



ACADEMY OF MODEL AERONAUTICS CHARTERED CLUB #1255

SERVO CHATTER

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ANOKA COUNTY RADIO CONTROL CLUB, INC.

JUNE 2016

THE MEETING WILL BE THURSDAY, JUNE 16, AT THE FIELD!!

FROM THE VEEP

Earlier this year, I talked about the evolution of model aviation and the current trend of drones. Well the chickens have come to roost as they say. I was at Barnes and Noble feeding my magazine addiction and noticed that the number of drone specialty magazines now equals those of general model aviation. A recent Tower Hobbies catalog arrived the other day with page after page of drones and related components. It seems fixed wing aircraft are being pushed aside by the high tech, sit-on-your-butt crowd, while wearing goofy glasses. I'm probably going to get beat up in a parking lot somewhere, but I don't get it. Sorry, I just don't. I also don't get free flight either.

I guess I like to be a participant in the activity rather than an onlooker. Does this mean I don't like drones? No, it doesn't. That said, drones are getting a lot of bad press caused by those few irresponsible operators that don't play by the rules. Well, I guess that irresponsible use would apply to just about anything and everything we do. I could go on and on by listing how something useful can be turned into a hazard or worse by stupid behavior, but you get the picture. We all need to promote the model aviation hobby in the best possible light, or we may find ourselves with lots of toys and no place to play.

Tim Karash

ACRC EVENTS

The ACRC Spring Fly-in is in the books and the turnout was not bad. I'd estimate we had 15 or 20 pilots and about the same number of spectators. That's pretty good considering we changed the date at the last minute due to weather concerns. We had plenty of sunshine and also plenty of wind, but that didn't stop many pilots from getting in a flight or two. Thanks to all that participated and also those that helped out!!

Our next event is on Saturday, July 9, so get those planes ready for the Warbird Fly-In. We'll be serving lunch with burgers and hot dogs and homemade French fries again this year. Desserts will be potluck this year, so plan on bringing a dish to share.

Don't forget about the next monthly fun fly either, which is always held the Saturday following the club meeting.

Bob Proulx

ACRC TRAINING

We have a total of three R/C pilots in training now. Mark Lichtscheidl has soloed, congratulations to Mark. Two new pilots have entered training, Jacob Mickley and Ivan Johnke, both with quad copter experience. They are also the first new pilots to take advantage of the AMA's Intro Pilot Program. They're working on airplane training now. I am expecting both to move thru flight training in a short time. I have some feedback on the student-training booklet and



check list: all positive so far. They will be evaluated as we go through the year.

The Landing:

Before you begin your downwind leg the altitude of your airplane should be constant. As a very general rule of thumb 30 feet. or so. There's no hard and fast rule to this height and a lot depends on the type and size of airplane that you're flying. You'll get to know how high to fly the downwind leg with practice and experience. The important thing is not to be too high, as you'll end up coming in too steep and too fast.

So to commence the landing process, fly your airplane downwind until it passes you by up to 150 feet or so (again, this distance is going to depend on a few things) before smoothly turning it through 180 degrees so that it's coming back towards you (remember that reverse control!). Keep the bank angle shallow and, as you turn, slowly reduce motor power at the same time but be ready to increase it again quickly if the plane drops too much, too soon.

Once you've completed the turn, you are now on your final approach. Use rudder to keep the plane in a straight line and use motor power to control its rate of descent. You can use elevator also, but the proper control for rate of descent is in fact motor power; while elevator will certainly make the plane go up and down, it also directly effects the airspeed of the plane and ideally you want to keep this as constant as possible and as slow as possible without stalling.

As the airplane nears the ground, reduce the motor power completely and gently apply up elevator to slow the plane's speed and reduce the rate of descent, until the plane touches down. This very final stage is called the flare and timing the flare is crucial to a good landing - flare too soon and your airplane might stall and crash, flare too late and it will touch down too hard and fast and more than likely bounce all over the place, perhaps even breaking the landing gear or worse. Flaring your plane at exactly the right moment is something that only comes with practice, and the more landings you do the better you'll get at it as you get to know your plane's flight characteristics. (*Editor's Note* –

Instead of just boring holes in the sky practice repeated touch and goes. When you are ready to land just do the touch but don't go.)

