
The Transmitter

Suburban RC Barnstormers - P.O. Box 524, Bloomingdale, IL 60108

AMA CHAPTER 640

IMAA CHAPTER 194

September 2013

<http://www.suburbanrcbarnstormers.com>

Coming Up in September

IMPORTANT NOTICE! – Meeting Location Change!

September 9th, Meeting will be held in Itasca Library, 500 W Irving Park Rd., Itasca, 7:00 PM

September 15th, Fun Fly # 5, Pratt's Wayne Woods, 9:00am Trim Flights, 10:00am Contest

September 22nd, Giant Scale Fun Fly, Pratt's Wayne Woods, Flying starts at 9:00 AM

Board meeting on Monday, September 23rd at 7:00 PM, at the Bloomingdale library.

Other Activities and Events

Woodland Aero Modelers (www.wam-rc.com) 46th Annual SWAP MEET
Saturday, September 21st, 8:00 AM to Noon

Trinity Lutheran School, 11503 German Church Road, Burr Ridge, IL

Admission \$5.00, Table at door \$15.00, Table in advance \$12.00

Contact: Bill Brzostowski, 630-964-4390, billbrz@sbcglobal.net

From the President: (Remember, the September meeting will be at the Itasca library.)

I hope your summer has gone as planned. Some Barnstormers are retired and can fly any day of the week. Then there are the rest of us that can fly only on weekends. The forest preserve people have been doing a good job of keeping the grass in shape. It is nice and green and thick. I wish my lawn looked as good as the flying field. No, I have not heard anything additional about the new field. A few members went to Fond du Lac for a giant scale fly-in. Gas fed engines was the prominent means of power. Nitro and electric were in lesser numbers. There was a mix of power to the airplane size and just because the plane was big did not mean it got a gas engine. There was a large B-17 with four .60" size engines on it. This plane was flown very well by a guy from Horizon Hobbies. He made you gasp as you watched him fly that plane low to the ground and then make a sudden left turn and wonder why the wing tip did not hit the ground. Most of the electrics were on single engine airplanes. One nice thing about electrics was that they could be pushed up to the flight line and wait for their turn to take off, but like the jet guys they needed to keep a close eye on their flight time. There were six planes in the air at one time and you could not land any time you wanted. Once a plane was on the ground you had to wait for it to taxi off the runway before you could land. The gas engine plane could stay up the longest, which was nice when there was traffic or an emergency and you had to stay up longer than expected.

So land with your wheels down and keep your stick on the ice.

Mike

Barnstormer Fun-Fly # 5 – Precision Aerobatics for Everyone!

By Steve Merrill

This is a low-stress, pattern contest suitable for all pilots.

Pilots will fly a series of five simple aerobatic maneuvers that will be scored by our lenient and compassionate Suburban RC Barnstormer judge(s). Numeric scores determine the rankings at the end of the contest (highest to lowest). Every competing pilot, regardless of final score, will have a chance to win the prize. There is an element of pure chance (see below) and the highest scoring pilot does not automatically win the prize.

The pattern sequence is comprised of five simple aerobatic maneuvers. The sequence will be flown twice before landing. Each maneuver starts out with 10 points. Points are deducted based upon flaws in the execution of the maneuver as per AMA and NSRCA scoring guidelines. The maneuvers must be flown in the correct order. **Take-offs and landings will not be scored.** The number of rounds flown will be determined by available time, but we should be able to accommodate at least two rounds, hopefully three.

Any airworthy AMA legal airplane that is capable of performing the following required maneuvers can be entered.

1st Maneuver - Horizontal roll (one)

2nd Maneuver - Reverse Half Cuban Eight

3rd Maneuver - 45 Degree Up Line

4th Maneuver - Split "S"

5th Maneuver - Inside Loop (one)

Descriptions of each maneuver are shown on the following pages along with the Aresti diagrams that diagram the maneuver. It is the responsibility of the pilot to know the criteria and fly the maneuvers as close to perfect as possible. The scores will be accumulated for both rounds. If three flights are flown, the lowest scored round will be dropped for each pilot. If four flights are flown, then the two lowest scored rounds are dropped.

Each competing pilot will have a spotter/caller (**required**). This is for safety reasons, for directing and coaching the competing pilot and to more closely emulate what is experienced in sanctioned pattern competition. The caller coaches the pilot on the order and elements of the maneuvers in the sequence as well as the quality of execution (constructive advice).

The Element of Chance: The "Prize" is not automatically won by the highest scoring pilot. The highest scoring pilot will choose four folded papers which contain an unknown number of points. The second place pilot will choose three papers, and third place pilot draws two papers. All other pilots will draw one paper. Because the papers will have different point values, being the highest scoring pilot and even having four numbers does not guarantee that you will win the prize.

There will be one paper that contains a large number of points that can surpass the total of four smaller value papers. When the papers are tallied, the pilot with the most points will win the prize.

Barnstormer Fun-Fly # 5 - Pattern Contest Maneuvers Descriptions

The purpose of this guide is to furnish an accurate description of each maneuver of the Barnstormer Pattern sequence that will be flown in Fun-Fly # 5.

