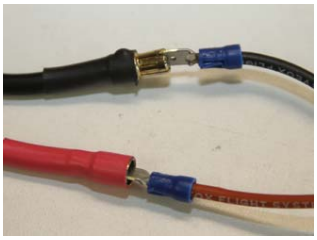
Bob is better known as “AstroBob,” former owner of AstroFlight and holder of a patent on electric flight. When AstroBob talks, I listen. Always lengthen the wires from the motor to the speed control if needed. The best possible solution is to keep all wires as short as possible, but we know that’s not always easy when you’re doing that special scale project.

NEATNESS COUNTS



All of these unsecured wires flopping around right over the receiver antenna will cause trouble. There is also 18 inches of wire from the battery to the speed control, and that’s WAY too much!

Remember what your mother told you, “neatness is important.” A jumble of wires just stuffed into a fuselage can cause many problems, especially if they are unsecured and flopping around on top of your receiver antenna. We have become overly secure with our robust 2.4 systems, but wires moving around in close proximity or touching the antennas can and will cause reception problems. If you have so much wire that you need to bundle them or tie them up, take the time to trim them to the proper size. This makes the plane safer, but also shortens wires and decreases resistance. This counts whether it’s for your motor/speed control or servos.

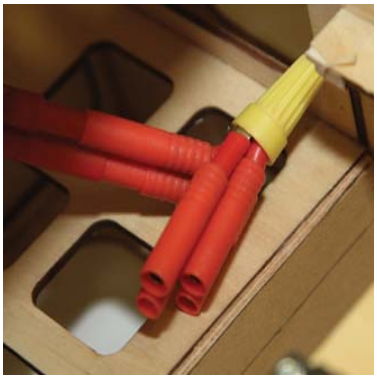


Mismatched connectors are ALWAYS a bad idea.

Connectors & Adapters

Note the securely attached speed control for this big power system and how the connections are well insulated and secured. Short wire runs and a protective grommet in the firewall, where the wires pass through, ensures no shorts over time.

An improper extension made by jamming a bullet into the EC5 connectors. Great connectors ruined by a bad idea.



A homemade parallel battery connector in a plane; wire nuts belong at home, not in your plane.

There is no standardization between connector types, so most of us end up using an adapter at one time or another. Be sure to wire and solder them carefully. Double check the adapter before using it. The goal in electrics is to reduce the possibility for increased resistance in our circuits. This causes heat and wasted power. It’s best not to use an adapter, but if it’s necessary, be sure it’s properly sized and constructed. Wire nuts have their places in home wiring construction, but NEVER belong inside our aircraft.

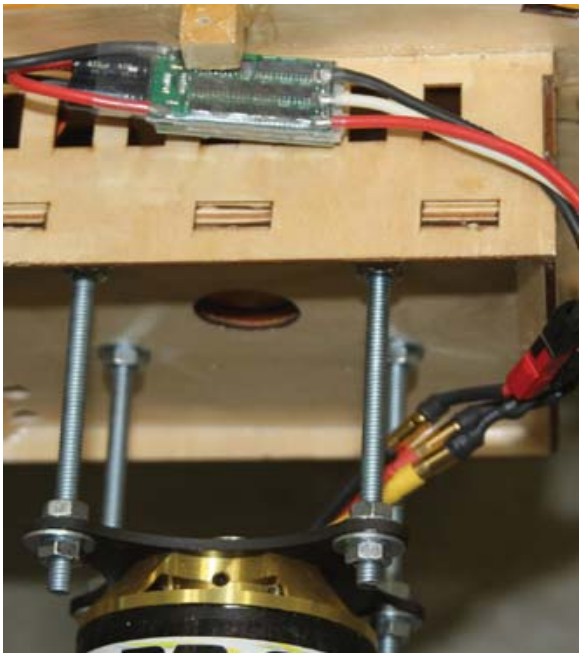
continue

Proper Soldering

A good soldered joint between the wire and 6mm bullet will handle a lot of current. Note that there is no excess solder running all over the outside of the bullet and the joint is shiny clean.

Many of the connectors in our electric power systems need to be soldered to wires. Always use properly sized wire gauges and quality connectors. Even the best soldering job can't make up for bad wire and poorly made connectors. A properly soldered joint is shiny! Your components can't be too clean, so clean the components before trying to solder them. Your fingers will get oils on everything, so be careful with what you touch. Tin both surfaces before joining them and then use just enough heat to let the solder flow between the two pieces. If the iron is oversized and too hot, it will end up being a dark, burned joint. If the solder flows and ends up nice, shiny, and bright—you've been successful.

Wiring Basics



This is a big motor requiring a large speed control and unfortunately, this one isn't up to the task. Adding to the problems is the small gauge wire and adapter using uninsulated bullets. This system was caught and changed before there could be a problem.

A question I often hear is, "Is it better to lengthen the wires from the battery to the speed control or to lengthen the wires from the speed control to the motor?" Online forums are full of ideas, opinions, conjecture, and debate over this question. Let me give the simple answer first; it is better to lengthen the wires from the speed control to the motor and keep the battery wires as short as possible. That's it, plain and simple.