Tom La Rose

MEMBERSHIP NEWS

The meeting this month will be the second one at the field for 2016. The road should be in good shape and hopefully it will be a good day for flying. The starting time is 7:00 PM and if you get there early you can get in some flying before the meeting. Remember that you should be using your current membership card to mark your channel and guests should be using their AMA card to verify their AMA membership.

Because of a recent By-Laws change nominations for the ACRC Board now take place at the May and June meetings with the election at the July meeting. The current members whose terms are up are Brett Ohnstad, Tom LaRose, Bob Proulx and Marc Tellevik. The nominations at the May meeting were overlooked so we have to do them at the June meeting. At least four nominees are needed to fill the available positions. We also need a volunteer to serve a one-year position on the board that we were not able to fill last year. Tim Karash has been doing double duty as Veep and Secretary. Please consider serving on the board and becoming a FBM.

The nearest hospital is in Wyoming, MN and is the easiest to get to. Just take Hwy 22 (Viking Blvd.) east across 35W and turn right on Hwy 61. The hospital is about a block south of Hwy 22. If you have to call 911 for an ambulance they will want to know where the field is located. The road where we turn off of Hwy 65 is 197th and the address of Central Wood Products 19801 NE Hwy 65, East Bethel.

The GPS coordinates of the field are:
 45⁰ 19' 44.4" North Latitude
 93⁰ 13' 52.2" West Longitude

On July 9 there will be a Warbird Fly-In. If you have a plane that has military markings bring it out to the field and fly.

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THE NEXT MEETING WILL BE AT THE FIELD ON JUNE 16 AT 7:00 PM. The summer meetings will be at the field through August. There will be a fun-fly on Saturday June 18 at 10:00 AM.

Stan Zdon

ACRC MINUTES

Officers present

Virgil Okeson, Stan Zdon, Marc Tellevik, Bob Proulx, Brett Ohnstad, Tom Larose, Tim Karash

11 Members present.

Membership:

87 Members as of this date.

Treasurer:

We have money in the bank.

\$50 Income from April raffle.

\$219 April Expenses.

Safety:

No incidents as of yet.

Events:

June 4 Spring-Fly In.

Bob Proulx brought us up to date for the East Bethel Booster Days happening on July 16. Many details were covered in the March newsletter, however the actual flying site has been relocated to the west side of the park. There is the possibility of a ACRC float to be entered in the parade. Small balsa hand launch planes as give away prizes for kids proposed.

Training:

4 students are in training now. First graduate of the year is Mark Lichtscheidl

Old business:

A few members have asked if enclosing the shelter for winter flying would be possible. Options were discussed but the proposal was tabled.

Safety fences/barricades for pilot stations are in the works per Brett Ohnstad.

Field grass area has developed a bumper crop of weeds and dandelions. Recommend contacting Bob Hoffman for advice.

Tom LaRose built 2 new electric flight station plane holders and repaired old units. Thanks Tom

Civil Air Patrol (CAP) has requested model aircraft for display and demo flights at MSP headquarters. Marc Tellevik to pursue details.

City of Andover has possibly banned all drone flights within the city limits. Stan will notify the AMA.

New business:

Flight training signage or banner placed on event sign near highway was proposed. Verbiage option discussed.

Stan always needs stuff for newsletter. Please send him what you have.

Nothing new on club forum for several years now. We are searching for new person to monitor and update.

Crash of the month trophy appears to be MIA. Does anyone know its whereabouts?

Last year a change to the bylaws moved board member nominations to May and June. A few seats are open for board. A vote will be at the July meeting.

Show and tell:

Bob Svare showed self-adhesive asphalt repair patch from big box stores. Fill cracks then cover with the patch. Claims to increase asphalt life by limiting moisture intrusion.

Darren Bitzer brought a large-scale spitfire spinner that he used as mold to replicate in carbon fiber. Kevlar was added to reinforce the attachment ring.

Raffle:

1st Rob Gallagher	Zipper foam plane
2nd Darren Bitzer	Servo mounting screws
3rd Gary Titus	Digital caliper
4th Virgil Okeson	First aid kit
5th Duane Orson	X-Acto knife
6th Darren Bitzer	Foam safe CA

Tim Karash



ACRC SAFETY

If you made it out to the field on Sunday for the season opening fly-in you might have noticed something new at the field. No, it wasn't the less than stellar flying conditions; we manage to pick that weekend without fail every year. I guess it wasn't bad if you like gusty shifting winds coming in at right across the runway, shifting just enough from being slightly from the south to slightly from the north to make it a continuous dance from the north pilot stations to the south pilot stations and back again, sometimes back and forth during the length of one flight. But we are used to that.

