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COMMENTARY / THE CLASSIC INSTRUCTOR

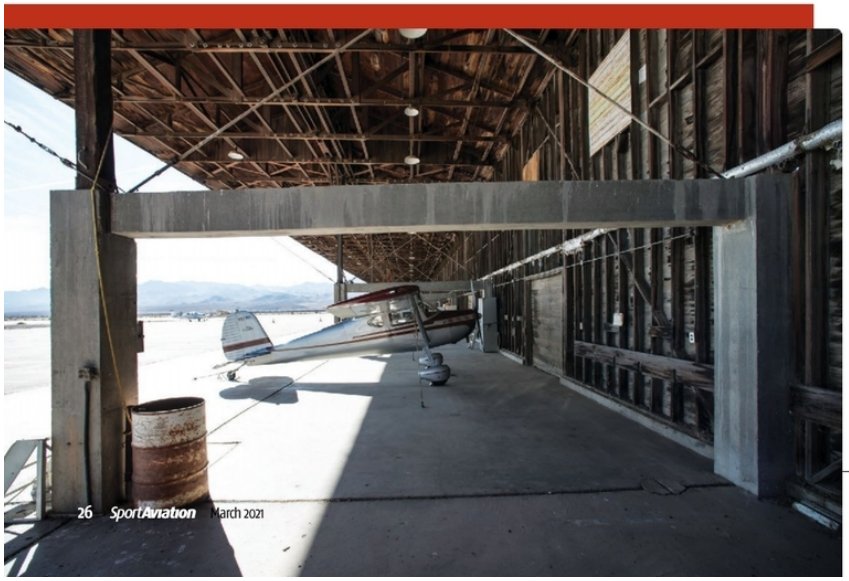
Operating at Unimproved Airports

Things to know before you go

BY STEVE KROG

A REAL-LIFE SCENARIO

A friend calls and asks you for a huge favor. He needs to get to a location approximately 300 miles away to retrieve a vehicle and asks if you can fly him there right away. It would be a two-and-a-half-hour flight versus a six-hour drive. He is aware of a small unimproved public use airport near his destination and suggests landing at that site.



The next nearest hard surface airport is 30 miles away from where the vehicle is located. Can you help him in this predicament? You look out your office window. The sun is shining, and the wind is on the breezy side. If you were in this situation, would you agree to make this flight?

After some thought, the pilot faced with this request decided *not* to make the flight. He called me a day later to tell me of the situation and confirm that he had made the right decision. This private pilot has about 500 hours' total time, all in a Cessna 172, and had never flown off a turf runway or used a runway of less than 3,000 feet.

We discussed the scenario he was facing and came to a like agreement. He had made a good decision based on his level of experience and the conditions he would have had to deal with to attempt the flight. Here are a few of the items we discussed.

SUGGESTIONS BEFORE DEPARTING

Turn to the FAA's *Chart Supplement* (formerly the *Airport/Facility Directory*) and look up the airport the friend suggested for landing. Using either the printed version or the online version found in subscription programs like ForeFlight, you find it is unattended and has only a turf runway, 01/19, that is 2,080 feet long. Further, trees are located on both ends. The field elevation is 891 feet. Under "AIRPORT REMARKS," deer and turkeys are on and in the vicinity of the airport.

That presents the first potential problem. You were never allowed to fly off turf runways during your flight training and, consequently, have never done so. Unfortunately, this is a rule at many flight schools today.

What are the current and short-term future weather conditions along the intended route of flight? A call to 1-800-WX-BRIEF would help satisfy this concern. The forecast called for good VFR weather the remainder of the day and on into the early evening. But it also caused a bit of concern. The surface winds are from 260 degrees at 15 knots with peak gusts to 20 knots. The temperature is also hovering around 90 degrees. Now you are faced with a potential second and third challenge.

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Both the surface winds and the temperature could present problems. You can anticipate the need to make a crosswind landing at the destination, and the temperature is certain to affect the aircraft's performance. And you have not attempted any crosswind landings in months.

Time to get the pilot's operating handbook (POH) out and review the takeoff and landing performance charts. The POH is something probably not looked at since the day of your private pilot checkride! Calculating the landing distance is initially easy. The chart indicates it will take approximately 1,100 feet to land and stop. However, the fine print at the bottom of the chart states:

For every 20 degrees above 59 degrees, add 10 percent to the needed landing distance, 59-79-89-degrees. The temperature is 30 degrees above the standard temperature so add 15 percent.

