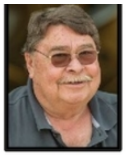
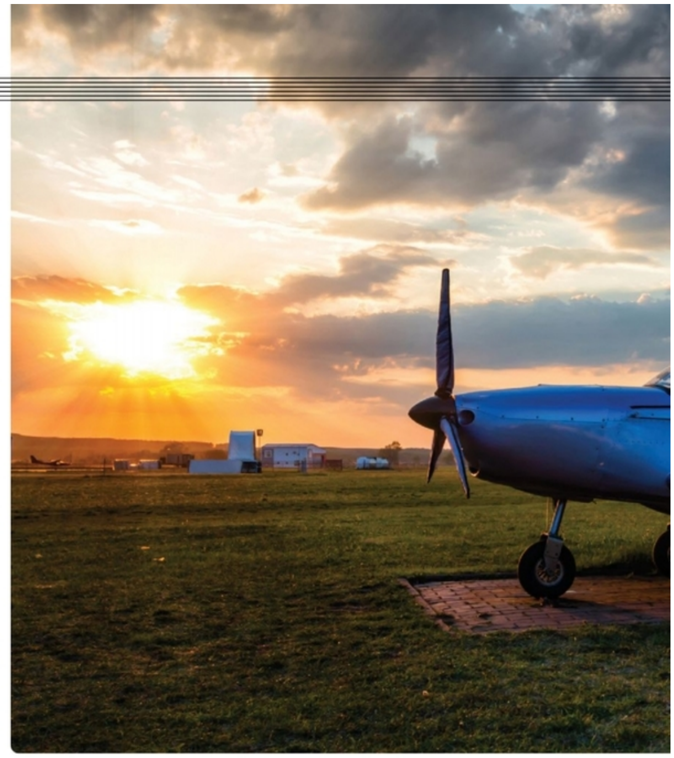


STEVE KROG

COMMENTARY / THE CLASSIC INSTRUCTOR



PART 2

Operating at Unimproved Airports

More to know before you go

BY STEVE KROG

STARTING WITH A REAL-LIFE SCENARIO

In the last issue of *EAA Sport Aviation*, we discussed a situation where an acquaintance asked a pilot friend to make a flight to an unimproved airport. We reviewed a number of suggested actions to take before committing to such a flight. The pilot decided not to make the flight due to the challenges faced, which was a good decision. However, let us assume the pilot did opt to make the flight so we can explore that hypothetical scenario.

The conditions include a near 90-degree Fahrenheit day and surface winds of 260 degrees at 15 knots with gusts to 20 knots. The unimproved and unattended airport has one turf runway, 01/19, that is 2,080 feet long with tree obstructions on both ends. The pilot had never before operated from a turf runway either in training or for pleasure flights. The aircraft being flown is a Cessna 172P in relatively good condition.

If you were the pilot of this flight, what actions would you take while en route to the destination? You have already calculated the landing distance required before departure and determined it was tight but doable if you were at the top of your game.

One additional observation to make while inbound and scanning the surrounding area is if there is an escape area to turn toward should you have to make a go-around, encounter engine problems, or experience poor aircraft performance.

WHILE EN ROUTE

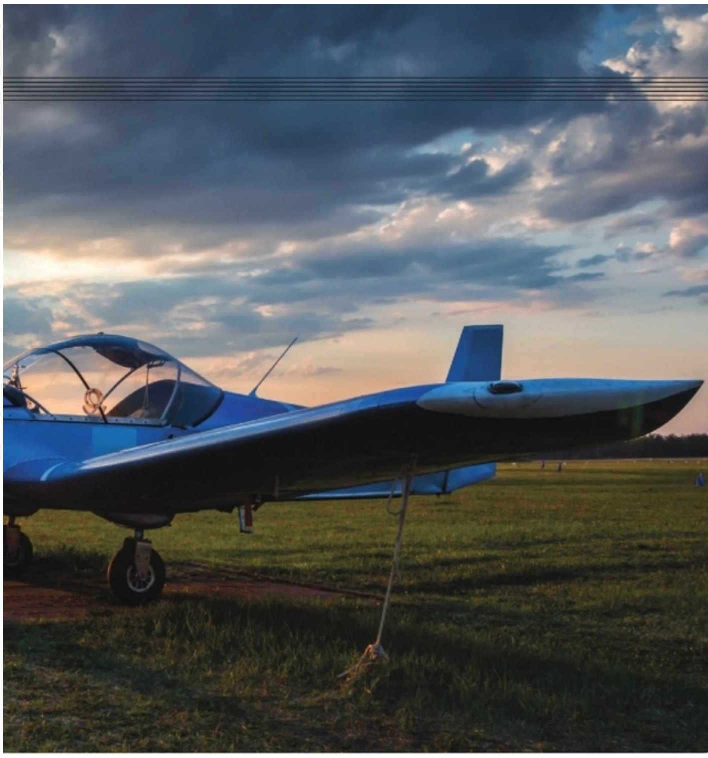
Many airports today have either automated weather observing system or automated surface observing system services available. If making this flight, it would be a good idea to monitor these frequencies of the airports along your route of flight. They will tell you if the surface winds are changing direction and increasing or decreasing in velocity. It's summer; be observant. Are there any cloud buildups indicating unstable air and possibly a spotty thunderstorm?

Approaching the destination airport, begin looking for surface wind indicators. Is there any smoke or steam being emitted from a nearby manufacturing facility? In what direction is the smoke or steam moving?

Many homes, businesses, and schools display flags. Depending on how extended they may be, you can get a good feel for both wind direction and velocity. Surface water on lakes and ponds also helps. The smooth side or edge of the water body indicates the direction from which the wind is coming. Full leaf trees are also a good indicator. Leaves have a shiny side and a dull underside. If all you see is the dull side of the leaves, you will know from which direction the wind is coming.