The debate arises over resistance and inductance. It's argued that using a larger gauge wire reduces the resistance, making Recipe for a Cooked longer battery wires acceptable. While it does reduce resistance, it doesn't take into account the increased inductance it causes. Proponents of lengthening the battery wires say that can be overcome by adding additional capacitors to the front of the speed control. This is a patch, not a fix. The speed control comes with capacitors installed as determined by the manufacturer for its intended application. Without specific knowledge on current and how good the flyback diodes are, along with the switching speed of the FETs, voltage rating of the FETs, and types of FETs, you're grasping at straws. If you do know those things, you'll still need to do a lot of math to figure out the appropriate caps to add.

Recipe for a Cooked Speed Control

- Take one undersized speed control
- Add cold solder joints
- Use extra long wires from the battery to the speed control
- Pack it in a foam plane with no cooling air
- Fly partial throttle settings extensively
- Push the BEC to its max limits and beyond
- Fly consecutive flights without a break

Here are quotes from AstroFlight's Bob Boucher on the topic of which wire to lengthen:

- ***Wire resistance may rob you of a bit of power, but it will not destroy your speed control or motor.***
- ***Wire inductance will not damage your motor nor will you be able to detect any effect even with 100 feet of wire.***
- ***Wire inductance will kill the mosfets in your controller and may even blow the caps.*** *Ed. Note: Bob is comparing inductance in the motor to speed control wire with inductance in the speed control to battery wire.*

continue

Check your manufacturer's website to see the limits of their connectors. If you're pushing the limits of your 4mm bullet connector, then go to a 6mm size. The same applies when you're using EC3s or whatever brand. You want the most surface contact and least amount of resistance you can get for maximum efficiency from your system.

Tips for a Happy Speed Control

- Buy a quality speed control
- Buy one large enough to handle the load
- Don't exceed the BEC limits
- Provide cooling; all that you can get
- Keep wires as short as possible
- Use appropriate connectors

NEVER mismatch connectors. I've seen Dean's Ultras jammed into female bullet types and that is a recipe for disaster. I've also seen spade plugs shoved into the grooves between the contacts on a male bullet connector. Likewise, alligator clips have no place in an electric airplane. They may seem like a universal fix, but it's actually a universal mistake. All of these things can be inefficient, but more importantly—they are all dangerous and create a fire hazard.

MOUNT IT SECURELY

It's not always easy to find the right place to securely mount the speed control, but it's absolutely necessary. Some larger controllers come with mounting brackets so they can be screwed to the front of a firewall, etc. Most smaller controllers depend on you to figure it out. Velcro is the usual method of choice and works well. Be sure it is secure though. If in doubt, use industrial strength versions or rigid lock tabs. Whatever you do, don't allow it to flop around inside your plane held only by the wires.

BOTTOM LINE

No one wants to cook their speed controllers! As with everything else involved in our hobby, it's the small details that matter the most. Avoid these common mistakes and you'll maximize your airplane's efficiency and greatly lengthen its lifespan. –BY GREG GIMLICK

Many AMA members are full-scale pilots, know someone who is a full-scale pilot, or aspire to someday become a full-scale pilot. If you fit into one of these categories, or if you're simply an aviation enthusiast, this message is for you. AMA and the general aviation community are asking for your help.

For the last three years, the EAA has been working toward medical reform for general aviation pilots. EAA has been working with Senator James Inhofe (Senator Inhofe also sponsored the Special Rule for Model Aircraft included in the 2012 FAA Modernization and Reform Act) and others to get the *Pilot's Bill of Rights 2* (PBOR2) introduced in the Senate for a vote that may occur as early as Tuesday, July 28.

Over the weekend, the Air Line Pilots Association, without any supporting substantive data, came out in opposition to PBOR2. You can learn more about this at: http://www.eaa.org/en/airventure/eaa-airventure-news-and-multimedia/eaa-airventure-news/2015-eaa-airventure-oshkosh/07-25-2015-eaa-fires-back-at-alpa.

Today we're asking that our members support the EAA and our colleagues and friends who are general aviation enthusiasts in support of PBOR2. You can do this by going to http://govt.eaa.org/ and clicking on the submit button. Time is short and your input is needed today.

Thanks in advance for adding your voice to this important issue.

Read the AMA press release on this topic.

The Day My Wing Came Off . . I'd Left My Parachute Down There In Its Locker

Internationally-known aerobatic pilot Neil Williams . . did not show up to give an important aviation talk.

Neil had been last heard of ferrying an old HE 111 German bomber from Spain—albeit in putrid weather across the English channel.

But that shouldn't have been a problem for a pilot . . so expert in the ' scratching around technique ' required to get across England on almost any other than a ' fogged in ' day . . without referencing IFR instruments.

By knowing precisely where the obstacles were, one could ' scud run around country homes to barely clear . . hedgerows and trees.

Of course, if something surprising *' appears in front of your face '* . . like a new cell phone tower . . you'd have left yourself an ' out ' by allowing time to make an instant 180 knife edge turn. And I'll wager significant money . . that some jocks reading this . . are sharply aware of that scenario.

When the bomber's wreck was found, my intuitive answer to *what might have gone wrong was* : *Whatever happened* —it was unlikely that Neil had experienced anything quite like it before. Flying the doomed and complicated airplane, that killed Neil and his wife, also involved crew activities.

Neil was not entirely relying on his high level of solo skill and intuition, but he was sharing flight responsibilities with less skilled others. [Ed. It reminds me of Jochen Marseille radioing his flightmates that cockpit fire was engulfing him. And he had to ' get out.' In unison, they had been shouting at Jochen over the radio . . not to bail out until their formation had crossed into friendly territory. So, perhaps the *finest dog fight pilot in aviation history* . . perished by heeding others opinions.

