



HI-SKY R/C FLYER

December 2006

Volume 35 Issue 12

President: Gene Laughlin
Vice President: Bruce Hoover
AMA Charter Club #851

Treasurer: Ed Anderson
Secretary: David Harrell
www.hiskyrc.com

Meeting:

The December, 2006 meeting will be held at the Activity Building of the First Baptist Church located on the corner of Garfield and Louisiana streets. The meeting will start at 7:00 PM. There will be our election of officers for 2007.

Dues are due:

If you have received your 2007 AMA card, you can also pay your 2007 club dues. Pay them early before the Christmas bills start coming in. It makes it easier on our Treasurer also to get the dues early.

HI SKY R/C Club Minutes: November 07, 2006

Meeting was held at the First Baptist Church Activity Building.

Gene Laughlin called the meeting to order.
There were 18 members present.
The minutes were approved as written.

Field Report: No field report.

Safety Report: AJ Lee reminded everyone to fly safe and watch for snakes.

Activities: No activities scheduled through the end of the year.

Old Business: Gene and other members met with the city assistant manger to discuss the new flying field at the old landfill on FM 307. The city is going to review the issue and determine if the old landfill is part of the old Cole Park or not. This will determine how the club and the city proceed.

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Safety Notes AMA District VIII

By Jim Rice

Safety is mostly about crashes and avoiding them or insuring they occur in safe places. There is a lot more about safety but for this safety note, I want to talk about crashes.

When it comes to Safety, it is always first and your airplane is a long way back in second. Try your best to save the airplane and keep it in a safe area but put it in the ground, trees or water before you endanger someone (including yourself) or their property.

As I said before, there are about 1,000 things that can kill an airplane and I have 750 covered. But that doesn't mean that I am rolling over and letting it happen to me. Every time I crash or am present when a crash occurs, I try to do a thorough accident investigation (post mortem if you will) to find out what happened so I (we) can avoid recurrence.

I would say in my experience and observation, well over 70% of all RC aircraft crashes are caused by the pilot not the airplane or the radio failing. On the other hand, less than 50% of the crashes are acknowledged to be dumb thumbs. (careful, investigation shows that 43.2% of all statistics are made up...LOL.) So the 1st thing you have to do in your investigation is determine if it was you or not. You don't have to tell me or anyone else the truth but if you want to stop the next crash, be honest with yourself about this one. You can tell me you don't know what happened when you know you pulled when you should have pushed. I may know the truth but I am not the one who has to stop your next crash...!..you are! So if you are the culprit, relive the incident and determine what exactly was going on and what you did to get into trouble or to make trouble worse. Once you figure out what you did, get on a simulator and try to create the same scenario and do it until you survive repeatedly. If you don't have a simulator, find a friend with one or go to the field and get to a safe altitude then go higher before you try to recreate.

Now if you have been honest and it really wasn't you, then gather all of the pieces you can and see what or who the real culprit is. You will want to inspect glue joints, wires and connectors, switches, batteries, receivers etc. If you can put it all together at the field and try it, other people will help you trouble shoot and think through it and it will be fresh on your mind--careful it might be too fresh. (that is why I don't wear a neck strap with my radio. When I get mad I can't throw it as far..LOL.) The last crash I helped investigate was a result of a previous crash that had not been completely repaired. In

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From the Robbins Nest:

By Dennis Robbins

PUSHRODS FOR ELECTRICS:

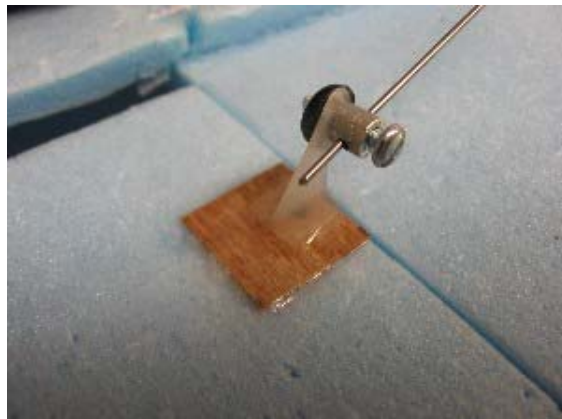
If you have ever assembled an electric aircraft, one thing you have to have is a way to connect the servo to the control surface. All of us know this is accomplished with pushrods, but did you know that there are numerous types of pushrod material you can use? I personally have used three different components for pushrod assembly, and will share some techniques used for each.