To clear a 50-foot obstacle (remember there are trees at both ends), add 15 percent to your landing distance. Adding these figures, 1,100 feet + 165 feet + 165 feet = 1,430 feet, you're left with about a 650-foot safety margin.

Another good safety check is to review the area surrounding your desired destination. Are there better, safer airports in the vicinity? A good solid Plan B is to have an alternate airport in mind should you find your destination airport to be unusable after looking it over.

However, these numbers are based on using flaps for the landing. The distances will be quite different if landing without flaps! Remember, too, the numbers found in the POH are based on a clean new aircraft with a new engine and propeller. The landing distance calculations are now quite different. If you opt to land without using flaps due to the crosswind, the landing distance with no wind, at sea level, and at 59 degrees indicates 1,500 feet is needed. Adding these figures, 1,500 feet + 225 feet + 225 feet =1,950 feet, leaves you with just a 130-foot margin for error.

The crosswind component chart shows little or no help for reducing the landing distance, as the wind is 70 degrees to the right of the center of Runway 19 ranging from 15 knots to 20 knots. Referring to the POH, the maximum published crosswind component for your airplane is 15 knots at 90 degrees. Will your aircraft handle a 20-knot crosswind? Can you handle it? Another potential challenge.

So much is still unknown about the destination airport before a decision can be made about landing there. It is time to refer to the *Chart Supplement* again and find a phone number for your intended destination. The number is frequently answered by the local police department. Explaining your situation, they are willing to assist. Here are some sample questions to ask.

- Are they familiar with the airport?
- Have they visited it in the past week? If not, are they willing to do a quick visual inspection?
- Has there been any measurable precipitation in the area in the last three days? (A soft, muddy runway can cause serious problems!)
- How tall is the grass on the runway?
- Has it been cut recently?
- Are there obstructions like big round bales or machinery on or near the runway?
- Has anyone used the runway recently?
- What is the condition of the runway surface? Does it have badger or varmint holes? Are there ruts from farm equipment traveling on it?
- Will local police personnel drive the length to check it out?

All these items need to be checked and factored into a good plan of action for landing at this airport.

Another good safety check is to review the area surrounding your desired destination. Are there better, safer airports in the vicinity? A good solid Plan B is to have an alternate airport in mind should you find your destination airport to be unusable after looking it over. The alternate airport may be 10-30 miles away from where your friend needs to go, but would it not be better to be slightly inconvenienced than having to explain a landing incident to authorities?

It is easy to see there are many things that must be taken into consideration when planning a safe flight to or from an unimproved airport that you may not have familiarity with. Many of these things, including rules of thumb, are never taught in many flight schools today.

When was the last time you practiced doing short-field takeoffs and landings? Probably at your last flight review. You have been flying off a 5,000-foot hard surface runway, and concern for length has never been an issue. It may be wise to practice one or two before departing on such a flight.

Do you know how to quickly estimate the length of the runway? Make a low approach over or next to the runway at the recommended approach speed. In this example, use 70 mph. The aircraft is traveling at 6,160 feet per minute or 102.6 feet per second. Time your flight over the length of the runway, then go around. If it took 15 seconds to fly the entire length, 15 x 102.6 = 1,539 feet. While timing, visually inspect the runway surface for water, ruts, holes, etc.

If the POH states that a no-flap approach should be flown at 70 mph and you decide to add an extra 5 mph to the approach speed for safety, how much additional runway will you need to land? A good rule of thumb is that for every 1 mph faster than the recommended approach airspeed, you will use an additional 100 feet to land, whether floating before touchdown or on the rollout after touching down.

And finally, are there any applicable notices to airmen or temporary flight restrictions pertaining to your route of flight, the destination, or the alternate airport?

Using the example outlined above, it is easy to see there are many things that must be taken into consideration when planning a safe flight to or from an unimproved airport that you may not have familiarity with. Many of these things, including rules of thumb, are never taught in many flight schools today.

There is absolutely nothing wrong, or unsafe, about using unimproved runways provided you do your homework and preflight planning. Many of these airports offer interesting things to see and do. Do not be afraid to expand your flying horizons, but do so safely and competently. EAA

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Writer's Note: *Today, the FAA places heavy emphasis on flight instructors to employ scenario-based teaching methods when training students. This example may be a good one for instructors to begin using. It could save some future bent metal and wounded pride.*

Next month's issue will discuss the arrival, landing, and departure suggestions and rules of thumb when operating from an unimproved runway.