Neil Williams was definitely a 100 percenter on *' get-the-job-done sector on a dartboard of personalities. In addition to* his flying as a Experimental Test pilot, he had deeply excavated . . unlimited category . . aerobatics.

His *no-limits determination* dragged Great Britain's involvement in National Aerobatics from Sportsman Category to the nation altering into a respectable World Class Competitor. Of course, several of his aero-planes were bruised along the way.

Breaking the wing of his Zlin aerobatic aeroplane, during flight . . was not his only structural failure . . but it was Neil's most famous.

The Zlin's wing fell off in 1970, while Neil was practicing for the World Aerobatic Championship.

The newsworthy story was well-enough known in Europe. You know the sort of newspaper ' thing ' :

' While flying his Zlin Akrobatic plane, well-known pilot Neil Williams noticed that his wing was folding . . and he elected to fly inverted for a while [*Hmmm . . guess I'll amaze myself by doing some upside down ' stuff.'*]

The reality was much hairier than one newspaper's perception. And I have his own report :

" I was flying at a height of 1,000 feet, pulling 5 G's . . when there was a loud ' BANG ' accompanied by a severe jolt. On its own, the aircraft rolled left, as its left wing folded steadily upward. In spite of his inputting full opposite aileron, the left roll . . . continued." " Full right rudder was applied. But although a high degree of sideslip was achieved, the left roll continued to happen. And the wing continued to fold. The engine RPM was varied from idle to full power . . with no effect. Now down to 300 feet, the aircraft was in a vertical left bank . . its hinged wing continued folding up. " Manual control was nearly gone. "

And that's exactly how it looked to us . . with our mouths agape we were stunned . . as we watched his folded wing. It looked hopeless.

As Neil disappeared down behind the houses across the airfield, I told myself : *" In 5 seconds - Neil Williams*

will be dead. "

Neil's riveting report continued : *" Because of the folded wing, the nose continued dropping . . so I reversed the ailerons into the roll's direction . . and pushed the stick forward to ' lay on ' some Negative G's . . to get the Zlin's nose up. And the airplane rolled inverted.*

Simultaneous to another loud BANG . . as the hinged wing snapped back into its designed position . . to allow the air craft to fly quite normally, But only when it was upside down.

As Neil's wing snapped back into its original position with a loud *bang* . . it was a scary moment for those of us down below—watching— as it created shock drool in several opened mouths.

The Zlin's hinged wing tie down bolts failed. And those of us familiar with the spar design of the wing , we were also aware that the wing failure . . *was negatively altering the wing . . from its original design.*

When — would it just *' pop off ' ?*

At about 150 feet of altitude, with negative G's and attitude altering the aeroplane's posture, the wing snapped back to its proper position—stopped with *brick wall* abruptness.

In inverted flight. In my mind's eye . . I saw the wing . . flip right off.

But it stayed on. As Neil climbed away . . Inverted.

I thought : *" If he bends that wing again. It WILL come off."* It was cruelly ironic to think, that having just avoided death seconds ago . . he could meet death again in a few minutes.

I knew he'd think of something.

Although if I had been doing the flying . . I would be dead. And he only had eight (8) minutes of petrol within a tiny specialized tank used for inverted flying.

But those minutes for him to ponder : *" What's my next move ? "* amplfied his desperation.

Neil later said : *" As soon as I rolled inverted . . the engine quit. After my muscle memory had turned off the fuel when I thought I would crash. Now, while holding it in inverted flight, I switched the gas back on . . and climbed away inverted . . while forcing my knees against both sides of the cockpit to stop my legs from shaking. I shouted to myself : " THINK D-A-M-N YOU ! T-H-I-N-K ! "*

He continued : *" To give myself the full eight minutes of life, I decided to climb inverted . . as high as possible . . until the tiny fuel tank ran out."*

In cockpit resource management school, we had learned about : the human ' arousal curve ' that happens during a flight emergency,

The best place for a pilot to be is in the <u>middle</u> of the curve . . between quasi-consciousness . . and panic.

But to inspire self-arousal is to mentally force yourself out of the shock-induced ' dream-like ' curve's worst end . . into viable thought coupled with meaningful hand and body moves.

When faced with a *structural failure. With his parachute resting in his equipment locker.*

Williams was now on the wrong end of his his emergency arousal curve . . where his thoughts were pretty much immobilized . . by *brain-numbing-shock.*

An automatic emotional defense mechanism invaded his mind : *' HEY m-a-n ! . . just relax and give up . . come on . . you have no chance . . it's not going to hurt. Just sit back and l et ' IT ' happen . . there's nothing you can do about it. '*

To come back from this ' dulled stupid phase' . . requires task-oriented . . survival mode . . ' right-stuff ' tough . . raw guts.

Neil's return to ' *life* ' . . started with a simple aileron roll to the left . . and back around . . to the inverted.

As I saw him begin the roll, I thought : *" If he tries that—his wing is going to snap off."*

The maneuver may have been an attempt for Neil to prove the last few minutes had just been an awful dream : *' Hey I can't die because I'm me. Maybe if I roll it back upright . . then everything will be normal ! '*

Neil's report is more *test-pilot-like* : *" I climbed out . . inverted . . to 1,000 feet where experiments could be carried out to determine whether the aircraft could be rolled out to normal flight. But which way would be the optimal direction of aileron roll ? I guessed left . . But I was wrong. And the wing started to fold in half. "*

Afterwards Neil shared with me : *" It was very difficult trying to make a decision— as to which way I should roll—when I got to the final seconds of the crash landing on the airport grass—coming up soon. "*

With the Zlin inverted . . he made a landing circuit and final approach.