WIRE PUSHRODS:

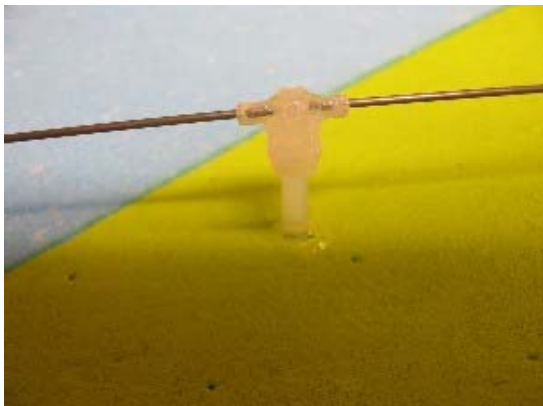
The one most of are familiar with is good ole wire. I fly planes that usually weigh less than 5 oz., so the wire I use is .032". Other popular sizes include, .039", .047", and .055". You will have to decide which size is best for the model you will be flying. I usually use a Z bend in one end, and an EZ connector at the other. The EZ connector allows easy adjustment of the control surface if needed. When using wire pushrods, you will want to support the wire at least once or twice to prevent the wire from flexing. Anything can be used for the standoff, but I learned this handy trick from other modelers. We build the standoff with a small piece of tubing, and a small tie wrap. A drop of CA glue will hold the tubing in the tie wrap. To mount the standoff to the plane, I just push the tie wrap through the wing, and glue in place with foam safe CA.



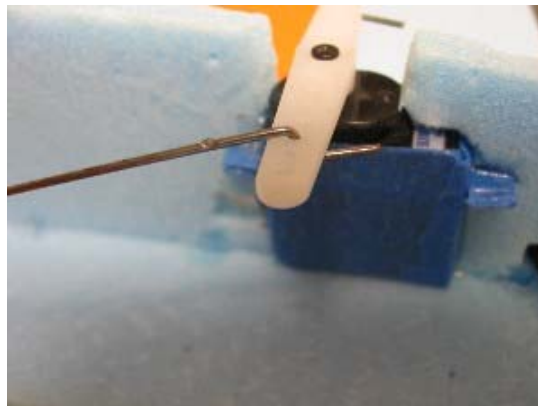
Complete wire setup



EZ connector with supported control horn



Tie wrap standoff



Common Z-bend

CARBON FIBER ROD PUSHRODS:

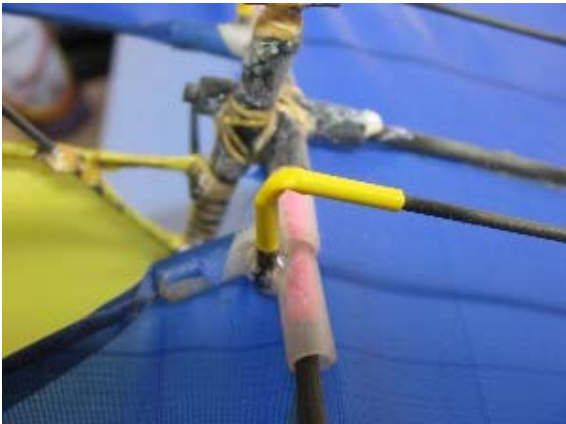
Another very popular type of pushrod is constructed using carbon fiber rods. Usually a small piece of wire is attached at each end to allow the rod to be connected to the servo and control surface. There are lots of ways to attach the wire to the carbon rod. Some folks CA the wire to the rod, and wrap it with Kevlar thread, and then soak the string with CA. Another method, which I have used, is to CA the wire to the rod, and then shrink a piece of heat shrink tubing over the wire for additional support. A small drop of CA glue is added at each end of the heat shrink for extra support. Heat shrink tubing can also be used to attach carbon rods to the control surface. I sometimes use carbon rods for the control horns on the control surface, and this method works well in this application. These methods are easier to understand after seeing the photos below.



