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AMA Charter #341

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ACADEMY OF MODEL AERONAUTICS

May 2020

Well…..Spring is here. It may not seem it but it is. The field is open and you may commence flying, just be wary of social distancing. Just a reminder, an email did go out with the **NEW GATE COMBINATION** so, be aware of that. Dust off those birds and get ready to take to the sky.

Article Submitted By Ron Paul

[Mastering the Rolling Loop](#)

Kick up your aerobatic performance with this deceivingly-easy-looking maneuver, the Rolling Loop. A challenging maneuver, the pilot, needs to utilize all the control inputs while performing it smoothly. A basic loop can also be described as a 360-degree circle. When you perform a loop with one integrated roll, you need to match the quadrant points. For example, you must have 1/4 of the roll complete by the time you are at the 90-degree point of your loop (see diagram). You will then need to have 1/2 of the roll complete by the time you are at the 180-degree point of your loop. Similarly, 3/4 of the roll must be complete at the 270-degree point of your loop, and you will have fully completed the roll when you have completed the full 360-degree loop.

Rolling Loop

1 — 360° loop, 1 complete roll
2
3 — 90° loop, ¼ roll
4
5 — 180° loop, ½ roll
6
7 — 270° loop, ¾ roll
8

ENTER
EXIT

LET'S TALK ABOUT THE "ROLLING LOOP"

When performing a maneuver such as the rolling loop, you will notice a great demand for rudder authority (especially on the downward segment of the maneuver). With this being said, make sure that your model's rudder servo has enough torque and that there is no rudder play of any sort (from gear slop, etc). Once you have catered to these needs, begin the maneuver.

As with all new maneuvers, perform them at a high altitude until you become familiar with them. Also, most pilots naturally prefer to roll in one direction. If you prefer to roll right, for example, it is best to roll right when you do this maneuver the first few times. After you have become proficient, you will be able to roll either left or right when you execute the rolling loop.

Begin by orienting your model parallel to the runway. In the language of aerobatics, we call this position relative to the runway the "Center." When the model approaches the "Center" of the aerobatic box, begin the maneuver.

1. In this example, we will perform the maneuver from left to right. We will roll left, so when left aileron is initiated, you must be at a high power setting (throttle settings will vary depending on your model's power to-weight ratio) and begin to add enough rudder (right rudder) to make the model perform the first 1/4 loop.
2. Continue to hold a little of aileron. You will, however, need to add power and change your rudder deflection accordingly to maintain a round shape (for the loop).
3. At times, you will need to change your aileron input. Some models react differently when rudder is applied (for example, the roll rate may change). Be cautious with your control inputs, and above all else, make sure that you reach your cardinal point. In this step, you are 25 percent complete with the loop, and therefore, your model should be in a perfectly vertical attitude.
4. At this point, begin to decrease the rudder input so that the model will "fall" over the top of the loop to maintain the round shape. You will, however, have to keep on the rudder at different points so that the model tracks straight (in heading).
5. Now, at approximately 50 percent complete with the rolling loop, decrease throttle, as you will soon enter the downward leg of the maneuver. Regarding elevator input, get ready to push, and remember to stay on the left aileron for a constant roll rate.
6. Keep on the left aileron (ever so slightly), and begin to add left rudder to maintain the geometric shape. Your goal is to have the model in a straight downward attitude when you approach the 75 percent completion point of the loop (as seen in the next step).
7. You are now at the rolling loop's 75-percent completion point. Go heavy on the rudder input (meaning, a lot of input will be required), as you need to keep the round shape of the maneuver. Also, you may have to change the aileron rate when you add extreme rudder. Last, remember to make any corrections with the elevator to keep the model tracking straight (in heading).
8. To reach your cardinal point (where you first began the maneuver), you may need to add more throttle and rudder input. Also, now is the time to begin to decrease your aileron (when you approach the "Center") to complete the maneuver.

The maneuver is complete! Take a breath, and enjoy the rest of your flight!

Upcoming Events:

May 7th HCRC Business meeting **CANCELLED DO NOT SHOW UP**
HCRC first annual Heli Fest 2020 (05/23/2020) *CANCELLED*
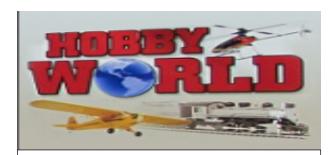*HCRC Open House (06/06/2020)* *CANCELLED*

Airplane of the month : Vought A-7 Corsiar II

Upon entering service, Navy Corsairs proudly displayed colorful squadron markings on their tails and wings. The A-7 Corsair II was designed as a replacement for the A-4 Skyhawk in the attack role. The first combat mission for the Corsair II took place in December 1967. In all, 395 A-7As, A-7Bs, and A-7Es took part in the Vietnam conflict. They flew with a total of 27 Navy squadrons. The much improved A-7E entered service off the Vietnam coast in May 1970. A total of 54 Navy A-7s were lost to enemy fire.

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