Stay out of the Middle

The Fundamentals of Mountain and Canyon Flying - Part 2

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If you want to reduce your turn radius, the simple solution is to just slow down!

A common solution to many aviation perils is the decision and ability to turn around. Turning the airplane is one of the first lessons in flight. Steep turns with little or no loss of altitude are taught from the beginning. If we can prevent pilots from flying into worsening visibilities and weather we could reduce accidents by approximately half. Practically speaking, this means two things: 1) making the decision to turn around and, 2) doing it while you maintain control of the flight situation. In the mountains, a one hundred eighty degree turn is not so much a maneuver as it is strategy. Probably the most important rule in mountain flying is being in a position to turn around at all times. The importance of staying out of the middle of a canyon should be obvious. You must accept the simple fact that flying on one side or the other will give all the available space for you to use in your turn strategy. I know it may feel more comfortable in the middle. You may think it's safer too, but it's a trick! Remember the trees and rocks won't jump out and bite you. By flying in the middle, you have given up valuable space for your turn strategy. The golden rule is "***stay out of the middle.***" If you break the golden rule when you're in so tight a spot that you can't turn around with complete safety, you're in deep trouble. Congratulations, you have just made the worst mistake you can make in the backcountry.

Lori MacNichol

How much space do you need to turn your airplane around? The term radius is commonly used when referring to the actual distance that you will require to get around. Radius is a function of speed. The faster you are traveling over the ground the more space you will need to turn around. So slow down! A lot of your safety and comfort in the mountains will be a result of your knowledge of exactly how much space you need to turn around. This is an experiment in every airplane you fly. The value of an occasional turn in a questionable but safe space is the best personal instructional time you can spend. Knowledge of your needed radius is a comfort that will simplify the more difficult decisions that await you.

The crux of backcountry flying is being able to slow down to a safe, stabilized speed and configuration that will allow you to turn around in a confined area. We call this configuration "Canyon Speed" which gives you "***turnaround strategy.***" Once you drop below the canyon rim and begin to operate in confined areas you must always be thinking ahead to the possibility of a turn.

The "Canyon Speed" is a configuration that is primarily used in the airport environment. This could be defined as 2-5 miles away from your destination airstrip or entering the pattern. It is a configuration in which the aircraft is very stable. I find myself using this configuration in other phases of flight operations while operating below the rim and in confined areas.

To obtain "Canyon Speed" we recommend that you slow down to a safe flap operation speed and use one or two notches of flaps, adjust the power to maintain level flight attitude, and trim for level flight attitude. For example the Cessna 182: slow down put on two notches of flaps (20 degrees) set power to about 15 inches of manifold pressure and trim for level flight attitude and check speed. Speed should be about 70-80kts. WOW you just greatly reduced your turn radius. The beauty of the configuration is this will reduce your workload as you complete your pre-landing checklist, enter the pattern and begin your tasks of overhead observation. The aircraft is slowed and trimmed for nearly hands off flying while you are below the rim in a confined area. You now have time and room to look at the windsock, other aircraft, to see if the runway is clear for landing, locate your abort-point and your aim-point. Once you complete your tasks of overhead observation the next configuration change is a power reduction abeam your aim-point, and begin a decent of approximately 500fpm. The next key position would be looking for the 45 degrees and starting the turn to base and possibly adding an additional notch of flaps. Next would be the turn to final with considering full flaps while on speed and trimming for that steep stabilized approach descending to your aim-point. Even in confined areas and below the rim you can make a standard pattern if you slow down early and configure your aircraft.

Remember there is always risk. Your job is to minimize that risk as much as possible and manage the situation so it

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is comfortable for you and your passengers. The narrow canyons you will face are amplifications of the ground reference maneuvers you practiced as a student pilot. But here we have some real life distractions. Your best defense is ***Stay out of the Middle***, slow down to that configuration of ***Canyon Speed*** and know the speeds and power setting for the different configurations of your aircraft.

Lori MacNichol owns and operates McCall Mountain/Canyon Flying Seminars, a flight school located in McCall, Idaho. The school provides flight and ground training for both primary and advanced pilots to improve the safety of aviation in the Idaho and Utah backcountry. Check out her website at: http://www.mountaincanyonflying.com