He flared out . . INVERTED . . until the top of his head was whizzing by . . slightly above the grass .

With a natural pilot's precise timing he made a quick half-roll to the right . . then thumped the landing gear into the grass . . with an exactly correct forward stick pressure.

Once again . . the wing folded . . and divots and aeroplane bits flipped up into the air . . in tune with the final hinged wave of an applauding left wing.

Williams exploded out of his partially jammed canopy, ran twenty yards, then dropped on the grass, powerless with relief . . unharmed.

We all just stood there in a state of unbelief—transfixed by the high melodrama of it all.

When there was no blazing fire, Neil returned to the wreck to make certain the electric switches and magnetos were off.

Enter—*the Keystone Cops !*

Galvanized by having witnessed a rare but real crash . . the ambulance men, roared out to the crash scene . . grabbed Williams off the grass . . threw him in the back of the wagon, slammed the doors and roared away towards their antiseptic lair.

The ambulance vanished from sight and sound between the aeroplane hangers.

For a few moments, time stood still. Nobody moved or spoke.

But within a minute, the ambulance reappeared and roared back towards the wreck, it skidded to a halt as Williams jumped back out on the grass.

It was a small victory of an individual over ' the system ' although his brain had . . rotated back into its stupid mode . . and allowed the ambulance folks to embarrass him with their Keystone fiasco.

' Oh, and you're asking . . why didn't Neil wear a parachute ? '

In the 1970's, we didn't believe in wearing parachutes—too much additional extra weight for optimal aircraft performance. And we rationalized, that due to our often low-level aerobatic maneuvers :

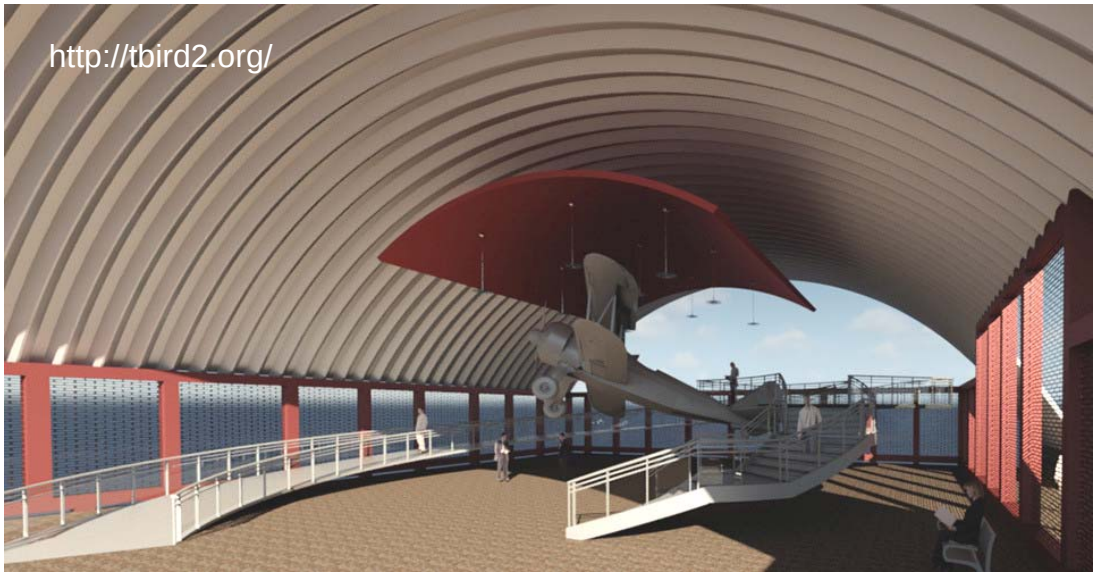
" We were flying too close to the ground to successfully bail out ! "

On the other hand, in his report Neil confessed : *" If a parachute had been onboard . . the Zlin would have been abandoned. "*

Mike Riley

[abridged from IAC magazine September, 1992 issue]

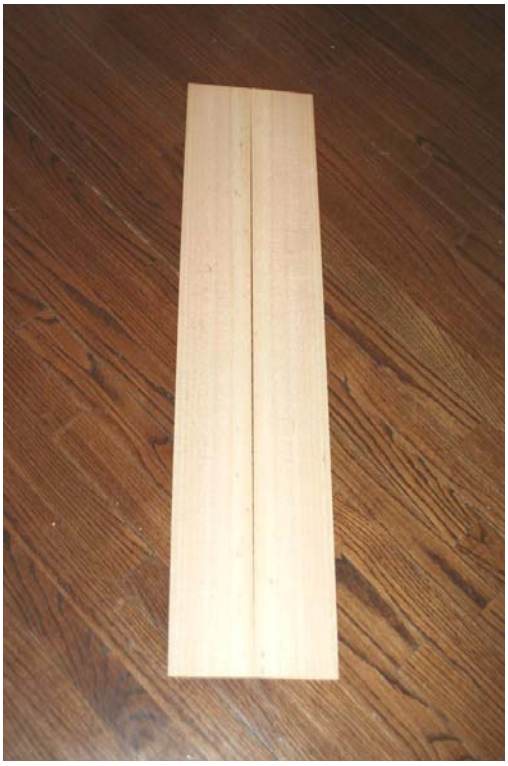
Placed at the entry of the Airpark and Airport in 1986, serves as a gateway to the Thunderbird Field II Veterans Memorial and the Scottsdale Municipal Airport.