What was new at the field were the new pilot station safety barriers available for use at most of the pilot stations. The club has decided that it might be wise to offer pilots the option of having a barrier in place to protect them in case of an errant aircraft.

The AMA has issued a list of recommended RC Flying Site Specifications in order to help clubs promote "improved field management". This includes the use of a barrier that is "designed to stop models from veering into pilots' and/or spectators' positions". Although the AMA does not make their suggestions mandatory, they do come as highly recommended.

If you were to check out the AMA's recommendation you would see that they indicate having a barrier between the pilots stations and the runway. This would be akin to having the pilots stand behind one of the two orange snow fences currently at the field. I have been to other fields where this is the case. Personally I don't want to have to a long barrier that prevents me from getting to and from the runway without having to run all away around to the end of a fence line. I do like that we have a barrier between the pilot stations and the pits even though there is no recommendation from the AMA as to having a barrier in this position.

Having a little spare time at work (and access to Google maps) I have looked at other fields from around the country. I have seen plenty of fields that have dedicated pilot's stands with a "U" shaped barrier surrounding the station. Other places that I have seen these barriers include flight videos on Youtube and even some of the fields in the Realflight simulator. We as a club may be a little

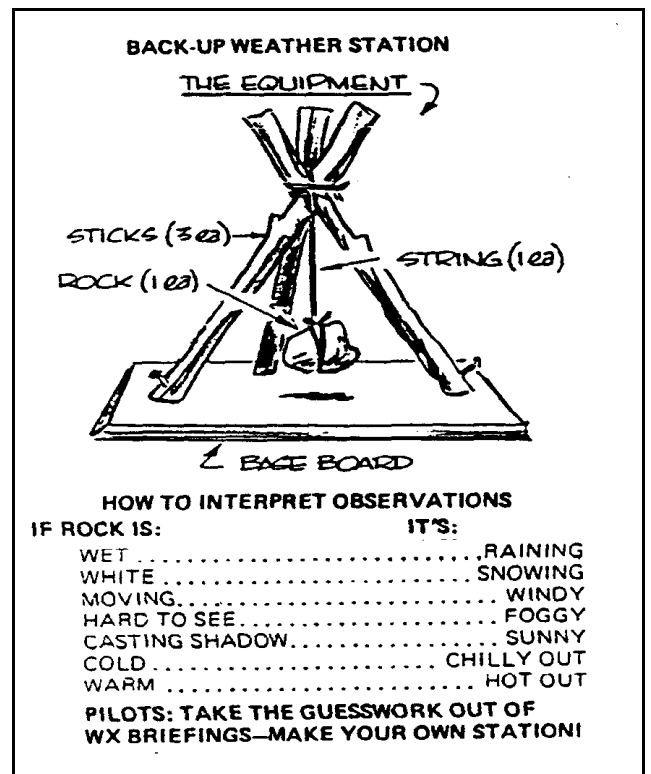
behind the times in getting a barrier in place that protects the pilots from a runaway.

I have heard a little complaining about the barriers right from the start. Several people have stated that they think that the stands will get in their way or that they feel funny having them. If that is the case, don't use them. Feel free to stand to the side or in front of the stand. Currently I am thinking that we can leave the two outer stations on each end empty. Go ahead and fly from those positions if you need to. There is nothing that says you have to fly from behind an optional barrier. I have also heard a complaint that the barrier would stand little chance against some of the giant 3D planes being flown by some of the more experienced pilots. True as that may be, I am not so worried about a more experience pilot flying a their thousand dollar airplane into the pilot station. I do believe that the barriers will provide some protection against the 40-sized trainer flown by the relatively inexperienced pilot.

I have also heard some positives about the added safety barrier too. One of the guest flyers on Sunday has expressed interest in building a similar barrier at his club in North Dakota.

Personally I plan on using the barriers. I feel like I can fly a little more confidently when I am not worried about being hit in the ankle by a prop.

Brett Ohnstad



Heat Treating Music Wire

by Roy Vaillancourt

The music wire used by modelers to make landing gear and cabin struts is medium carbon steel heat-treated to spring temper or about 45 on the Rockwell C scale of hardness (RC45). On this scale, RC20 is soft, RC45 is tough, and RC60 is hard. Tough wire can be bent and cut using the proper tools and techniques, but sometimes it's just too difficult to work with.

