



ARCS NEWS

**AERO RADIO CLUB OF SYRACUSE
CLUB NEWS - APRIL 1993**

VOLUME II

NUMBER 4

NEXT MEETING APRIL 9, 1993 AT WALT'S

Receiver Battery Packs...

It appears the latest craze in receiver battery packs, is the five cell pack. As most of you already know, the standard receiver battery pack is a four cell pack with a total output voltage of 4.8 volts. From what we have learned by a few radio manufactures, namely ACE R/C. All the newer receivers are rated for 6.0 volts (input) as well as the servos. In fact, when you read the specifications for a servo (primarily Futaba) S-148, you will notice the output torque is 42 oz. That rating is achieved at 6 volts, not 4.8 as most of us would perceive. So what does all this mean to us modelers. If you're interested in faster servo response and better radio reception, you might consider a five cell receiver pack. As a side note, should you consider a five cell receiver battery pack. Remember, most standard battery chargers that are included in your standard radio gear have an output voltage of 4.8 and 9.6 volts.

Stuff...

Here's a nifty new gadget for anyone who's been hiding in the closet for the last year. A company in Florida has designed a conversion kit for the most popular servos. LDM Industries manufactures a replacement upper case with a ball bearing for Futaba, Airtronics. The conversion kit simply replaces the old upper case on your existing servo, via removing the four screws on the bottom of the servo. The new case gives the servo better support and a more positive feel, with virtually no play on the output shaft. The cost of a conversion kit (set of four) runs about \$28.00. Pretty cheap...

Good News...Bad News...

At the February club meeting I brought up an unpopular subject matter, Money. Our club is not exactly in a strong financial position. Currently our cash account sits at approximately \$550.00 with a total of 53 paid members. The club roster currently shows 79 total members. We anticipate between 10-15 unpaid members to return sometime in April or May. Our outstanding debt is \$550.00 payable to Dave Mathewson on or before May 1st 1993.

Granted our expenses for the last two years have been higher than expected. For example, in 1992 we purchased a new tractor for the sum of \$2200.00. The problem there was, the club had to borrow the money from club members. With a little luck we will repay the last outstanding note before May. The problem still exists though, for the balance of 1993 our cash account will be lean.

Please don't misunderstand my intentions, I am not proposing we build a reserve amount of money just for the fun of it. My proposal is to raise the membership dues to \$35.00, up from \$25.00 per year. My second proposal is to raise the dues of senior members to \$10.00, up from no charge. Both of these proposals would start in 1994. Not a bad deal considering you get 12 newsletters per year (at a cost of \$24.00 per mailing, not including printing cost). We have plans for 1993, such as a recreation area for younger members of this club. Continue to improve a field, complete the additional safety fence, plus other ongoing projects.

All factors considered, \$35.00 per year for membership dues is still a good value.

Mike Gosson

FCC Frequencies...

From: Robert Underwood, AMA

Date: March 13, 1993

The Academy's formal comment letter was filed on March 10, 1993. Ray Kowalski opted to send additional copies directly to a number of specific individuals within the FCC, including Ralph Haller and Doron Fertig. We are, therefore, now on record. During the week of March 15th we will make the special mailing to all 535 members of congress. It will include the items in this package. The Academy has also set in motion a program to provide data through empirical testing. Bill Hershberger and George Steiner will journey to the Muncie AMA site to perform the tests. This activity will probably result in the Academy filing a second comment letter at a later date.

Special Frequency Alert Update!

On Wednesday, March 10, just prior to the filing of the Academy's formal comment letter, our counsel received a call from Ralph Haller, Chief of the Private Radio Bureau requesting a meeting with the Academy concerning 92-235. Thursday, March 11th, Vince Mankowski, Bob Underwood and counsel Ray Kowalski met with the FCC representatives. Those present were Chief Haller, Richard Shiben, Chief Land Mobile and Microwave Division; Doron Fertig, Senior Economist in Policy and Planning (principal author of 92-235); Herb Zeiler, Deputy Chief, Special Service Division (responsible for Part 95 governing R/C.)