Thunderbird Field II Veterans Memorial

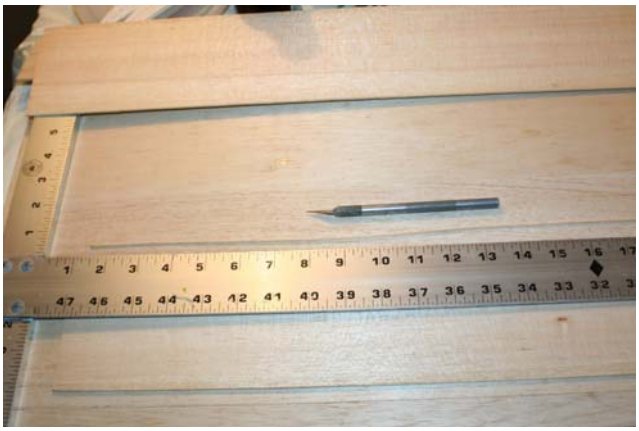
Artist rendering by Michael Kuzmik and Celia Paredes Peimbert.

Budget building: how to edge-glue balsa



At some point in your model-building career, you will be faced with a problem. You will have an area of your model that requires a sheet of balsa wider than the material you have on hand. If you are like me, this usually happens when you are starting to make significant progress and when the local hobby shop is closed for the evening! Let's say additionally you need a sheet of balsa that is 10 inches wide (sheeting a wing for example) and the local hobby shop only stocks 6 inch wide sheets. Even if the hobby shop is open, it seems you are out of luck. Another factor with wider balsa sheets is cost. It would seem that the cost per width of balsa sheet should be pro-rated but that isn't so. One online resource lists 3×1/16-inch balsa sheet for $.90 per sheet, so a 12-inch-wide sheet of balsa should cost $3.60. Try $10.23! What's a modeler to do? That's right, we edge-glue sheet balsa to make the size sheet that we need!

The easiest technique I have found was learned from Randy Randolph's column right here in Model Airplane News. I have used it many times and the result is a strong, nearly seamless joint. With this technique, you can theoretically make balsa sheets as wide as you like, only limited by the degree to which you'd like to become a benefactor of Ecuador.



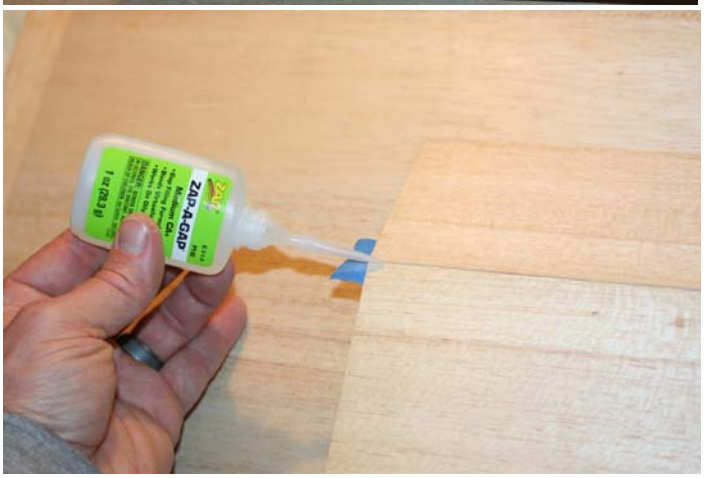
Step 1: True your sheets
It would seem that sheet wood from the factory should have a very "true" edge, meaning it should be perfectly straight along its border. There are a number of reasons that this doesn't happen. If you lay the sheets flat and they are perfectly congruent along their edge, you can skip this step but I'd wager the farm that your sheets aren't true. The 3/32-inch sheet I laminated had nearly a 3/32-inch gap mid-sheet due to untrue edges. Take a long straightedge (I used an aluminum framing square) and cut the mating edges true. Make sure your blade is vertical when cutting.

Step 2: Tape sheets together
Lay the sheets flat on your building board. Approximate the edges you have just "trued" and hold the sheets together. I find it helpful to pin and/or weigh down the sheets to keep them pressed together. Check that the edges are pressed tightly together along the length of the seam. Tape the seam together along its entire length with masking tape and turn the sheets over. The seam should be held tight by the tape.

continue

Step 3: Glue

The glue used is a matter of preference. I used thin Zap but others may prefer Titebond as the seam will be a bit easier to sand afterward. Gently fold the seam back to open it slightly on the side opposite the tape. Lay a thin bead of glue along the seam, and place the glued sheet tape side up on your building board. Use a sheet of wax paper under the balsa otherwise you'll have a bugger of a time getting the sheet unstuck from the building board. Weigh or pin down the sheet while the glue dries. Remove the tape, sand the seam, and resume your build!



This technique is a little more work than buying sheets that are already the dimension needed, but the savings in the hobby budget will allow you spend those dollars on other things. Be frugal and edge-glue! BY SCOTT COPELAND

Sun Valley Fliers

Super-Size Bipes!

