

# Come Fly With Us Buck Remote Control Club

## NEW PRESIDENT

Our current president Bob Rieker has resigned. He will be moving to Florida. Good luck Bob!

Ralph Heagy wishes to take over as President if the members are so inclined. He was President once before (2000) so he knows the ropes. ☺ Official voting will take place at our next meeting!

## NEXT MEETING: JUNE 4

The next meeting will be held Tuesday, June 4<sup>th</sup> at 7:00 p.m.

Address:

Ralph Heagy's home

18 Kimberly Ct

Lancaster PA 17602 (located in Lampeter)

If you need detailed directions, call 717-464-9293. ☺

## STATUS OF THE FIELD

As some of you may have noticed, Musser's Grocery is making major renovations to their property. Last I heard, they will be expanding their building and installing a new, greatly expanded Hobby Shop! This is great news not only for us, but all of the local clubs in Pennsylvania, Delaware, and Maryland.

Unfortunately, the construction crews have blocked our access to the flying site and drilled "perking holes" in the field. We had to cancel Fun Fly 1 due to this sudden disruption. I don't know if this is a temporary situation, but hopefully we'll have more details about the status of our field, how long the construction will last, et cetera to share at the June 4 meeting.

President: Bob Reiker 717-625-2749  
Secretary: ElectricTroy@yahoo.com  
Field Marshall: John Gentile 717-399-3205

V. President: Everett Kreider 717-786-1953  
Treasurer: Joe Robinson 717-548-4020  
Safety Officer: Rich Gentile 717-806-2911

## FLIGHT PLANNING

How many of us, especially newcomers, give any thought to planning our next flight? How many of us just take off, fly around for a few minutes, then land? What do we learn about our abilities or the airplane's capabilities during those types of flights? Many of us are so anxious to get "stick time" that we don't take the time to think much about the flight beforehand. I imagine that many of us make a lot of flights without a plan. I know I am guilty of wanting to fly, and often I don't give much thought to the flight before getting in the air. Of course, sometimes it is very relaxing to take up our favorite airplane and just fly around in circles, do a few loops and rolls, then land.

However, if you are flying a new airplane or are trying to learn a new maneuver, it is a good idea to plan your flight before starting the engine. Beginning pilots, especially, should plan their flights with their instructors. The instructors should go over the planned maneuvers with the trainee and answer any questions they may have before starting the engine. If you are trying out a new airplane, you may want to test it at various speeds or check its stall characteristics.

Lately, I have learned to plan my flights, especially when I want to try out a new maneuver. I will fly the maneuvers in my mind a few times before I get the airplane ready to fly. During those occasions, I have found that I concentrate more and that I learn more than if I had not prepared a plan. I am also more prepared to correct mistakes that occur.

The flight plan does not have to be as elaborate or complicated as for a pattern or aerobatic contest. It can be as simple as practicing left and right turns, taking off, lining up with the runway for touch-and-goes or landing. Instructors and trainees can discuss control inputs required for the various maneuvers. Experienced pilots can discuss with other pilots what to expect and what control inputs may be required for some of the aerobatic maneuvers.

Whatever reason you have for making the next flight, you should take a few minutes to plan what you are going to do when your bird is in the air. I think it will help make you a better flier because you will tend to concentrate more on the control inputs and the airplane's reaction to those inputs. It will also help to keep you "ahead" of the airplane.

That's all for this month. Have fun and BE SAFE!!

from The Skyhawk

Middle Point RC Flyers, Doug Hopper, editor, Nashville TN

## TO REPAIR OR NOT TO REPAIR? (BY PHIL BAYLY)

**Concept:** All of us have crashed our share of model airplanes. Following any crash, the immediate question that follows is whether or not to repair the monster that, at that moment, we wish we would never see again. Nothing is more ugly, and painful than seeing a remaining bunch of balsa parts that have just littered up the place and is beyond recognition. You may also have your pride overrun with embarrassment and negative emotions playing their part in the scene. As a diversion to your frustrations, your next thought may be to determine what caused the accident. But alas, it is an exercise of futility to find a way to exonerate ourselves from the blame since we did it through building or flying error.

Following this evaluation, most will quickly come to the conclusion to "junk it all" after salvaging the engine and hardware for the next airplane that will be "better than ever." We've all been there and done that! At least I know I have. I also have observed too many flyers as they rushed to judgement and totally junked their crashed airplanes right on the spot, whereas it would have taken them only a few hours to completely repair the damage. All that said, let's look at some of the logic that usually goes on here.