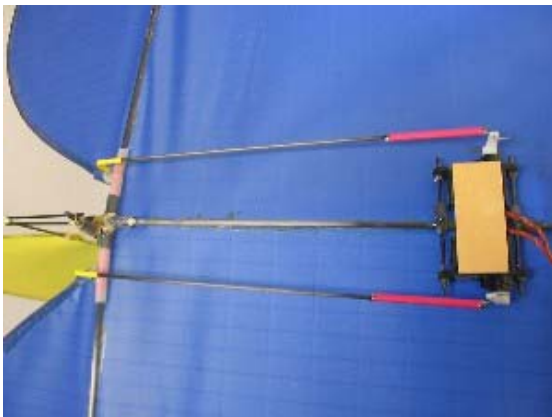
Wire attached to the carbon rod. A Z-bend is used to attach to the control surface.



The wire is glued to the carbon rod, and heat shrink is over the wire. A drop of CA is placed at each end of the heat shrink.



Heat shrink tubing is used to attach the carbon rod directly to a carbon rod control horn.



This photo shows the complete carbon rod setup, with a Z-bend on one end, and heat shrink used on the other.

PULL/PULL SETUPS:

The last method for pushrods is actually not a pushrod at all. A very strong string, such as Kevlar or fishing string, is used to actually pull the control surface. The system is called pull/pull for a reason. If we consider a control surface, such as the elevator, the string pulls for up, and pulls for down. Photos will help with the explanation. Most folks don't like pull/pull setups, because they are non conventional, but they do have several advantages. Weight is definitely a primary consideration. If the weight of string is compared to wire, or carbon fiber, it becomes obvious why this is an excellent choice. Another reason to use pull/pull is because there cannot be any slop in the string, which offers a very positive control movement. Many times the string is glued to the control horn, (which is most often a small piece of carbon fiber rod), so there are no connectors to mess with.



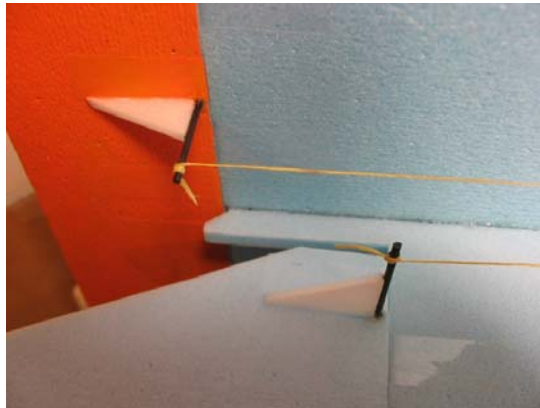
Complete pull/pull setup. The servo arm is above and below the wing, allowing pull for up and down.



Servo setup showing string attachment to the control horns.



Kevlar string is just glued to the carbon rod.



Another view showing Kevlar string attached to the carbon rod, which has been supported with foam.

Cap Rock has credited the club's electric bill for a misread meter reading.

New Business: Officers for the new year were nominated at the November club meeting. These Officers will be voted on at the December meeting.

For President - Bruce Hoover
For Vice President - Tommy Thomas
For Treasurer - Ed Anderson
For Secretary - Ralph Gillette

Show and Tell: Jim Ruple brought a Sig. 4 Star 40 ARF with a GMS .48 and Airtronics radio. Jim also brought a can of Honda Spray Cleaner and Polish. Jim says it is great for removing glow fuel residue for the plane.