This pair of impressive biplanes put on quite a show at the North Weald Airfield in Essex last weekend! The 55% Stearman is powered by a Valach 800cc 7-cylinder radial, and the 85% Pitts is powered by a Hirth gas engine turning a 69-inch, 3-blade prop. This must-watch video is an incredible show (although our nerves could have done without the section where someone hand-props the giant Stearman!). Thanks to the father and son team of Pete and Dean Coxon for taking this great video.

VIDEO: https://www.youtube.com/watch?

Unusual Electric Venom

John Ranson's 1/6-scale jet proves that you don't have to build 'em big to impress the crowd! With more than 1,000 building hours in it, this gorgeous Venom is from the Mick Reeves plan and has an epoxy glass fuselage. The 21-pound plane is powered by a Schubeler ducted fan on two Thunder Power 6S 6600mAh LiPos. John says he gets flight times of around 6 minutes with 30% remaining in the batteries. It's modeled after the RAF's WR413 flown by Chris Golds in Germany in the '50s. Our thanks to the father and son videographer team of Pete and Dean Coxon for taking this great footage at the RAF Tibenham Airfield.

VIDEO: https://www.youtube.com/watch?

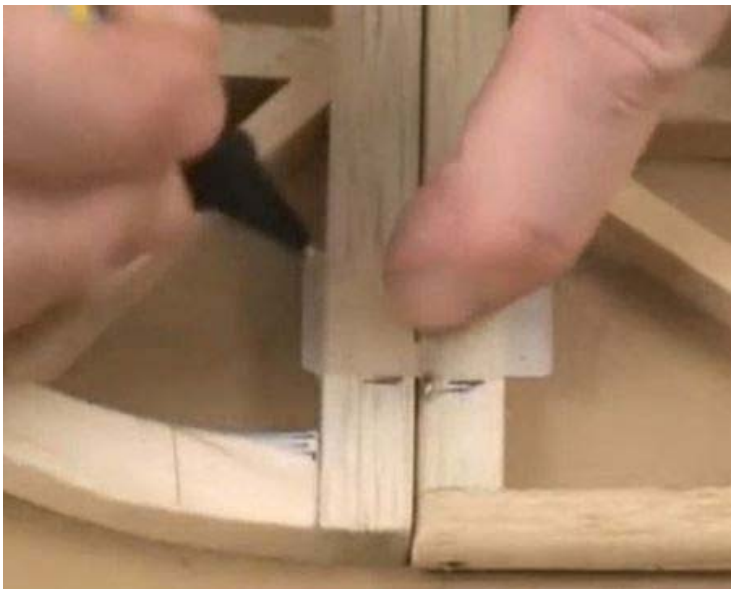
RUSSIAN RACER: YAK-11 "STEADFAST"

We love the sound of this 1/3-scale model of the Unlimited Racer as it makes those high-speed passes! Powered by a 400cc Moki, the 110-inch-span model put on a show at the Oldtimer Meet in Frauenfeld, Switzerland earlier this year. No word on the pilot or builder of this beauty, but they sure did a nice job on the scheme.

VIDEO: https://www.youtube.com/watch?v=u5os9tsi48Y

How To Install Hinges

From the workshop of *MAN* editor Gerry Yarrish, this How To Video demonstrates installing flat Du-Bro control hinges in your RC airplane. With more that 85,000 views, this video is a must watch for anyone who wants to start building his or her own RC airplanes from a kit of from plans.



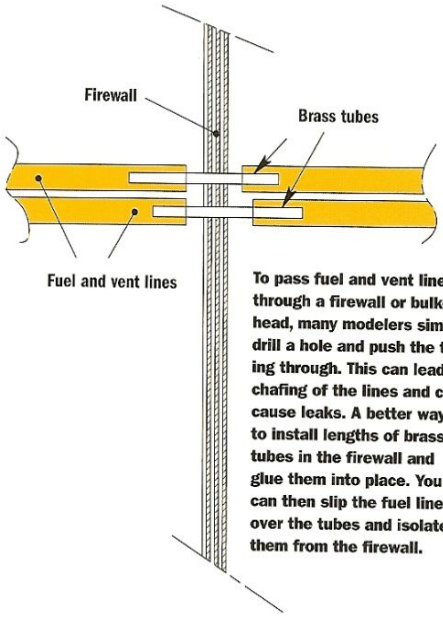
These techniques can also be used to install new hinges next to broken ones to mend a damaged ARF. Gerry uses Du-Bro Hinge Slotting tools and Zap adhesive for this technique.

Since the video was shot, Zap Hinge Glue has been discontinued however, you can use Zap 560 Canopy Glue with similar results.

VIDEO: https://www.youtube.com/watch?v=mzmTG9Zoo68

Fast Fuel Fixes

FIREWALL PASSAGES



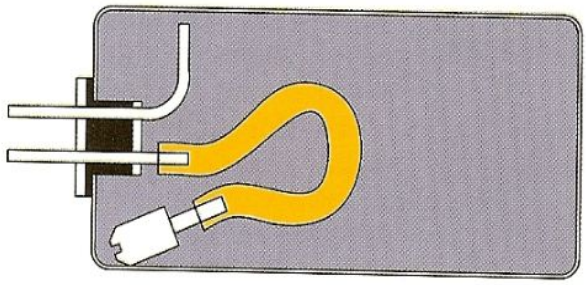
To pass fuel and vent lines through a firewall or bulkhead, many modelers simply drill a hole and push the tubing through. This can lead to chafing of the lines and can cause leaks. A better way is to install lengths of brass tubes in the firewall and glue them into place. You can then slip the fuel lines over the tubes and isolate them from the firewall.

