



ACADEMY OF MODEL AERONAUTICS CHARTERED CLUB #1255

# SERVO CHATTER

A PUBLICATION OF:

ANOKA COUNTY RADIO CONTROL CLUB, INC.

FEBRUARY 2013

**THE MEETING WILL BE THURSDAY, FEBRUARY 21, AT RIVERWIND!!**

## PRESIDENT'S CHATTER

Yes it is February and it has felt like long winter so far. The reason I say that is because I got to thinking about when our first fun fly is. I had to stop and think. Yup, way to many weeks away. Then the daydream of a nice spring morning, light breeze, the birds chirping, the smell of nitro with Grandpa showing up looking for his first win of the season. Then reality set in when my wife asked if was going to plug my truck in. I said why? It's going to be a -30 degree wind chill in the morning. Then you guessed it. the bubble was popped. My dream turned to nightmare. Another 8 weeks until our first fun fly. There's lots of time to get projects done, started if you work fast. Till next month.

Andy Thunstrom

## FROM THE VEEP

Hi Everyone!

Not much going on for flying and it's a good thing too as I've been busy moving into my new house! Unfortunately, indoor flying at the Nation Sports Center has been cancelled. Due to low attendance sports center could only afford to allow 1 hour of time for flying. We felt that the cost and the short flying time wouldn't improve attendance so we decided to cancel any further dates and wouldn't try to schedule anymore.

See you all at the meeting!

John Sager

ACRC Forum - <http://anoka-rc.com/forums>

## ACRC MINUTES

January 17, 2013

Meeting Called to Order at 7:05 PM.

**Treasurer:** - December Financial report was submitted along with club expense to date. Report was accepted with a motion.

**Membership** – Stan Zdon

Membership is at about 55 total members for 2013 with 45 paying members. Late fees will be imposed after January 31.

**Events-** Chris Elliott

Freeze fly went well with 15 to 17 in attendance. About 6 flyers. Thanks to Amy Thiede for bringing the chili to warm up everyone.

**Training** – Scott Olsen

Instructors are needed, to date there are 9 Trainees and only 4 Instructors.

Training will be on Wednesday nights this summer, start dates to be announced later.

New members that need training should get their planes looked over and preflighted as soon as possible. Do not wait until the day of your first training session as this will take away from your flying time.

**Vice President:** - John Sager

Went over raffle prizes and announced the indoor flying dates (has since been canceled due to low attendance)

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**New Business**

**Joe Coleman** – ACRC forums have been moved. Your old account should work in the new forums. The old forums were imported and a link was made from the ACRC website however the pictures in the old forums were not moved.

The spring fly-in date was discussed and it was decided to hold this event on May 4.

TCRC auction is Feb 9 at Cross Point Church

Duluth Auction Feb. 16 Sat 9:00 AM Auction  
Twig Town Hall

Don McGillivray asked for help with an aviation event at a New Brighton Area Elementary school.

**Show and Tell**

Darren Bitzer brought in plans that he had copied for his DC-3 project that he working on. Darren brought in several copied of prints and showed the group that many of the local copy places do not make clean copies. Many of the copies that he had made were off in dimensions and are not usable. He found that FranzRepo were a good source to have plans copied.

**Raffle Winners:**

Great Planes F-86	Darren Bitzer
1 gallon Omega fuel	Neil Olson
2 – 12” servo extensions	Marc Davis
2 – 12” servo extensions	Preston Howe
2oz Mercury Adhesive	Scott Oleson
15 pack Xacto blades	Tom LaRose
Xacto Knife	Tom LaRose
Xacto Saw	Bob Barton
4 way socket	Virgil Okeson
Remote Glow adapter	Tom LaRose
Lead Balance Weights	Tom LaRose
F Glow Plug	Stan Zdon
F Glow Plug	Phil Vaughn
#8 Glow Plug	Neil Olson
#8 Glow Plug	Joe Coleman

Marc Davis

**MEMBERSHIP NEWS**  
**FEBRUARY 2013**

**IT’S GETTING CLOSER TO SUMMER. LET’S GET THOSE NEW PLANES BUILT !!!!!!!!!!!!!**

About 55% of last year’s members have rejoined for 2013. This is a little more than last year at this time when it was about 50%. If any of your friends have not rejoined, please encourage them to do so ASAP. The 2013 budget is based on a projected membership of 100 fully paid members. If we drop much below that number we will have to cut services somewhere.