Dennis Robbins brought JAR number 6. This one weights 4.3 oz and has a pull/pull setup for the control surfaces.

Gene Laughlin gave a demo on how to cover a wing with monokote. Using a wing donated by Dennis Robbins, Gene begins by covering each wing tip and then the remainder of the wing. Gene showed us several different tools and techniques that he uses in the process.

Club Raffle: Dennis Robbins provided two items to raffle at the November meeting. Jim Ruple won the GWS 4RPII receiver. Mike McLennan won the Mini Fat 3D blue foam kit with carbon fiber stiffeners and other hardware items.

Picked Up Passing by:

Thanksgiving is over for another year. So are "Black Friday" and the associated sales. I took a look at the mall and decided I didn't want to get into that mass of people. The parking lot was full and there seemed to be no way to get in or out.

Thanksgiving is a time for being thankful. I am thankful for many things. Among them, I am thankful for the articles written by Dennis Robbins and Bill Coombes. I am thankful for Jon Wheeler who makes the distribution of this newsletter possible by converting my write-up into a PDF file so everyone may download the newsletter on their computer. Last, I am thankful for all my friends in the HI-Sky R/C Club.

There has been a lot of activity at the field lately. You almost have to reserve a parking space on Saturdays. That is a great situation for us (we may need someone to call and reserve a place). I always enjoy the opportunity to visit with everyone there.

Please remember that we have several members that use the same channel, so please continue to be considerate and don't monopolize a channel if others have that same frequency.

Dennis Robbins' article on "Painting Foam Models" was published in the AMA National Newsletter for November, 2006. You got to read it first in our newsletter. I know there are some great writers in this club, we just need to spark an interest in their writing.

Jim Ruple mentioned a spray for cleaning fuel residue from models at the last meeting. Another possibility is "baby wipes". They contain some type of detergent that will remove the oil residue and the lanolin helps to polish the plastic film. These are softer than a lot of paper towels and will not scratch the surface. They even work great if they dry out for some reason. Spray on your regular cleaner and use the baby wipes to remove it and the fuel residue.

Tips & Tricks:

Marking Dark Monokote

From Hanger Talk; Orange City, Iowa

Putting any kind of decent marks on Monokote is difficult, especially if the Monokote is dark in color. This becomes a hassle for you when trying to accurately place control horns or mount a switch to a surface that's already covered.

Try putting down a piece of masking tape in the approximate location then line up the horn or switch plate and make your marks on the tape. The marks are visible and you can cut or drill right through the tape. You can pull the tape off easily by pulling it sideways over itself – don't pull straight up or you may lift off the covering.

After Run Oil

Do you use an after run oil in your favorite engine before you pack up and go home? The nitro methane and alcohol leave a residue that combined with water forms an acid that can eat your engine's bearings and other parts.

One type you can use is available at the hobby shop. I use Marvel Mystery Oil for an after run oil. Marvel also makes an air tool oil that is good. This is probably better because it is designed to be used in air tools. Air tools have problems with water condensing inside and the air tool oil is to fight that corrosion. Some gun oils are also good. Do not use oil that contains Silicone. Silicone will coat the wire in the glow plug and you will have to replace glow plugs more often. If you don't use an after run oil, at least run the engine to get the last drop of fuel burned and out the exhaust.

Drilling engine mounts:

I use a 3/32 inch drill that is 12 inches long that is inside a 1/8 inch diameter brass or copper tube that is 4 inches long. I put this assembly inside another brass or copper tube that is 5/32 inch diameter that is about 3 inches long. When I am ready to drill a set of holes for tapping, I clamp the engine on the motor mount at the desired location. Next I use the assembly I described to drill the engine mounting holes. This works great for engines up to 0.70. The tubing keeps the drill centered in the engine hole and also straight preventing off center holes. I can follow up using the correct tap drill now in these holes without worry of being off center or at an angle. For larger engines you may want to use larger tubing and drill bit.