**Logic and Process:** First, we know our planes are originally built from a bunch of small parts anyway. Therefore, we can easily see that a crash simply results in a bunch of smaller parts than with what we originally started to put together again or replace. That makes it sound a lot less tragic, doesn't it? We also know that we spent a lot of time developing our building skills to be able to fit an airplane's parts together exactly right without any gaps in the joints. Beyond it looking better, it means those well fit glue joints will bond together with greater strength, especially if CyA glues are used.

Now let's look at some facts. With a typical crash, most breaks in the wood should occur at places other than at its joints, unless the joints are poorly fit. More on that later, but otherwise, we would only need to glue the separated joint(s) again for an easy repair. Have you ever noticed how perfectly those broken pieces of wood fit back together again? Using our best craftsmanship skills, we could never achieve a joint fit like they will fit together. It is perfect! All of the separated wood fiber ends fit snugly into every mating crevice. Therefore, the first principle to accept for our repair consideration is: following any crash, gather up all of the parts. This is not to just be an good guy and keep the flying field clear of debris. It is also to have a basis for "crash analysis" and to retain all options for repair.

There are two things that may be lost during your repair. One is a "new looking appearance" and the other is that the center of gravity (CG) usually moves aft a bit from the extra glue and wood being added in the process. Awareness of both of these typical occurrences can usually, minimize the amount of each. So, rule two is, get everything out of sight until you are cool again and can better assess the repair option.

Now let's deal with "crash assessment." I examine the details at every crash to learn something more about construction. That includes other people's crashes, too. The question to always ask is why did the break occur where it did instead of someplace else, or maybe not at all? Following enough crash inquiries, you may find a pattern emerging. You may begin to better realize where you had excess wood in your

construction as well as where more or harder wood was needed. Gussets, hardwood, grain lines, balsa density, and glue joints are just some of the considerations that must be taken if the “next one” on the horizon is to be better. This introduces the third principle: assess the damage with an eye toward improved design and construction layout, as well as to complete the repair.

**The Repair Process:** Now let's look at the repair itself since there are definitely some techniques and approaches that can help accomplish the repair of these crashed critters.

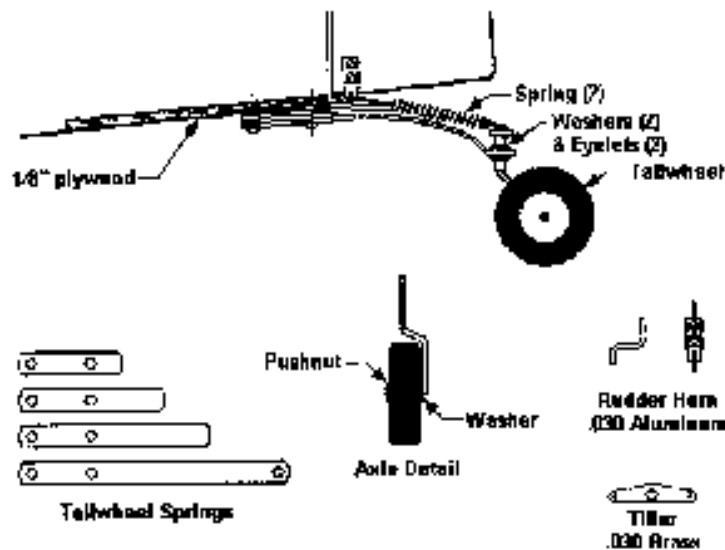
- 1) Following the “crash analysis” we should know how and if each part fits back together in its original location.
- 2) Plan a schedule of events that must occur to get everything back together, including the parts or areas that will need replacement or additions, such as doublers.
- 3) Pay primary attention to any repair required on load bearing items such as spars or motor mounts. They may require replacement if they broke off squarely. Doublers are suspect for final strength but don't underestimate the strength of a good doubler, or progressive tripler. Consider 1/64-inch ply for the first layer.
- 4) Minimize the tail heaviness that typically occurs from the extra glue and wood that is added.
- 5) Progress from the inside outward.
- 6) Keep the wing straight with jig studs projected upward from a flat building board.
- 7) Wing rib damage (crunched out areas) can be replaced by overlapping and gluing sheet balsa to the remaining rib parts as necessary, front and back and contoured to streamline the covering surface after it's in place.
- 8) Broken wing spars need doublers for necessary strength. I prefer thinner doublers on all four sides to box in the damage and to ensure strength in all dimensions.
- 9) Fuselage breakage repair is easily done with 1/64-inch ply over the entire broken area with good overlap. There may be a minor bump on the surface that will hardly show through filler and painting.
- 10) Motor mount breakage is the most serious. Replace if possible. If not, glue in broken mount part(s) and overlap and glue them and the remaining mount, top and bottom with 1/8-inch ply. Go through the firewall if necessary. Then re-drill the mount holes. I also add bolt(s) through the mount stud to not rely solely upon the glue. This modification alters the thrust line by the ply thickness and may also require a tank adjustment if the engine is vertically mounted.
- 11) Following all wood repairs, you may recover and paint or MonoKote® as necessary. A lot of strength results from the covering, so do not skimp here. Double covering is always an excellent option for additional strength.