Chief Haller initiated the discussion by indicating a concern that modelers were creating an adverse image of safe model operation. The Commission was assured that we not only maintained an excellent safety record, but a close rapport with the FAA and related agencies. It was cited that our major concern centered around the fact that if 92-235 is implemented as written, a significant safety concern would develop that was beyond our control.

The discussion turned to why we responded to 92-235 in the manner we did. Mr. Haller was reminded of a meeting between he, Mr. Mankowski and Mr. Kowalski during 1992 in which he responded to the question of whether anything of note concerning modeling was imminent. The Academy representatives were assured there was not!

At that point the dialogue turned to our specific issues related to 92-235. When the concern over the frequency stability was noted, the Commission members indicated that the 50 parts per million (3.6 kHz tolerance) must be a mistake or typo. Following this, the Academy had an opportunity not only to seek clarification of all major points, but to provide extensive background, both historical and operational, concerning model frequency usage.

Mr. Haller expressed an eagerness to work cooperatively with modelers in an effort to resolve their concerns regarding the rule making. To that end, our request for permission to allow the Academy to perform empirical testing was granted and suggestions were provided for that testing. Assurances were provided that the present 92-235 is simply a working document and not the finalized form. A variety of options and alternate plans were explored. In short, the meeting was a productive work session that occurred with the principals, far ahead of our schedule for ex parte meetings.

A.M.A

As a side note, the FCC has received over 14,000 letters from modelers, expressing their concern.

SPRING IS HERE

Locked Out ???

Don't forget the combination locks at the field. Both locks share the same combination

R1-L15-R25

Dues are Due or Else!

He currently have 53 paid members in the club, if you have not paid your dues by May 1st you will be dropped from the mailing list. So don't let your membership expire...

If you prefer to pay by mail, forward your check to

*Paul Fleig
4674 Falls Rd.
Marcellus, NY 13108*

*The Next Lesson
The Next Lesson*

The first two aerobatic maneuvers you have learned through these lessons are related. Both the Inside Loop and the Immelmann Turn involve flying into the wind and pulling up into a half loop. With the Immelmann you roll out at top. With the Inside Loops, you continue looping. The Split S Turn you perform as a turnaround is related to each of these maneuvers. The pair of maneuvers to be discussed this lesson are not directly related to each other, though the Reverse Cuban Eight as we have already mentioned in Lesson 2 is really a pair of back to back Split S Turns. The horizontal axial rolls are presented at this time because in first practicing this otherwise horizontal maneuver, it should be learned in an upward climb, similar to the Reverse Cuban Eight, in order to avoid getting into a disorientation crash.

The reverse Cuban 8 is a giant figure 8 lying on its side. Cuban Eight's go back to the earliest days of aviation. The Reverse Cuban Eight differs from the "straight" Cuban Eight in the placement of the half rolls. In the straight Cuban Eight, you do three-fourths of a loop, then while inverted, the plane is

frozen into a 45 degree descent toward the ground. In the middle of that descent, a half roll is performed to upright flight, pulling out into another three fourths loop. Disorientation or even hesitation anywhere in that inverted downward path can mean disaster, because you are aimed at the ground, flying upside down. The Reverse Cuban Eight is a much safer maneuver. The plane is pulled upward into a 45 degree climb. The plane is half rolled to inverted just as you learned in your Split S. The wings are settled into a level position as you continue climbing. If you hesitate there is no danger. You then perform a three-fourths inside loop, ending it in another 45 degree upward climb, out of harm's way, where the process is repeated. If you haven't done so already, you can also now work on cleaning up your Split S turns by correcting for the heavy wing effect as you perform its downward loop. The important part of any Cuban Eight is to achieve a true 45 degree angle. That is steeper than you realize, and really feels too steep in the regular Cuban Eight, which is why that maneuver is left for later. Have a friend help you measure whether you are achieving a true 45 degree angle. The disadvantage to too shallow a climb is that you will then have to make too tight a loop in order to come back to your entry altitude. Another fine point of this maneuver is to try and center your half rolls in the 45 degree climb. That means you must continue climbing, after half-rolling, the same distance as you climbed before rolling. If you do a good job of centering the rolls in the upward climb, both rolls will end up centering on each other as well, which should be directly opposite you. Thus you must do your initial pull up before reaching yourself. In achieving a smooth exit, follow the same rule as exiting from your Inside Loops - release up elevator just before the bottom, rather than at the bottom.

