



What's Your MESA? (Minimum Enroute Safe Altitude)

By Ron Ridenour, Soaring Safety Foundation Trustee

A mesa is defined as a high plateau or flat tableland with steep sides. When I am flying in a sailplane, this is how I envision my MESA, the invisible "high plateau" altitude that I use to mentally "shift gears" from soaring mode to landing mode.

The use of a MESA is one tool that can minimize risk when flying cross-country. My MESA is 800 to 1000 feet AGL depending on such variables as terrain and wind conditions which may dictate an even higher altitude to allow more TIME to make good decisions.

When learning to fly a glider, we were all trained to enter the landing pattern at an altitude of 800 to 1000 feet AGL. This gives us enough TIME to make good decisions and judgments about our landing. It also mitigates some of the risks that are inherent during this critical phase of flight. At some point during our soaring career, some of us have abandoned that concept. We have decided to take a greater risk during the landing phase of flight by not adhering to our early teachings. I suspect that when you take a flight review in a glider, that you enter the landing pattern the way you were taught. This is one of the purposes of the flight review every two years, to remember and review those safe practices.

Making an off airport landing during cross-country flying should be no different. In fact, if anything, we should be managing the landing risks by making those decisions at an altitude that gives us MORE TIME to make good judgments considering that the landing area may have many unknowns such as obstructions and other obstacles in or around the field.

One pilot I spoke with told me how he progressively "shifts gears" depending on his altitude. On a normal day and when soaring above 3000 feet AGL, he flies at a normal cruising speed of 80 KTS for his glider. Between 3000 and 2000 feet AGL, he slows to a speed closer to best L/D. From 2000 to 1000 feet AGL, he flies at best L/D while he still looks for lift and begins his search for a suitable field or airport. Below 1000 feet AGL, he prepares to land in the field that he has chosen. This still gives him TIME to make good judgments and an opportunity to determine the wind direction and find obstructions in and around the field.

Most contest organizers have embraced and use the concept of the "Finish Cylinder" which dictates a minimum finishing altitude (usually about 800'-1000' AGL or higher). This provides for an adequate amount of TIME for the finishing pilots to enter the landing pattern in an organized way and make a safe landing. However, this concept is directed toward all pilots' whether flying locally or cross-country.

The Minimum Safe Altitude when flying in VFR conditions is defined by 14 CFR Part 91.119 and says, General: Except when necessary for takeoff or landing (notice that thermaling is not one of the exceptions) no person may operate an aircraft below the following altitudes:

FAR §91.119(a): **Anywhere.** An altitude allowing, if a power unit fails, an emergency landing without undue hazard to persons or property on the surface.

This regulation pertains to all aircraft including both pure gliders and motorgliders. The pilots of motorgliders, which are becoming a greater population in our sport every day, need to pay particular attention to this regulation. Most sailplane manufactures are recommending that the motor starting sequence begin at a minimum altitude of 1400' to 1500' AGL. The pilots of these sailplanes should be in





a position relative to a landing area such that should the motor fail to deploy or start, a safe landing can still be accomplished without undue hazard as stated in the regulation.

FAR §91.119(b): **Over congested areas.** Over any congested area of a city, town, or settlement, or over any open air assembly of persons, an altitude of 1,000 feet above the highest obstacle within a horizontal radius of 2,000 feet of the aircraft.

At times a glider pilot may use a congested area to find a thermal, however, this regulation requires that a glider should not thermal at an altitude of less than 1000' above these areas.

FAR §91.119(c): **Over other than congested areas.** An altitude of 500 feet above the surface, except over open water or sparsely populated areas. In those cases, the aircraft may not be operated closer than 500 feet to any person, vessel, vehicle, or structure.

Obviously, this part of the regulation would allow thermaling at an altitude lower than 1000 feet AGL, but is that a prudent thing to do? Are you willing to take the increased risk of an inadvertent stall or spin should an unseen wind current cause such?

Most landing accidents happen as a result of a chain of events that eventually lead to a pilot being forced to make a choice between equally bad outcomes. Many of those accidents end in the loss of life. When a pilot loses control of the aircraft and impacts the ground, the result is often fatal.

How many times have you read about someone landing in the trees along the Allegheny mountains or the scrub brush in the western desert after flying past multiple landable fields and/or airports and out over unlandable terrain? To do this is introducing an unnecessary level of risk, given the navigation tools that we have in our cockpits today.

Personally, I'm tired of hearing the phrase, "He or She died doing what they loved".

I doubt that anyone wakes up in the morning and says, "Today, I'm going to have an accident in my glider that could cause me to lose my life."

The goal of the Soaring Safety Foundation is to have no fatal accidents, period. This is a goal that is attainable and one that every glider pilot should be striving for every time they fly. Taking unnecessary risks are not required to accomplish your goals in soaring.

