Backflip Turnaround

When a half roll is added to the end of a (half) backflip to inverted, it becomes a stationary turnaround maneuver. While this maneuver looks sensational, it’s not much more complicated than a normal backflip. Plus, this and the subsequent “piro flip” set the stage for learning advanced 3D stunts.

Once again, your success starts with knowing the input sequence beforehand. It also helps to perform several backflips to inverted before adding the half roll to reinforce the basic muscle memory: Starting from an upright side hover, simultaneously pull elevator and briefly add positive collective to start an imperceptible climb entering the backflip. Center the collective shortly after the nose starts pitching up to remove any thrust that would cause the heli to start moving backward. As the heli approaches inverted, pull a small amount of negative collective to prevent it from dropping and aim to quickly neutralize the elevator at the instant the heli is level. At the same time you center the elevator, input full aileron to perform a quick half roll to upright. The only significant challenge is remembering to take out the negative collective as you initiate the half roll to avoid thrusting the heli off to the side. As long as the roll is performed with aileron only, you’ll be pleased with how easy this maneuver is to fly.
(Novice) Upright to Inverted Half Piro Flip

While you should visualize every maneuver using a hand-held model beforehand, it’s mandatory before attempting a half “piro flip.” A novice piro flip is a climbing half backflip with a half piro performed halfway through the flip (when the body is vertical). Half piro flips can be initiated as backflips or forward flips, and begin upright and finish inverted, or begin inverted and finish upright. Example: Starting from an upright tail-in hover, simultaneously pull elevator and add positive collective to initiate a climbing backflip. When the body approaches vertical, center the elevator and collective and perform a relatively slow half pirouette. Upon completing the half piro with the nose pointing straight at the ground, switch to pushing elevator to complete the flip to inverted and pull negative collective to maintain an inverted hover.

The keys to learning this version of a piro flip are to perform a slower controlled piro, stopping the piro with the nose pointing straight down, and most importantly, anticipating the elevator and collective switch immediately after the piro. It also helps to keep the maneuver over the same spot if you can delay inputting negative collective until after you start pushing to inverted. With experience, the steps will naturally become blended and incorporate opposite aileron to finish the blended version with the rotor disk level.

KPTR: First timers need to center the backflip inputs before the piro, complete the piro before pushing out, and be ready to push out and pull neg. collective after the piro.
Conclusion

There’s no shortage of people telling pilots what they’re supposed to do, but not many can explain how. Consequently, most flyers hold on to the narrow view that only practice makes perfect. The million dollar question once again is, “practice what?” In the absence of any plan for success, it becomes more difficult to maintain the motivation to overcome challenges when attempting to advance. On the other hand, those who increase their odds of success by planning for it are more motivated to continue putting forth the effort. Thus, while heli flying is very much a reactive sport, it also entails a strong mental component.

The 4 primary ways to ensure steady advancement are: 1. Planning / preparation. 2. A progressive crawl-walk-run (building-block) approach to training. 3. Concentrated practice time. 4. Periodically pushing the envelope to make previous areas of practice seem easier. Contrary to popular belief, those who learn most quickly do not look to learn from their mistakes. Rather, the best flyers in our sport compartmentalize their flights, remembering mainly the things they do that produce favorable results, while forgetting the unfavorable. By repeating the favorable actions often enough, significant segments of their flying become routine and proficiency follows. Similarly, when you encounter challenges, rather than focusing on your mistakes, identifying what changes need to be made to your control inputs to achieve a better outcome is often the best way to work through the difficulty. Put simply, the helicopter does not know the age or experience level of the person at the controls, only what commands it’s receiving. So if you want to produce a better result, you need to pay attention to the commands you are sending it.

Helicopter flying beyond the basics is arguably the most challenging and therefore rewarding form of radio control flying when successful. Those who have invested themselves in becoming proficient heli pilots already know that, and now you know what it takes to know it too. So enjoy, and be proud of your accomplishments.

KPTR: Nothing fuels the drive to improve more than seeing your flights unfold as planned.