In 2011 ACRC approved a change to Rule 10 to allow high speed passes over the runway. Some restrictions were part of that change. The new version of Rule 10 and the related wording from the ACRC Flying Site Courtesy are reprinted below so that all members are aware of this change.

**The Revised Rule**

10. When student pilots are receiving instruction all high-speed passes and aerobatics maneuvers shall be done in the in the vicinity of the ditch east of the runway or to the east of that ditch. (08/19/04). (See ACRC FLYING SITE COURTESY, #2, for more information.)

**ACRC FLYING SITE COURTESY**

2.) The airspace over the runway is normally restricted to Take-offs, Landings, Touch and Goes, and landing pattern practice; with high-speed passes, aerobatics and hovering\* done east of the runway. High-speed passes, aerobatics and hovering\* can be done over the runway in certain instances such as:

- a.) Only 1 aircraft is in the air.
- b.) At Fun Flies.
- c.) For flight demonstrations at ACRC events.
- d.) With prior agreement of all the pilots on the flight line.
- e.) For any other instances pre-approved by the ACRC Board.

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\*Helicopter hovering practice is to be done in the southwest corner of the parking lot.

If you have any pictures that could be used in the newsletter send them to me. If they are digital, email them to szdon@yahoo.com. If they are prints mail them to me and I will scan them and return them to you. If you come across any articles on the Internet that could be use in the newsletter send me the link and I will download them and use them.

The next meeting will be at Riverwind on February 21 at 7:00 PM.

Stan Zdon

## EYE SAFETY

I was sitting at my workbench pondering the idea of the senses and what it would be like to live without one of them. Now I am not talking about my sense of style, or my common sense, or even my 6<sup>th</sup> sense. Rather, I am thinking about the five basic senses, that of Touch, Taste, Smell, Hearing and Sight. Of these five senses I would think that most people would be most set back if they lost their Sight. It's not that the other senses aren't all that important, but I believe that I could still drive my car if I should lose my sense of humor, granted it just wouldn't be as much fun.

Although there appear to be no statistics kept on the number and types of eye injuries that occur each year in the RC community, we can use information provided by the Bureau of Labor Statistics and OSHA to get an idea of what the risks are for the general public. The BLS states that there are several major contributors to eye injuries in the workplace which include:

- **Flying objects** with well over half of eye injuries caused by flying or falling objects, including sparks striking the eye. Many such objects are smaller than a pinhead.
- **Improper equipment operation** is responsible for over 30 percent of eye injuries
- **Contact with chemicals** causes some 20 percent of eye injuries

Many of the injuries could have been avoided or

reduced had it not been for **Poor choice of eye protection, Improper fit** or even **Lack of awareness** of the need for eye protection. OSHA reports that a majority of the injuries occur with people who are not wearing eye protection or are wearing improper or poor fitting eye protection, which is a statistic we would expect if eye protection is in fact working.

How does this relate to the Radio Control pilot? There are plenty of dangers at home and at the field that you should look into for eye safety.

If you work with the chemicals such as glues, solvents and fuels you are exposed to a potential chemical contact with your eyes. If you read your MSDS sheet on the particular products that you use you will have an idea of what to do in an emergency. Working with power tools such as sanders or high speed rotary tools are another obvious time to wear eye protection due to the dust and small material that these tools can send flying into the air. Charging batteries for your model can also pose a potential risk in that an old or damaged battery can leak, outgas or even explode. Even testing an engine, be it gas or electric, can have the potential to damage your eyes. Tiny debris kicked up by the prop or blades could easily cause damage to the eye. Fuels can spray from the muffler. The blade could even become a projectile if the blade is damaged or dislodges from the plane. (tighten that prop nut please).

