Non-Towered or Uncontrolled?

Tips for Safe Pilot-Controlled Airport Operations

Final approach, Runway 4, into Taos Regional Airport, at Taos, N.M. This high altitude airport (7,095 feet MSL) is a typical non-towered airport with Class G airspace at the surface and a Transition Area lowering Class E airspace to 700 feet AGL over the airport's general area to help facilitate its non-precision approaches.

by Matt McDaniel

General Aviation (GA) flying in the United States is unparalleled. The U.S. has more airports and runways open to the flying public than any other country, by a wide margin. The numbers vary by a few hundred, but most sources say there are currently between 5,100 and 5,200 public-use airports in the United States. Of course, there are literally thousands of additional private-use airports too. In fact, most sources claim the U.S. has over 14,000 private-use airports and that up to one-third have at least one paved runway. While that includes heliports and seaplane bases too, those facilities comprise less than 20-25% of the total. Military-only facilities (around 275) are excluded from the figures above. So, we fixed-wing-land pilots have roughly 4,000 public and 11,000 private airports in the United States to choose from. To lend more insight to just how staggering those numbers are, consider this: The other top 10 countries, in numbers of airports, **combined** would still have fewer airports than the United States has whether you're counting public airports only, private airports only, or both!

In spite of those impressive statistics, the number of controlled (towered) airports in the United States is quite small in comparison. Leaving roughly 95% of all public-use-land airports without any air traffic control tower (ATCT) services. Yet, the versatility of the King Air series of aircraft makes the vast majority of those non-towered airports accessible to their crews and passengers. But, "accessibility" does not necessarily equate to "safety" and "non-towered" does not automatically imply "uncontrolled."

In 20 years as a professional pilot, my domestic flying has afforded me the distinct pleasure of landing in 49 of the 50 states and at over 1,000 different airports. The experience has given me broad and varied experience in non-towered airport operations and in dealing with the other pilots making use of those same airfields. Unfortunately, I am consistently surprised by how poorly and non-standardized many of those pilots operate in and out of such airports.

Anytime one tries to make a list of operating tips for pilots, the starting point is the Aeronautical Information Manual (AIM). The AIM is *the* foundation of operational knowledge and principals within general aviation. Yet, there are also many additional commonsense tips that certainly can be applied, while remaining within the operational parameters of the AIM. Additionally, it is routinely revised and updated and, thus, can be used to stay abreast of recent changes, clarifications, and additions to the information contained therein. I've overheard many instructors over the years say that there is no such thing as an uncontrolled airport. They claim all airports have some method of control, either via an ATCT or via pilot-control procedures, and that the term "uncontrolled airports" is never used in the AIM. While I totally agree with the premise of these comments, in that all (public use) airports have controlling procedures in place, it is simply not factual that "uncontrolled" is never used in the AIM (for example, AIM Section 4-3-26 is entitled, *Operations at Uncontrolled Airports with ASOS/AWOS*). But, the spirit of their comments remains accurate, in that airports are better thought of as being either *tower-controlled* or *pilot-controlled*. Of course, whenever there is an accident at a pilot-controlled airport, the mainstream media just loves to throw around the term "uncontrolled." For that reason alone, it's probably a word pilots should consider striking from their vocabulary, when referring to non-towered airport operations.

One additional point worth noting is that I will refer to VFR Sectional Charts several times in this article. Since King Airs tend to operate on IFR flightplans for the majority of their flights, sectionals are an often overlooked requirement and safety enhancement. Without going into a soapbox sermon about legalities, I'd say that having a current copy of the appropriate sectional at the ready just makes good sense, especially when operating to or from non-towered airports. It is also common practice to cancel IFR flightplans in the air when the destination airport is in sight and continue the arrival under VFR (a time when a visual navigation chart is inarguably required under most operating rules and specifications).

Communications

In my years and travels flying to U.S. airports, I have developed two pet peeves when it comes to non-towered airport communications, which I will distribute evenly between VFR and IFR operations. For VFR operations, it is when pilots state their positions in relationship to local

landmarks, rather than distance and direction from the airport. Non-local pilots are not familiar with those same landmarks and, thus, such reports are totally worthless to them. Keeping VFR position reports a simple formula of distance, direction, and intentions (and altitude when pertinent), will always have the desired effect of keeping adjacent pilots informed, whether they know the area well or there for the first time. The AIM suggests the initial inbound call be made 10 miles out, followed by calls upon entering the downwind, base, and final legs and when clear of the runway. For IFR operations (in both VMC and IMC), I often hear pilots announcing their position in relationship to a specific fix name. While the AIM does suggest self-announcing at the Final Approach Fix (FAF) and Missed Approach Point (MAP), it uses examples which give those positions in relationship to the runway, not the fix itself. VFR (and non-local IFR) pilots are generally not familiar with these fix names (or locations). Therefore, again, position reports in relationship to the airport or runway are the most meaningful and informative to other pilots.

In either case, the AIM recommends stating the name of the airport at both the beginning and the end of each transmission. This is so that listening pilots, who only catch a portion of the transmission, have twice the chance of at least hearing which airport the transmitting pilot is operating to or from.