Is there an attended airport within 8-10 miles? You might call that UNICOM and get a visual surface wind report.

PHOTOGRAPHY BY LEONARDO CORREA LUNA



Once you're approximately 5 miles from your destination, begin scanning the area surrounding the airport. Are there houses, farm buildings, or other vertical obstructions located off either end of the runway? The *Chart Supplement* told us there are both trees and power lines on either end, but what is located just beyond? What obstructions are located on either side of the runway? Is the runway carved out of a growth of trees or other terrain obstructions, so the clear area is not much wider than a couple of wing lengths? Perhaps the local farmer has planted a crop on either side of the runway. If that is the case, there might be machinery parked in the vicinity of the runway. The bordering cover crop next to the runway might also be hay, and big round bales may be present. (I've encountered each of these situations over my years of flight.)

One additional observation to make while inbound and scanning the surrounding area is if there is an escape area to turn toward should you have to make a go-around, encounter engine problems, or experience poor aircraft performance. The runway may be surrounded by obstructions of one nature or another, but just beyond on either side, there may be an open field should you need it in an emergency.

STEVE KROG

ARRIVAL

Upon arrival at the destination, what would you do? Many would simply pass overhead, look for a windsock, and proceed to land. But in this example, we are dealing with a rarely used unimproved runway.

While passing overhead, look for a windsock or use another means for confirming the surface wind. Also, scan the area immediately adjoining the runway for obstructions such as machinery, hay bales, etc.

Planning a low approach and a go-around at this point would be most advisable. When turning onto final, you will have the opportunity to get a feel for or understand the effect of the crosswind and possible turbulence off the trees.

Then, making a low pass next to the runway provides for a scan of the runway surface. Look for such things as standing water or a shiny reflection off the dirt surface. A shiny reflection indicates that water had been standing in the area, which means the runway surface may be quite soft in that spot.

Are there any varmint holes observed? Here in Wisconsin, we sometimes have a badger that loves to dig holes at night, large enough for a nose or main gear wheel to drop into. Scan the turf surface closely for this type of obstruction.

While making the low pass, try to get a reading on the length of the grass. Is it 4-5 inches tall, or is it a foot tall or more? Remember, this is a seldom-used unimproved runway that you will be using. The length of grass generally does not create a problem for landing, but it will definitely have a negative impact on the impending takeoff.

One last suggestion while flying the low observation pass: Try to pick some sort of landmark at the approximate midpoint. Then, if you are not comfortably on the ground and rolling out at this point, this visible reference point will help make the decision to go around.

Once the low observation pass and the go-around have been executed, it is time to fly a traditional pattern and make the approach and crosswind landing. Do not get in a hurry and rush the approach as it will only cause it to be unstable. Remember, the more things that you can make constant in the traffic pattern, the fewer things that will needing adjustment while on final!

Fly a normal pattern, decide to use either partial or no flaps for the landing, and then think ahead and visualize the approach and landing. In this example, the approach and landing will be made on Runway 19. The crosswind will be about 70 degrees from the right. How will the wind affect the downwind and base leg of the pattern? Thinking ahead allows you to establish the proper crab angles automatically.

Turning onto final, would you prefer using the cross-control or the crab-angle method for maintaining a straight ground track with the runway? Either method is acceptable. Whatever you are most comfortable with is the method that should be used.

The trees and other obstructions running parallel to the runway can either be a benefit or a problem for the short final, round-out, and touchdown. Be prepared.

Here in Wisconsin, we sometimes have a badger that loves to dig holes at night, large enough for a nose or main gear wheel to drop into. Scan the turf surface closely for this type of obstruction.

The low pass down the runway should have provided some clue to the wind's impact. Is there a significant crosswind push from the wind coming over the trees? Or is the runway somewhat protected and the crosswind all but dissipates close to the ground?

Once power has been reduced and the flare and round-out begun, do not forget to keep flying the airplane by keeping the crosswind controls in their proper position. Pilots will often relax on the controls once the wheels touch and forget to keep flying the airplane!

After experiencing some turbulence over the trees, you land relatively smoothly and safely. The passenger is dropped off, and it is time to get back in the air headed for home.

DEPARTING

A good pilot will retrieve the pilot's operating handbook and recalculate the takeoff distance required given the current wind, temperature, and runway surface conditions. In this example, with a temperature of about 90 degrees Fahrenheit, the takeoff chart states it will take 1,425 feet to lift off and clear a 50-foot obstacle. Factor in the headwind component of 12 mph (calculated from the standard FAA Crosswind Component Chart) and the takeoff distance is shortened by approximately 10 percent. However, the POH also tells us to add 15 percent to the distance when operating off a turf surface: 1,425-142 feet = 1,283 feet. Now add 15 percent: 1,283 + 193 feet = 1,476 feet.

The book states it can be done in this airplane. However, these numbers are based on a factory-new aircraft. In what condition is the aircraft being flown in this example? Assuming it is kept in good condition, if you were the pilot, would you proceed with the takeoff?

This is where locating runway references enters the equation. When making the low pass, you noted a visual reference point. Keeping this point in mind, the takeoff charts says you will be airborne in approximately 900 feet.

Apply 10 degrees of flaps and align the aircraft on the runway so as not to waste a single foot of length. Then use the short-field takeoff technique: brakes are applied, full power is applied, and the brakes released. If airborne at the halfway point, no problem. If not, shut it down. There is plenty of runway to safely come to a stop.

In this example, you are off the ground at 900 feet, proceed to climb using the best angle airspeed, and then clear the tree line and are on your way home. Another experience gathering flight to enter into the logbook! EAA

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