At the field you are exposed to a wide range of potential dangers caused by the weather and by other pilots. It is all too easy for an insignificant prop strike to result in a pebble sized eye missile being launch in your direction while your focus is on your airplane. When we are flying combat the rule is that everyone needs to have on a helmet, but safety glasses should also be worn. And don't think that indoor flying is any safer because of the smaller size and slower speed. I have seen several instances of Micro-copters, Vapors, and other featherweight fliers flown in close proximity to my fellow pilots with a number of unintentional (I hope) head shots and body blows. Fortunately no injuries have occurred but I think that it would be

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wise to have eye protection. Again, when you are focused on your plane it is easy to lose track of the other planes in your vicinity.

It is not just physical items that can damage your eyesight. When staring up into space you have to be wary of the damage that sunlight can have on your eyes. Believe it or not, you can just as easily damage to your eyes on a cloudy day as you can on a sunny day. This is because a large, white cloud can bounce more of the sun's energy back to your retina than an azure sky especially if the cloud is in direct sunlight, resulting in something akin to snow blindness. Not only do sunglasses protect against damage from light and UV, it can help by reducing eye strain giving you longer, more comfortable flying times, and the sunglasses can also work as your first line of defense for general eye safety.

What type of safety glasses should you use? Although wearing any kind of protection at all can be better than having no protection, OSHA recommends wearing safety glasses that have passed safety testing and as such are labeled as Z87. These glasses are tested by having a ¼" BB shot at them at 100mph and have had a 1 lb pointed weight dropped from 4' without breaking the lens. For prescription safety glasses they only need to pass a lower level safety test to be used as safety equipment, however if they are strong enough to pass the higher test rating they are then labeled as Z87+. Keep in mind that polycarbonate lenses are much more impact resistant than glass or plastic lenses as the latter two can shatter into small sharp pieces. The polycarbonate lenses will usually just crack rather than shatter, however they are more prone to scratches if they do not have a scratch resistant coating. If possible, find a set of safety sunglasses that also offer protection for sunlight for total eye protection.

Still don't think that you need eye protection? Reread this article, but this time; try it with your eyes closed.

*Brett Ohnstad*

## ACRC TRAINING

At the January meeting I asked the attending members if there were any objections to moving the ACRC "Training Night" from Thursday to Wednesday night. With no objections, training night will now be held on Wednesday evenings weather permitting. The field IS NOT CLOSED to anyone who wants to fly. The only thing the instructors ask is to use common sense while training is taking place on the flight line. Don't fly in a manner that will make the students and instructors nervous. Remember we will typically be flying the pattern and at slower speeds.

As we all know our club hosts a few low-key precision flying contests such as the Pattern or the Fun Scale Contest. I have heard members say things like "I would like to try it but have never flown a routine" or "I don't know how to do all of the maneuvers." If this sounds like you, let me know! I would be more than happy to help.

## Training Tips and Tricks

### Crosswind takeoffs

More often than not the wind is not directly down the runway. When the wind is light, a slight crosswind does not have a lot of noticeable affect on your airplane. However if you find yourself starting your takeoff roll from the corner of the runway instead of the centerline, then the crosswind takeoff technique is in order! Lets say you are at ACRC and there is a nice stiff northwest wind and you are flying a FOUR Channel tricycle airplane!

Move the control stick all the way to the left into the direction from which the crosswind is coming and the elevator in the neutral position. This will position our ailerons properly to compensate for the wind. The left aileron is in the up position while the right aileron is in the down position. We do this to help overcome the crosswind, as the left wing, the windward wing, will generate more lift than the leeward wing due to the fact that the leeward wing is partially blanked out by the fuselage. If we did not make this control input, the left wing would lift off before the right wing and

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we would find ourselves in a precarious position. At low speeds though, the ailerons will be ineffective until the plane picks up speed.

Now it's time to give some thought to the rudder how we'll use it during a crosswind takeoff. We can anticipate that the left-to-right crosswind will strike the vertical fin and rudder. In doing so, the wind will try to push the tail to the right forcing the nose to go left. During the takeoff roll right rudder will also be needed to compensate for engine torque and propeller "P" factor, which will try to push the nose to the left as well. After aligning the airplane with the centerline smoothly begin applying power. As the airplane begins picking up speed the aileron, elevator, and rudder controls begin becoming affective. With increasing ground speed right rudder will be needed for maintaining a straight track down the runway. Remove about one-half of the left aileron correction. Remember, the faster we're moving, the more effective the controls, so it won't take as much aileron to keep the left wing from flying before the right wing.