**Conclusions:** Repairs are easier to accomplish than you first think. If you are unsure about a crashed airplane, begin with the hardest part. If it goes okay, you may continue with confidence. If not, this is the time to concede, not before. Good luck on your new adventure.

from Tangled Lines

Tampa Bay Line Flyers Control Line Model Airplane Club, Phil Bayly, editor, Tampa Bay FL

## BUCK CLUB FLYER: "WE'RE PLANE CRAZY"



## AN EASY WAY TO MAKE A TAIL WHEEL

Tail wheel assemblies are probably the most neglected part of a model, especially scale models. Many hours go into construction of a model then a plastic tail wheel bracket is used to mount the tail wheel. Often, the attachment method results in loads being placed on the rudder during landing. This can result in damage to the rudder. A scale-like leaf spring tail wheel assembly can be constructed out of readily available materials in a very short time.

The materials and construction shown here are for a .40-size model but can easily be adapted to any size model. The larger the model is, the more important the tail wheel assembly becomes. A little ingenuity goes a long way in adapting this design. The skills required to construct this tail wheel are well within the realm of the average modeler.

Construction begins with selecting materials that suit the size of the model. In the case of the tail wheel for a .40-size model, all the materials can be found in most shops. The leaf springs are made from a tang of a leaf rake. This material is stiff enough to make a good spring, yet soft enough to be drilled. The eyelets and washers came from excess servo parts. The aluminum, brass, and wire are materials left over from other projects. The tiller springs are from old ball point pens.

The tail wheel caster assembly is bent to shape according to the drawing based on the size of the tail wheel being used. In this case, 3/32-inch music wire is used with a 1-inch tail wheel. The wire is bent to clear the tail wheel with a minimum of clearance. The upper stem of the caster is left long and cut off after final soldering. Acid core solder is used for all assembly. A washer is

soldered to the axle. An eyelet is placed over the stem and soldered then a washer is soldered to the flange of the eyelet.

The length of the main (longest) leaf spring must be determined first. A cardboard template can be cut 1/4 inch x 6 inches and held in place to determine the location of the tail wheel. The main spring is cut with about 1/2-inch extra which will be removed after final adjustments are made. The curve can be bent into the main spring with the end bent so that it is approximately parallel with the ground when installed. The other springs are cut progressively shorter. The lengths are not critical.

After all of the springs are bent to mating contours, they are clamped together and two 1/16-inch pilot holes are drilled for mounting holes. The springs can be separated and each hole drilled out with a 3/32-inch drill. The holes should be slightly larger than the screws that are to be used for mounting. A 3/32-inch hole is drilled in the main spring for the caster assembly.

The tiller is made of .030-inch brass so that it can be soldered to the tail wheel caster. The rudder horns are made of .030-inch aluminum. The shape and size of the tiller and rudder horns are dependent on the model. The tiller is cut to shape and 1/16-inch holes are drilled in the ends and a 3/32-inch hole is drilled in the center. The rudder horns are bent to shape and a 1/16-inch hole is drilled in the outer leg and two 3/32-inch holes are drilled in the inner leg.

The tail wheel should be assembled to the model and test fitted before the final assembly. The caster assembly is placed through the hole in the main spring. A washer is placed on the stem of the caster onto the top of the main spring, then an eyelet then the tiller. The caster can be turned upside down with the stem in a vise and the tiller on the top of the vise. There should be no slack in the components at this point. Finally, the tiller, the eyelet, and the washer are soldered by allowing the solder to wick between the parts. When this is complete, the assembly should be painted to match the model.