Properly installed, your fuel system will last a very long time and may never need to be changed. In a hard landing, however, some of its parts may be dislodged and stop working. Here are some common fuel-flow problems and fixes.

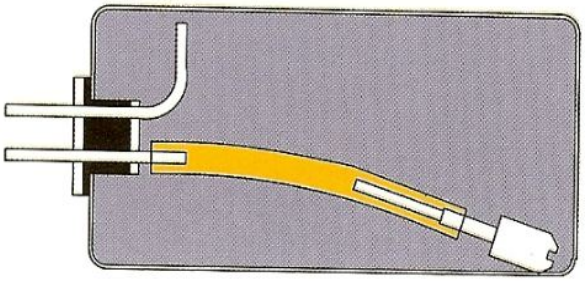
If your engine begins to run lean, check for small pinholes in the fuel-supply line. Check closely wherever here are tight bends in the line, or where it comes ino contact with your model. Leaks commonly occur where the lines pass through the firewall. A better method of installation is to drill small holes in the firewall and use lengths of brass tubes in the holes. You can then slip the fuel lines over the brass tubes to complete the system.

After a hard landing, the flexible pick-up tube and clunk inside the fuel tank may be forced all the way forward. This often goes unnoticed until the next flight, when the tank stops delivering fuel to the engine in a nose-high altitude. To prevent this, solder a short piece of brass tube to your clunk. This decreases the pick-up tube's flexibility but still allows it to draw fuel in normal flying attitudes.

PREVENT YOUR PICK-UP TUBE FROM BENDING



In a sudden stop or a hard landing, the fuel pick-up tube and clunk can be driven forward; this can prevent the tank from delivering all the fuel it contains.



By soldering a short length of brass tube into the end of the clunk, you can stiffen the pick-up line. This helps prevent the line and clunk from being forced to the front of the tank.

If your engine begins to run erratically, chances are that some debris has gotten into the fuel system and is blocking the carb. It usually finds its way into the fuel tank from your fuel jug, and if it blocks the fuel flow, your engine will die. The easiest way to prevent this is with an in-line fuel filter. You install it just before the carb in the supply line. You can also install a filter in your fuel-pump line so you can fill the tank only with filtered fuel. Add a combination fuel clunk/filter and you'll have a triple defense against deadsticks.

SVF Sun Valley Fliers

Workshop Tip – How To Rebuild a Du-Bro Fueling Valve Fitting

Over time, fueling valve fitting like those from Du-Bro can become contaminated with debris even if you use an inline fuel filter. Internally, the fueling valves' O-rings can dry rot and begin to fail over time. Du-Bro even sells a rebuild kit to make the job of restoring your fueling valve to top working condition. Here is a short Workshop video showing how to rebuild you Du-Bro Fuel fitting.

This simple, but very important maintenance task will extend the life and improve your fuel system performance. and this will cause you problems. The rebuild kit can make your gas or glow fueling valve work like new. It is very easy to disassemble the valves and reinstall the new components if you watch this video.

(Above) the Red Filling Valve assembly is for Gasoline fuel systems.

(Above) the Silver Filling Valve assembly is for Glow fuel systems.

Both are very easy to overhaul with the Du-Bro Rebuild kit.
For more information on Du-Bro hobby products, go to: http://hobby.dubro.com/

VIDEO: https://www.youtube.com/watch?v=rCDOs6-sXZQ

Aileron Differential: Why it's so important and how to set it up

For years, depending on the model setup, modelers often used offset servo output arms and bellcranks to achieve differential aileron movement. Today, however, using separate aileron servos and the aileron differential program menu in your computer radio has greatly simplified the task. But before we take a closer look, let's first check out the mechanics of our model during a turn or a roll to understand why aileron differential is so important.

AERODYNAMICS

Typically, most models are set up with equal amounts of elevator (pitch up and down) and rudder (yaw left and right) control surface movements. But when it comes to ailerons, equal amounts of up and down (roll left and right movement), can cause the model to yaw in the wrong direction. Here's why: When the ailerons are at their neutral positions, the lift and drag produced by each wing panel is equal and the model tracks straight ahead. But when a model has ailerons that move in equal amounts both up and down, the amount of drag (and lift) created by the wing panel with the down aileron becomes greater than the one with the up aileron. The panel with the aileron pointing downward moves up because it creates more lift. The opposite panel goes down (less lift) and causes the model to back toward the up aileron. But here's the rub! Because of the increased drag caused by the upward motion, that down aileron wing panel also slows down; this causes the model's nose to yaw in the opposite direction of the roll. The model yaws nose right in a left-hand bank/turn. This condition is known as adverse yaw. Without aileron differential, most airplanes require a certain amount of coordinated rudder to prevent, or at least minimize, adverse yaw while the model is banking through a turn. For sport and scale planes, this can be done manually or with a program mix-however, it won't work in all types of flight conditions.

HIGH-PERFORMANCE PLANES

This adverse yaw thing is also an important consideration while flying aerobatic planes. Aerobatic pilots need to set up their models to react in pure yaw, roll and pitch motions. During a roll (whether it's executed on a horizontal or vertical line), the model must roll axially without its nose yawing or wandering off the straight line of flight. Aileron differential helps keep the model's tracking straight.