(U) = Upwind direction of flight, (D) = Downwind direction of flight, (T) = Turn around maneuver

- **Take off (not scored)**
- **Free turn around and return to upwind orientation**

1) One Horizontal Roll (U):

Model rolls at a uniform rate through one (1) complete revolution in either direction. Center is the inverted portion of maneuver.

2) Half Reverse Cuban Eight (T):

Model executes a one eighth (1/8) inside loop to a 45 degree up line, hesitates (draws a line), does a one half (1/2) roll, hesitates (draws a line), then performs a five eighths (5/8) inside loop back to level flight in opposite direction as entry. This is a turn around maneuver done towards the edge of the field.

3) 45-Degree Up Line (D):

From level flight model executes a one eighth (1/8) inside loop to a 45 degree up line, hesitates (draws a line), performs a one eighth (1/8) outside loop to recover in level flight. The center of this maneuver is the mid-point of the 45 degree line.

4) Split "S" (T):

Model performs a one half (1/2) roll from level to inverted flight then immediately executes a one half (1/2) inside loop to level flight in opposite direction as entry. This is a turn around maneuver done towards the edge of the field.

5) Inside Loop (U):

Model pulls up and executes an inside (positive "G") loop. The loop is to be round and end at the same altitude as the entry with no deviation in heading.

- **Free turn around and return to upwind orientation**
- **The entire sequence is repeated a second time.**
- **Free turn around and return to upwind orientation**
- **Landing (not scored)**

Note: Any pilot that crosses behind the flight line will receive 0 points for that maneuver but will be allowed to orient his aircraft for the next maneuver in the sequence. A second violation of the flight line will result in the pilot being disqualified for that round and will receive a "0" score. If a pilot gets confused or significantly out of field alignment during a maneuver the pilot can call "Break" and only that maneuver will be discounted (0 points). The pilot can then get re-oriented and line up for the next maneuver in the sequence at which point normal point scoring will resume.

August Suburban RC Barnstormers Membership Meeting Notes

August 12, 2013

ATTENDANCE

There were 36 members present.

OFFICER'S REPORTS (Call to order at 7:03 PM)

President: Mike Maciejewski presided over the meeting.

- 1) Acknowledged new guest; Craig Croshier, RC helicopter pilot.
- 2) No First Person View (FPV) flying will be allowed at Pratts Wayne Woods by order of the forest preserve district. DFPD is concerned about safety of preserve users.
- 3) September meeting will be held at the Itasca Library due to meeting room scheduling conflict.
- 4) AMA answered questions about insurance coverage and verified that AMA insurance is a supplemental policy that extends primary homeowner and liability insurance coverage that must be obtained by the member.
- 5) Reminder to put at least your name and AMA number on your aircraft models (AMA requirement). Suggested that phone number would be useful as well.
- 6) The next board meeting will be on September 23rd in the Bloomingdale library.

Vice President: Steve Thill

- 1) Steve introduced Dave West as the provider of entertainment and education for the evening. Dave will be demonstrating molding technique using "OOGO".
- 2) Steve is looking for topics/speakers for next month's meeting.

Secretary: (Acting Secretary Bob Sarley)

- 1) Bob Sarley will be filling in for Scott Taylor while he recuperates (get well soon, Scott).
- 2) Bob asked membership to notify him (bobs@commeq.com) if not receiving the newsletter as expected.

Treasurer: Bob Elsner

- 1) Bob announced that Al's Hobby Shop is providing free shipping on any order except haz-mat or oversized parcels..
- 2) No other fiscal information at this time.

COMMITTEE REPORTS

Fun-Fly: Steve Merrill

- 1) The August 18th Fun-Fly (Fun Fly #4) was a bomb drop with added points for a target landing. It was a lot of fun and Practice from 9:00 AM to 9:45 AM. Pilot's meeting at 9:50 AM. Pilots start of first round at 10:00 AM. Food will be served. Ribbons awarded for 1st through 3rd place.
- 2) Jeff Pecca described the good time he had at the float fly at ???

Flight Instruction: John Howe

- Instructions for anyone interested are available. Call John or Deb to schedule a day/time out at the field.

Safety: Tom Lyons

- No issues this month. Keep up the good (safe) work!

EDUCATION/ENTERTAINMENT FOR THE EVENING

Dave West: Dave demonstrated the making of molded parts from a mixture of corn starch and silicone rubber caulk! He made a replacement cone for an electric starter (spinner contact type) using a compound of 50% corn starch and 50% Silicone caulk and a custom made mold produced on his 3D printer. After 20 minutes, the final product was unmolded to reveal a usable starter cone at minimal cost. The idea came from an Internet blogger who called the substance “OOGO”.

Mike Maciejewski: Mike showed us the laser cut short kit for an ME163 that was produced from a set of plans he had. The plans were scanned and laser cut parts of balsa and light ply manufactured by LaserCut USA out of Florida. The full size parts for this 80+ inch model were obtained for \$220.00. Go to lasercutusa.com for more information.

Dave West: Dave described the “build to win” contest presented in the last issue of the AMA magazine and showed his example of the plane built from the plans provided. Nice work, Dave.