Now the components can be assembled to the model as shown in the diagram. The tiller springs can be stretched to achieve the right amount of tension. The tail wheel is installed on the caster and a pushnut is pressed on. The excess length of the axle and the stem can be trimmed off. The flat of the main spring should be bent so that it is parallel with the ground and the excess trimmed off. This tail wheel assembly looks good and it is functional. The weight that is added by this type of tail wheel is surprisingly low. The assembly is functionally far superior to plastic tail wheel assemblies and will outlast almost anything that is commercially available.

from the Shawnee Mission Radio Control Club via Contact  
First State RC Club, Tim Mihalski, editor, Hockessin DE

## **ELECTRIC, ELECTRIC (BY LARRY SRIBNICK)**

Should you ever discharge a pack all the way down?

The short answer is... DON'T! Now for the why.

When you connect a pack to a charger, you connect the plus positive, from the charger to the plus positive, of the pack. If you run a pack all the way down and one of the cells reaches zero before the rest of the cells in the pack (and it will most of the time), how is it connected in the circuit? It's connected plus to minus because the cells are wired in series in the pack. The result is that the rest of the cells in the pack will now start to charge the zero cell backwards because it's connected plus to minus rather than plus to plus as it should be for charging. The end result is that you reverse the polarity of that one poor cell and ruin it.

Now, this can't happen if you just put a pack on the shelf and let it self-discharge over a long period of time because there's no complete circuit. The pack isn't plugged into anything.

Likewise, it can't happen to a single cell that you run all the way down because it isn't the running down to zero that does the damage. It's the remaining cells in a multi-cell pack that turn into a backwards charger if one cell is run all the way down that does the damage.

I've been telling people this for 20 years but I still see people running their packs down after every flight. I've given up trying to explain it to them because the attitude usually is "Everyone else is doing it." I was happy to see that Bob Kopski in his Model Aviation column a few months ago told people that he finally came to the conclusion that you shouldn't run a pack down after flying.

When you're done flying, let the pack cool off until it's just barely warm to the touch and then either put it back on the charger or go home.

from SR Battery Tech Notes via The Altimeter

Clarksburg Model Aviation Club, Richard Rader, editor, Bridgeport WV

## **AUTO ROTATIONS (BY MIKE ZELLARS)**

I have been getting a lot of questions about auto rotations lately and how they are performed on model helicopters. As many of you know I typically land my helicopter every time with an auto rotation, some for practice for the real thing but mostly because it is fun. An auto rotation is where a helicopter is brought safely to ground from any altitude without power.

There is one key element to an auto rotation and that is head speed. No head speed as you approach ground equals no helicopter afterwards. Since the engine is what typically determines head speed, how on earth do we keep head speed after shutting the engine back to idle or off? Well it all has to do with pitch of the blades and the weight of the helicopter. When a helicopter is flying upright, there is always some positive pitch in the blades and the helicopter needs engine power to maintain that positive pitch.

So what we do to maintain head speed is use the weight of the helicopter along with negative pitch. Basically what happens is I will shut the engine down and then immediately feed in between four to seven degrees of negative pitch. The helicopter starts falling and the air comes up through blades. Because I have negative pitch, this air naturally keeps head speed up and sometimes increases it depending on how fast I let it plummet. Now at about 10 to 20 feet from the ground, I start feeding back in positive pitch which slows the helicopter up and I keep feeding in pitch until the helicopter comes to a stop just a little above ground. I then feed back a little negative to set the helicopter down. To say the least, it has a lot to do with timing. If you feed in positive too soon, the helicopter stops too soon. This is bad. After you do it a few times, you start getting the feel and it then becomes a natural and fun maneuver.

Well I hope this explained the art of autos. Until next month, be kind and good! See you at the field.

from Propwash

Imperial RC Club, John Burdin, editor, Lakeland FL

## **RULES OF LIFE**

There are two rules of life.

1. Never tell people everything you know.

## **A BUM JOKE**

A bum asked a man on the street for \$2.00.

“Will you buy booze?” the man asks, to which the bum replies, “No.”

“Will you gamble it away?” Once again the bum replies, “No.”