Up until now if you had only a three-channel trainer, you still could get recognizable results on the maneuvers studied so far. Some pilots can even get recognizable horizontal rolls, having only the rudder as the rolling mechanism. But that is straining at it. For the three horizontal rolls maneuver you really should have ailerons. A flat bottom airfoil is okay, but a semi-symmetrical is better, and a fully symmetrical is best. This maneuver involves rapid revolutions about the longitudinal axis. Putting a plane into a continuous series of axial rolls is achieved by applying full aileron, to the right seems comfortable for most

pilots, and then while holding full aileron, the elevator stick is moved fore and aft to create applications of up and down elevator at the right moments. To master this maneuver, these suggestions are offered : (1) Get a proper roll rate by adjusting the amount of full throw in your ailerons. Three complete revolutions in faster than five seconds is too fast, and if they take much longer than eight seconds, that is too slow, which means you'll have more trouble keeping the flight path straight. (2) Practice this maneuver in a climbing mode. After you have the knack for proper elevator timing, gradually bring the flight path into a level axis, parallel to the ground. The trick of the maneuver is to learn the proper amounts of up and down elevator to apply, and to learn the proper timing of that application to coincide with alternate upright and inverted position of the aircraft. If you are off on your elevator timing, the maneuver can "slice or hook," to use a golf term, that is to curve right or left from a straight flight path. It can also lose altitude if the timing of the elevator is off too much. Taking first the amount of elevator application - most planes require more down elevator while the plane is inverted, than up elevator while it is rolling through the upright phase of its rotations. The flat bottom airfoil can require full down elevator. The relative fore/aft center of gravity will also affect this aspect - the more nose heavy, the more down elevator while inverted. The exact amount of up or down you will have to determine with practice. Taking next the timing - the goal is to begin applying some elevator as soon as the wings are 45 or more degrees off level, though you can skip applying "up" elevator going into the first revolution. Thus your first application of elevator becomes "down" as the plane has passed through knife edge and is coming into its first inverted position. You smoothly slide forward on the elevator stick, timing your application so that the maximum amount of down you are going to apply occurs exactly at full inverted. As the plane revolves through that position and starts coming through 45 degrees, you start easing up, so that you are entirely off down elevator and sliding onto up elevator by the time the plane has revolved through knife edge and is flying 45 degrees upright. As the plane is exactly upright you should be applying maximum up elevator. If your maximum application occurs while the plane is still tilted, you will induce a turn, which, of course, will curve the

flight path. It is a common mistake while learning this maneuver to develop a rhythm, and you're doing pretty well, and then all of a sudden one time the flight path hooks or slices on you. What happened was you came to depend on the rhythm, not the timing of max up/down with exact upright/inverted flight, and your rhythm got slightly off time, so the max was occurring in tilted flight. So concentrate, and practice your elevator application to achieve maximum elevator application adequate to keep your plane in a steady upward climb, without curving right or left. As you gain confidence, allow the climb to be steadily lowered until you can hold perfectly level flight while rolling. While called a downwind maneuver, you will find it works well upwind, too. Be sure to practice coming from the right and the left. Don't become a flier addicted to one direction. As always, center it on yourself by beginning soon enough to get upside down of the second roll right opposite yourself. A crisp end is made by rapid release of the aileron at the end of the third roll.



1992-1993 ARCS CLUB OFFICERS

President

Mike Gosson - 488-6123

Vice President

Dave Mathewson- 487-5998

Secretary

Fritz Ceratt- 689-6329

Treasurer

Paul Fleig- 673-1566

As a reminder to everyone...This is the last official meeting at Walt's. The next club meeting won't be until October.