Marty Schrader: Marty showed us his F20 EDF jet. The EPO foam fighter model was modified by him to be much stronger, especially in the nose. Other modifications were made to increase streamlining and reduce drag – resulting in a much faster airframe.

Steve Thill: Steve showed us his new OS 33GT gasoline engine. He also showed the heavy duty standoffs made available from customstandoffs.com for the mounting chores.

Ron Hilger: Ron auctioned off his old GEE BEE profile racer – with all the proceeds going to the club. The winning bid went to Marty Schrader for \$60.00.

Thanks a bunch, Ron and Marty!



Pattern Flying - Precision Aerobatics

Taking your passion for flying RC airplanes to the next level!

By: Bob Sarley

This issue of **In the Box** contains information originally contributed by Dan Naumowicz. I took the liberty of slightly editing and augmenting the original article.

Glow Powered To Electric Power - Some Conversion Considerations

It all boils down to power-to-weight ratios. The “ready-to-fly” weight of the airplane is the fundamental information needed to successfully convert a fuel powered (gas or glow) model to electric power. For this article, we will address a typical .40/.46-size model (not a scale war bird) with a wingspan around 48” to 56” that would weigh around 4-7 pounds maximum.

We start off with an accepted axiom that for basic trainer/sport type flight you need about 60 watts of power per pound of weight. This is a minimum power-to-weight ratio usually applied to aircraft with high lift airfoils (flat bottom and semi-symmetrical). For more ambitious or aggressive flying, most model manufacturers will recommend around 100 watts per pound. So for a 5-pound model, the manufacturer would recommend 500 watts of power. This leads us to the conclusion that for most .40 to .46 size applications you can use a 500-600 watt motor and expect reasonably good flight performance that is very comparable to the .40-.46 glow fueled engine counterpart.

Modern electric motors can be used with different battery voltage and propeller combinations to achieve the needed power. For example: A Tower Pro 3520-7 motor can be used with 4s or 5s LiPo battery to create anywhere from 500 watts at half throttle to as much as 900w at full throttle. Similarly, an E-flite Power 46 motor can be run at up to 925 watts. For pattern flying, the higher power ratings will be desired.

The propeller selection combined with the battery voltage used will dictate the actual power output of the motor. The recommended propeller for an E-flite Power 46 is a 13x8, which will create 725 watts when using a 4s LiPo battery. The recommended propeller for the Tower Pro 3520-7 is an 11x6, which will produce 700 watts on a 5s LiPo battery.

Because the effective thrust is a result of the combination of propeller RPM, pitch and diameter, both of these setups will yield similar results in terms of perceived performance. Changing the propeller size and battery voltage will affect the power output. All you need to do is choose the one based on your ESC capability, propeller clearance and flight time expectations. If you go with higher voltage battery, you will need to use a smaller diameter propeller of the same pitch or the same size propeller with a shallower pitch. The empirical results should be measured with a watt/current meter to insure you are not over taxing either the motor or the electronic speed controller (ESC). A recommended ESC for a .40 to .46 size setup would be a 60 amp controller. These controllers are capable of up to 80 amps for short bursts (5 to 10 seconds, like for a vertical maneuver at full throttle).

The controller used has no effect on the actual draw from the battery. It is there to convert the DC voltage of the battery into the timed 3 phase pulses used by the brushless motor. Again, the motor, propeller and battery combination will dictate the power draw from your electrical system. When selecting an ESC, bigger (larger AMP capacity) is better if you can afford it.

The battery used should always be selected based on the actual power handling capabilities of the motor. The maximum continuous battery power rating should match the motors maximum amp draw rating. If you are not intending to fly at full throttle all the time, you can probably get away with the 80% rule and use a battery with less maximum capacity.

Both the E-flite Power 46 motor and Tower Pro 3520-7 are rated at approximately 50 amps maximum by the manufacturer. The minimum battery would be a battery capable of at least 40 amps continuous discharge (50 amps X 80% = 40 amps) or better yet, a battery capable of delivering a minimum of 50 amps continuously. The battery discharge rate is identified as a number times the capacity, or “C” and expressed as “40C” for example, where C is the capacity of the battery in milliampere/hours. So, if you have a 2000 mAh battery with a 40C discharge capability, the battery could deliver 80 amps (2000 milliamps = 2 amps = C, 40 X 2 amps = 80 amps) without damage.

Battery capacity (in mAh) combined with the effective current draw will determine how long you can stay in the air. The maximum capacity of the battery that you can actually use will also depend on the room you have in your plane and where the battery is to be located to comply with CG requirements. Overall battery weight may also be a factor for some flying modes. Let's give it a try and go fly!

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This newsletter is published monthly by the Suburban RC Barnstormers, Inc.

We reserve the right to edit all information forwarded to us. Permission is hereby given to reprint any article that we publish as long as proper credit is given.

Material can be submitted for publication: (1) at a meeting, (2) by mailing to Suburban RC Barnstormers, Inc., P.O. Box 524, Bloomingdale, IL 60108, (3) sending it to the email of the editor, Scott Taylor, at: taylorstr@core.com

Articles must be received by the 4th Saturday of the month to be included in the following month's newsletter.

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