One way to soften steel music wire is to heat it, which makes it easy to bend and form. But after heating and forming, the subsequent cooling -- often at an uncontrolled rate -- can make the finished wire too hard or too soft since its hardness is determined by the rate at which it cools. For some parts, the final hardness isn't critical. But a landing gear formed from wire softened too much won't spring back to its original position; and a gear made from wire cooled to a harder than normal state will snap on its first use. To restore the wire to its original specific spring temper, it must be heat-treated a second time and cooled at a controlled rate. To form wire easily, first anneal it; next, form or bend it to the desired shape; and then heat-treat the part back to spring condition -- that is, temper it. First the wire should be annealed at the location to be bent. To anneal it, heat the wire with a torch until it becomes a bright cherry red -- about 1400 degrees Fahrenheit. Let it cool completely to the touch. Don't quench it or blow on it. Just let it cool naturally away from any drafts. The wire should now be in the RC25 soft range, and it will bend easily. After forming once again heat the wire with a torch until it becomes bright cherry red, but this time quench it -- that is, cool it rapidly by immersing it in room temperature water. Plunge the steel into the water with a twisting, swirling motion to keep water vapor from insulating the wire against the cooling action of the water. At this point the wire should be very hard, probably above RC60. To test the hardness, try to make a mark on the worked area with a file. The file should slide off without cutting into the steel at all. If it cuts the wire, try the heat and quench cycle again. If the file still cuts the wire, it isn't high carbon steel. Get another piece of wire and start over -- you won't be able to add the necessary carbon to low-carbon steel. When the file test

signals success, the wire is ready for the final step, but not for use, because it's very hard and quite brittle, and will probably snap off. The final step is to temper the wire back to the desired hardness. Tempering is a form of annealing but is controlled so that the steel achieves a specific hardness. Start by sanding the wire with steel wool or emery cloth. Then heat it gradually with the torch. Watch for the following colors as a guide: straw color (350 degrees), followed by dark blue (600 degrees), and then medium blue (750 degrees). At this point, remove the wire from the heat and allow it to cool slowly. Don't quench it or blow on it; just let it cool naturally in still air. Once the steel returns to room temperature, it should be at the target RC45 hardness, which has a good spring temper. Try the file test again. You should be able to make a mark now, but only with some effort. If it passes this test, the wire is properly tempered. Besides parts for model planes, tempered music wire can also be used to make special purpose tools. Instead of tempering to 750 degrees (medium blue), stop at the straw color stage. The wire will be at about RC60, which is still very hard, but not brittle. Wire at this temper can be used to drill wood and plastics, and most aluminum and copper.

1. Rockwell hardness testing, named after Stanley Rockwell who made his first testing machine in 1921, is a general method for measuring the bulk hardness of metallic and polymer materials. Although hardness testing does not measure performance properties, hardness correlates with strength, wear resistance, and other properties.

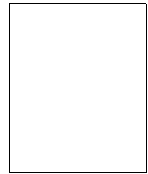
Rockwell hardness testing is an indentation testing method. An indenter is impressed into the test sample at a prescribed load to measure the material's resistance to deformation. A Rockwell hardness number is calculated from the depth of permanent deformation of the sample after application and removal of the test load. Various indenter shapes and sizes combined with a range of test loads form a matrix of Rockwell hardness scales that are applicable to a wide variety of materials. The Rockwell B and C scales are used for metallic substances.

2. Anneal: To heat and then cool (as steel or glass) usually for softening and making less brittle.

3. Quench: To cool (as heated metal) suddenly by immersion (as in oil or water).

SERVO CHATTER

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ACRC SPONSORS

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*Deadline for the
next newsletter is:
July 1, 2016*

CALENDAR OF UPCOMING EVENTS

Thursday – June 16

- ACRC Meeting-At Field

Saturday – June 18

- ACRC Fun Fly #3

Saturday – July 9

- ACRC Warbird Fly-In

Thursday – July 21

- ACRC Meeting-At Field

Saturday – July 23

- ACRC Fun Fly #4

Thursday – August 18

- ACRC Meeting-At Field

Saturday – August 20

- ACRC Fun Fly #5