YOUR MODEL IS EXPERIENCING ADVERSE YAW IF:

The model skids through turns.
The tail drops during a turn.
The nose swings out of the turn.
It's very difficult to roll your model in a straight line.
Even with high-speed jets and race planes, correcting adverse yaw with aileron differential is much better than relying only on coordinated rudder mixing. If speed is the ultimate goal, then minimizing drag is key. Less rudder deflection equals less drag. Fine-tuning your model for maximum performance is easier if you know what to look for and how to correct it. If you can't use coordinated rudder to correct adverse yaw, then aileron differential is the way to go. Using your radio's programming is the easiest way to get the job done.

HOW TO USE A PROGRAM MENU

> Install dual aileron servos. One connected to the aileron receiver port and the other in the Aux.1 port. Make sure the aileron servo moves in the proper direction.
> Activate the flaperon wing type or, depending on your radio system, the dual aileron function. Install and connect the ailerons and control linkages.
> Start with 30% to 40% differential (down aileron 30 or 40% less than up).
> If differential mix is backwards (more down than up), reverse the servo connections by switching the aileron and Aux. 1 servo leads.
>Adjust the differential percentage after flying the model. Land the model before making adjustments and test fly again.

SVF Sun Valley Fliers

VIDEOS and Websites Links

Click on to view video, website

A Billionaire Just Spent £400 Million Pimping Out A Boeing 747-8i

http://www.viralthread.com/a-billionaire-just-spent-400-million-pimping-out-a-boeing-747-its-ridiculous/

EAA Airventure at Oshkosh 2015 Day 0 7:17
https://www.youtube.com/watch?v=jTMWtsPFR2Y
EAA Airventure at Oshkosh 2015 Day 1 9:48
https://www.youtube.com/watch?v=-QAfjHbANyg
EAA Airventure at Oshkosh 2015 Day 2 9:25
https://www.youtube.com/watch?v=cfOKFScyhzU
EAA Airventure at Oshkosh 2015 Day 3 9:33
https://www.youtube.com/watch?v=qvfzvQCfyGQ
EAA Airventure at Oshkosh 2015 Day 4 7:17
https://www.youtube.com/watch?v=eokl2-GD8qk
EAA Airventure at Oshkosh 2015 Day 5 7:28
https://www.youtube.com/watch?v=NY78aGoyMnw
EAA Airventure at Oshkosh 2015 Day 6 9:36
https://www.youtube.com/watch?v=uUJnXaqUkE8

Rare DH.98 Mosquito at EAA AirVenture Oshkosh 2015 2:03
https://www.youtube.com/watch?v=tP2EwhD15fI&index=9&list=PLVvZnw5UWVu8-z3Zpy1BiBhfaX6UfdT_q
F-35s Arrive at Oshkosh 2:15
https://www.youtube.com/watch?v=CMm-ljuuafY&list=PLVvZnw5UWVu8-z3Zpy1BiBhfaX6UfdT_q&index=13
First Time B-52 Landing at Oshkosh 3:28
https://www.youtube.com/watch?v=CL-JK6HPAuU&index=25&list=PLVvZnw5UWVu8-z3Zpy1BiBhfaX6UfdT_q
Drone over AirVenture 2015 2:47
https://www.youtube.com/watch?v=Nrec1E_nX9U&index=15&list=PLVvZnw5UWVu8-z3Zpy1BiBhfaX6UfdT_q
Drones at EAA AirVenture Oshkosh 2:40
https://www.youtube.com/watch?v=ywMjPa30txg&list=PLVvZnw5UWVu8-z3Zpy1BiBhfaX6UfdT_q&index=21

Home built Submarine 4:28
https://www.youtube.com/watch?v=nRT0e3MavGs

Guy Rides Drone Over Water 1:02
http://m.liveleak.com/view?i=30c_1437673659

Svetlana Kapanina Amazing Cockpit Footage 1:01

https://www.youtube.com/watch?v=1RPkEu0bl_0

SVF Website Buy & Sell items.
http://www.sunvalleyfliers.com/classifieds/classifieds.htm
My thanks to those who passed this info on.

JULY 2015 SVF Birth Day Boys

First name Last name	Member type	Dob
John Boccia	Regular	08/01/1963
Jim Spice	Senior	08/01/1947
Gerald Brown	Senior	08/01/1938
Edward Andres	Senior	08/04/1928
Tony Guyer	Regular	08/04/1956
Frank Moskowitz	*Regular*	*08/05/1954*
Paul DeLawder	Regular	08/07/1958
Sean Marhevka	Junior	08/08/2001
Colin Markwart	Junior	08/11/2003
Jackson Furedy	Regular	08/13/1952
Bill Pearse	Senior	08/14/1941
Joseph Wuestenhoefer	Junior	08/14/2000
Steven Neumann	Regular	08/14/1973
Gary Hedges	Senior	08/16/1943
Richard Hartman	Senior	08/19/1940
James Musser	Senior	08/21/1937
Ronald Thomas	Senior	08/21/1949
Russ Thomas	Regular	08/21/1955
Bob Corley	Senior	08/23/1950
Fredric Greenblott	Junior	08/23/2001
Darrin Jeffries	Regular	08/24/1969
Frank Seminera	Senior	08/25/1941
Jonathan Colner	Senior	08/27/1949
Dan Smith	Regular	08/27/1978
Ray Fulks	Senior	08/30/1947

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J B Bowers, Treasurer
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Open, Safety Officer

Frank M.,
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