Just as you reach liftoff speed, apply very slight backpressure on the control stick and move the ailerons to a neutral position. There, you've just lifted off the runway and now airborne. But our takeoff procedures are not yet quite done. After lifting off, relax the backpressure on the control stick and relax the rudder pressure you have been holding during the takeoff roll. This will allow the airplane to "seek" its own crab angle. The airplane's nose will actually move several degrees to the left. Once you have completed this step, ease back on the control stick and establish the climb out speed. You've now executed a good crosswind takeoff!

Practice, practice, practice!!!

Scott Oleson

## HINTS AND TIPS

### Eliminating Balsa Dents

Got nicks and dents in your balsa? Just put a cloth over the area and wet it, and then place a hot iron on the wet cloth. Small nicks and dents disappear.

### Curing Prop Slippage

In the case where you have a single bolt hub, prop slippage can be a problem. A simple cure for this is to use sticky-back sandpaper, any grit, and stick it to one of the contact surfaces.

### The Pinch Test

If you pinch the fuel line at idle and the engine speeds up, it is on the rich side of the adjustment. How much it speeds up shows how close you are. If it speeds up a lot, you are rich. If it speeds up just a little, you are just right. If it doesn't speed up at all, you are just going lean. If it slows down, you are lean. This test temporarily starves the engine for fuel and is reliable to test for a too-lean condition. At full throttle, quickly pinch the fuel supply line. The engine should momentarily increase rpm before starting to die. If it starts to die immediately, then it's already too lean and should be adjusted.

### Electric Starter Safety

People who start engines by turning on an electric starter and jamming it against the spinner or prop hub are acting in an unnecessary and hazardous manner. This could slip and go into your hand, break props and needle valves or tear up your fuselage. Place the starter firmly against the engine, and then turn it on. This will save a lot of broken equipment and will create enough torque to turn your engine over effectively.

*All of the Hints and Tips are from the AMA National Newsletter.*



## NAME THE PLANE

## Test Flying a New RC Airplane

*Bob Wilson, Macon Aero Modelers, Franklin NC*

All too often pilots, knees rattling and fingers shaking, taxi a new model out to the runway and begin what turns out to be a disaster. Rather than calmly analyzing feedback from the model, there is a flurry of stick yanking and jerking and a crash.

Successfully testing a new model is more of an attitude than anything else. It requires calm analysis by reading what the airplane is trying to tell you and a good dose of planning ahead.

The planning ahead part involves being sure you have taken all the preliminary steps while building or assembling the model to make sure the engine is properly mounted, fuel lines are free of kinks, the CG is correct, the engine is tuned in, and myriad other small details that it takes for a model to fly well are taken care of. A good carpenter will measure three times and it follows that the details of an airplane should be checked three times as well.

How many times have I seen the fuel line to the engine connected to the vent line instead of the pickup line? How many times have I seen the lack of a screw to hold a servo arm in the servo, or gas engines/mufflers bolted on without using thread lock? It's a good idea, once the model is finished, to go back through the manual and read and check each step of the construction/assembly process. Check and check again. For added comfort, enlist the aid of another builder to critique your work.

Then, when you taxi out for takeoff, you will know that everything is as it should be and that you haven't forgotten some important detail. If you are a pro, you may be able to put the model together in short order because you know what to look for and take care of the details almost automatically. But, if you are a bit less than an expert, take your time and don't worry about how long it takes. Be meticulous.

If you've taken care of the details ahead of time, there really shouldn't be any surprises to catch you

off guard and most likely the model is going to fly just fine. The pros refers to the model's first flight as a trim flight. They don't consider it as a "test flight." They know the model is going to fly and it only becomes a matter of trimming it.

If you are flying a model with a low power-to-weight ratio, fly level for a few seconds immediately after takeoff to build up flying speed. If the model climbs, apply a little down elevator, if it turns one way or the other, make the necessary corrections, but by golly don't start yanking sticks around. Chances are the model isn't going to be very far out of trim anyway. When you get to altitude, then begin correcting with the trim buttons on your transmitter.