“Will you spend it on model airplane things?” Once again the bum replies, “No, I don’t fly model airplanes.”

Then the man asks, “Will you come home with me so my wife can see what happens to a man who doesn’t drink, gamble, or fly model airplanes?”

## **BUCK CLUB FLYER: "WE'RE PLANE CRAZY"**

### **DREAMS OF FLIGHT (BY DON SIRAVO)**

The dream of flight for most of us starts at a young age. Perhaps it's after seeing our first airplane soaring across the sky, followed closely by a warm summer day driving with our family, and sticking our hands out of the window pretending our hand is an airplane, we its pilot. After that I'm sure the development of our dream was different for each of us. My dream had taken flight in the form of a gift from a loved one. The year was 1991. The hobby shop dealer was a member of the Arvada Associated Modelers (AAM). He said it was a fine club and that it's best to join such a group to learn good flying skills. I had no idea of how this simple dream would take flight, and for the children at the Easter Seals Handicamp in Empire Colorado it has become a dream come true.

Around 1989 a few of our original members had gotten in touch with the Easter Seals camp with the idea. They thought it would be fun to share the hobby with some of the kids. Little did they know the impact this simple act of kindness would have on this small model airplane club in Arvada CO. It started small, as many dreams do. Our club has very little monetary resources so the club members would arrange with the Handicamp to pick up a few of the campers for a day of fun flying model airplanes. The camp would have a sort of contest to decide who would get to go that day. It didn't take long to decide that it was unfair to neglect the others left behind.

The members wholeheartedly agreed. During the first year or so we used our vehicles to transport the kids. This would be quite a production (remember these kids are handicapped, some severely). Then came the moment all of the campers looked forward to the most. Each camper would be taken to a staging place inside the pit area to wait their turn to fly—yes fly!—one of the many Kadet Seniors on a buddy box. They would each get between three and five minutes of loops and “oh my goshes.”

It goes without saying that this is the part we love the most: watching the smiles on the kid's faces. As we all know when we fly one of our models it's like being inside the plane itself. We are lifted like a bird. The same would be so for our new friends. There was one moment that caught all of our breaths when one of our club members was blessed with this young boy who happened to be studying aviation. He wanted to fly so very badly; however, he never would be given this chance because he was paralyzed from the neck down. He operated his wheel chair by blowing through a tube.

His instructor Jim, who has many years of flying and a heart as big as Colorado, got an idea. He asked this young student how he controls his wheel chair. The young man explained the blow

tube. Jim asked the young man's buddy to get a pencil and fastened it to the right stick of the transmitter. He held the radio close enough for the young man to place his mouth on the control stick.

The young man flew the airplane with very little help from his instructor, who by this time could not see the airplane with the tears of gratitude filling his eyes while a look of joy covered this young pilot's face. What made this moment extra special was that our young pilot's very proud father was standing right next to him! Dad simply said, "I have never seen my son so happy. Thank you, all!"

The list of fun and memorable things that take place during this event continue to go on and on, however the thing that caught us all by surprise was the impact it would have on our little club and its members who continue to participate in this very special day.

Fellow fliers and new members heard about this and joined our club because of this type of activity that we as a club involve ourselves in. For many of us, these special kids touched us in ways that is difficult to describe. We take many things for granted. Oh, I don't think we do so consciously, and certainly everyone has his or her own crosses to bear. Though, I believe that I speak for many club members by saying we would not trade this experience for anything.

Arvada Associated Modelers, Arvada CO

## **NATIONAL SYMBOL**

The flag is the symbol of our national unity, our national endeavor, our national aspiration.

The flag tells of the struggle for independence, of union preserved, of liberty and union one and inseparable, of the sacrifices of brave men and women to whom the ideals and honor of this nation have been dearer than life. It means America first; it means an undivided allegiance.

The flag means America united, strong and efficient, equal to her tasks.

The flag means that you cannot be saved by the valor and devotion of your ancestors, that to each generation comes its patriotic duty; and that upon your willingness to sacrifice and endure as those before you have sacrificed and endured rests the national hope.

The flag speaks of equal rights, of the inspiration of free institutions exemplified and vindicated, of liberty under law intelligently conceived and impartially administered. There is not a thread in it but scorns self-indulgence, weakness, and rapacity. It is eloquent of our community interests, outweighing all divergences of opinion, and of our common destiny.

<http://www.usflag.org/>