Silence is the sleep that nourishes wisdom. Francis Bacon

Spring makes everything young again - - - except man.

CALENDAR OF EVENTS

We have to set out dates for our events for 2007.

For Sale:

Top Flite Spitfire kit.... 0.60 size... Complete NIB \$75.00
 Top Flite Airacorba kit 0.60 size with cockpit kit. \$75.00
 World Models Clipped wing Cub (electric power) ARF new in the box. \$60.00
 Horizon Hobbies PT-19 (electric power) ARF new in the Box. Almost ready to go. \$60.00
 Contact Bill Coombes at 689-8359 or email at:
Snj24@earthlink.net

Hitec CG-335 NiCad field charger (4 to 24 cell packs) \$40.00
 This is a great field charger for NiCad's only.
 Goldberg Cub with 2 JR servos in wing. Ready to fly. Just Add your radio and engine. \$120.00
 Contact Henry Smith at 570-6262 or hksmith35@prodigy.net

GPS and Albert Einstein

By Russell Knetzger M.A.R.K.S. Remarks, Milwaukee WI

Some aero modelers own hand-held GPS meters (global positioning systems) for their boats or full-scale airplanes. In remote areas they may even use them in their cars or for remote-area backpacking. Did you know the GPS technology relies upon the theories of Albert Einstein, the great physicist of the 1900s?

Last year, 2005, was the 100th anniversary of the publication written by Albert Einstein at age 26, of four astonishing technical papers, all in one miracle year, any one of which would have catapulted him to the stardom in physics that he achieved and still holds. Prior to Einstein, Sir Isaac Newton was the most revered physicist.

In his first 1905 paper, Einstein theorized why the "photo-electric effect" occurs when light hits metal—basically that photons of light are knocking surface metal electrons out of their orbits, causing an electrical current to flow. His second paper went further into the makeup of the atom. His third paper was the whopper: the contention in his theory of "special relativity" that produced the fourth dimension—time—along with length, width, height, and that nothing can move faster than the speed of light at 186,282 miles per second.

Einstein's fourth paper was almost as big a whopper: the famous equation $E=mc^2$, that energy and mass are interchangeable, where e-energy released is m-mass times c-the speed of light, squared. The formula later led to the atomic bomb. Ten years went by and in 1915 he produced his fifth major paper: "General Theory of Relativity." Both the general and special theories hold that time is not a constant.

To celebrate these remarkable insights, the 2006 edition of the World Book Encyclopedia supplement contains this quote by Alfred J. Smuskiewicz, a freelance writer in science and medicine: "Almost 100 years later [of the 1905 special relativity and the 1915 general relativity theories], scientists used both theories to construct the global positioning system (GPS). This worldwide network of satellites transmits radio signals to receivers around the globe. By measuring the transit times for these signals—which travel at the speed of light—GPS allows people to identify their precise position anywhere on earth.

However, due to the effects of relativity, the clocks on the satellites tick at a different rate than clocks in the receivers. Einstein's special theory of relativity showed that moving clocks—such as those on satellites—tick at a slower rate than clocks at rest. His general theory of relativity argued that clocks closer to a massive object—like the receivers on earth—tick at a slower rate than clocks farther away.

"Because the GPS computers need extremely accurate transit times to measure precise distances, engineers designed the GPS satellites to compensate both for special and general relativity."

flight the wing suffered a failure at an old fracture that had not been noticed or repaired.

If anything was observed departing the aircraft before the crash, try to figure out what it was and locate it if you can. It may well be the cause and it would be good to inspect it to discover the reason for its failure.

Stay on the case until you know what happened or you just can't explain it. If you figure out what caused it your number of covered items may go above my 750. If you share the information, everyone's number of covered items will improve.

Fly Safe and Have Fun!.....Safe Aeromodeling is No accidEnt (SANE)

If you have comments or input for me, please direct it to: JorLRice@aol.com

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