The first flight is a culmination of your having taken care of all the little details and, if you are confident in your work, there is no need to panic. So taxi out, relax, take a deep breath and line up for takeoff, check your control movement one last time, and after that, "just fly the damned airplane."

## Soldering: It's All About Heat and Clean

*From the Sacramento Valley Soaring Society,*

*by Tom Ball*

When I was teaching school back in the 1950s, I got a summer job with the company that installed the first dial telephone system in Elk Grove. Eventually I moved on to other jobs as the work progressed, but initially what I did was solder each wire from a 200-pair cable to terminal blocks eight hours a day. By the end of the summer I had a pretty good idea how to attach two items together with molten metal while avoiding the dreaded "cold joint."

I just finished doing all the wiring for a new 1/5-size Cub that I am converting to electric power. While I had all the gear out, I also changed the terminals on three batteries that I bought at the last swap meet. This seemed like a good time to write an article I had suggested some time ago.

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Before I get to the preparation of the actual materials to be soldered, let me talk for a minute about irons, solder, and tools. My standby is an older model Weller 8200 rated at 100 watts. I love this gun because it is ready to go as soon as the trigger is pulled and I can lay it back down on the bench without wondering an hour later if I turned it off. For really heavy work, like joining 1/8-inch piano wire for landing gear, I have a conventional 100-watt iron made by a company called Drake. My third iron is a small Ungar, which does not show wattage, but it has a very fine tip and is good for jobs like re-attaching a broken wire to a speed controller.

For solder I used a good quality resin core 60/40. The last numbers refer to the proportions of lead in the mixture to tin. The flux I happen to have on hand at the moment is Oatley No. 5 solder paste. On hand means it has probably been around five or six years. With paste, a little goes a long way.

Many of the tools I use, like needle-nose pliers and small files, are just normal bench tools. A more specialized tool I almost always use is called a "third hand." It consists of a base supporting frame with two opposing alligator clips, which can be twisted and moved to almost any position.

By gripping the two parts to be soldered and holding them firmly together through the entire process, it helps eliminate burnt fingers and failed joints because of movement before the solder has completely cooled. The last two tools that always come out when I set up a job are a simple wire stripper and a small bronze brush which I use to clean off the tips of the irons when they start looking a little dull.

For a perfect solder joint, both surfaces must be clean enough and hot enough that the solder will melt and flow evenly on both items. Any dirt, rust, corrosion, or other foreign matter on either surface will prevent the solder from sticking to the dirty area and will cause a weak or imperfect joint. This is less of a problem when dealing with new components and fresh wire than when doing repairs or reusing old components. Sandpaper,

files, a Dremel tool, and the wire brush I mentioned earlier can all be used to get a bright and shiny surface. When doing repairs, I cut back enough fresh wire if the wire is long enough to allow it.

One way to guarantee that you are dealing with two clean surfaces is to apply a light coating of paste and solder to each surface before you make the actual joint. This is sometimes called tinning and will show up any places that are not willing to take solder.

Once both surfaces are tinned, they must be held together in some immovable way through the entire process, from the application of heat to the final cooling when the solder itself turns from bright to dull. If you are going to do this without some type of jig, be sure to use pliers. There is no way you can hold something with your fingers close enough to the joint to be effective without burning yourself. For larger jobs, I use everything from small vises to C clamps.

The actual soldering is generally over within seconds. The trick is to position the iron so that both surfaces are heated to the point where solder melts and flows.

Put a little solder on the tip of the iron before applying it to the area. If more solder is needed, for example when building a heavy-duty landing gear, push the end of the solder right into the heated area but don't overdo it. Excessive solder buildup does not make for a stronger joint. Also, keeping an iron in an area until wire insulation and other components are melted does not make for a better job.

One last point to watch out for is the so-called cold joint. A true bond will be made only when both surfaces become hot enough to solder. Be sure that the tip of the iron comes in contact with both surfaces long enough for this to occur. Cold joints will often look fine and may even hold for while, but they have a nasty habit of failing on final approach.



# SERVO CHATTER

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*Deadline for the  
next newsletter is:  
March 1, 2013*

## CALENDAR OF UPCOMING EVENTS

Thursday – February 21

- ACRC Meeting

Thursday – March 21

- ACRC Meeting

Thursday – April 18

- ACRC Meeting