Examples:

VFR: "Sullivan County traffic, King Air 12345, 10 miles northwest, descending out of 4,000 feet for downwind entry, runway 18, Sullivan County."

IFR: "Sullivan County traffic, King Air 12345, five mile final, runway 18, on the GPS approach, Sullivan County." (Five mile final being the position of the FAF on the specified approach procedure.)

Other communication issues to consider are the variety of radio frequencies used at non-towered airports. Most will have a published Common Traffic Advisory Frequency (CTAF) that is to be used for transmitting position reports such as the examples above. However, the same frequency can often also serve as the Unicom frequency. When using it as such, the pilot would address radio transmissions to "[Airport Name] Unicom," rather than "Traffic." Unicom can be used to gather and relay information such as weather and airport conditions (airport advisories), and facilities and services (fuel, ground transportation, catering, maintenance, etc.). In lieu of a CTAF or Unicom frequency, pilots should default to the standard Multicom frequency (122.9) to transmit traffic advisories. Multicom is most often utilized at unattended airports with no services (or limited self-services only). However, even Multicom is typically published for public-use airports that utilize it. A second Multicom frequency does exist (122.925), but it is primarily designated for use by forestry, fire suppression, and environmental monitoring flight operations.

Traffic Pattern Entry and Exit

To be blunt, I am routinely disappointed by how many pilots fail to educate themselves on a non-towered airport's published traffic patterns before they come barreling into the traffic pattern. Of course, it's common knowledge that the standard traffic pattern incorporates all left-hand turns. However, non-standard patterns exist at many airports for a variety of reasons, such as terrain avoidance, noise abatement, or obstruction clearance. Some airports have non-standard patterns on all runways, while others have a mix of left and right traffic patterns. At towered airports, ATC is as likely to assign right as they are left patterns, based upon their needs. So, we should all be proficient flying patterns in either direction. At non-towered airports, it is the PIC's responsibility to determine the proper pattern direction prior to arrival. Doing so is not difficult. This information can be found in the Airport/Facility Directory (A/FD), on Sectional Charts, and in all manner of airport guides, such as AOPA's Airport Directory, FlightGuide, or AC-U-KWIK (Figures 1 and 2). Additionally, most such sources are now available in electronic format and can be carried in your cell phone, laptop, or Electronic Flight Bag (EFB) and referenced at the touch of a button. Published pattern information is also incorporated into many modern GPS and FMS units (even the non-certified/portable varieties). Finally, Jeppesen also publishes non-standard traffic pattern information on their airport diagram charts, in a bold box inserted into the plan view of the airport. There is really no reason to not know and fly the proper published pattern at any non-towered airport. Not doing so, and having the attitude that "standard is good enough" can quickly put two aircraft going head-to-head in opposing traffic patterns. This also applies to IFR circle to land operations where, upon reaching Minimum Descent Altitude (MDA) and commencing the visual circling maneuver, the PIC should make all efforts to fit into the normal flow of traffic at the airport. Finally, if all else fails, most airports still maintain the segmented-circle, visual traffic pattern indicator somewhere on the field. When in doubt, overfly the airport above pattern altitude, and reference the segmented-circle before subsequently descending to enter the proper pattern.

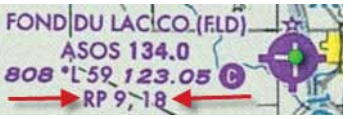

Figure 1

When departing an airport and exiting the pattern, the same directional standards should be applied. Straight out departures are generally permissible (assuming a VFR departure, without other ATC, noise, terrain, or obstruction limitations). However, when a turn is required, the AIM suggests an initial 45-degree turn, in the same direction as the traffic pattern, when within 300 feet of pattern altitude, and beyond the runway's departure end. Thereafter, the turn on-course should not be initiated until above pattern altitude.

Airspace Considerations

The vast majority of non-towered airports have Class G surface areas (uncontrolled airspace at the surface). A variety of transition areas may exist over those airports, and at some depicted lateral distance. Typically, airports that lack any instrument approach procedures (IAPs) will have no specific transition area and will, thus, change from Class G to Class E (general controlled airspace), at 1,200 feet AGL (depicted as blue shading on a Sectional chart). In remote or sparsely populated

Figure 2

areas, the floor of Class E may be at some higher (non-standard) altitude. This will be depicted on sectionals, using offset blue lines and the specific airspace altitudes will be noted adjacent to those lines (Figure 2).

Airports with non-precision IAPs will often have a specified transition area that lowers the floor of Class E to 700 feet AGL over the airport's immediate area (depicted using magenta shading on a sectional chart). In most congested areas, it is not unusual for a single transition area to encompass multiple airports. Occasionally, a non-towered airport will have Class E airspace down to the surface (depicted with a magenta, dashed, line on sectionals). This is most often due to the existence of a precision IAP at the airport (allowing low IFR operations to remain in controlled airspace throughout the entire approach and landing) (Figure 3).

For IFR operations, one important reason to know what the airspace specifics are is to have a better idea what to expect upon exiting IMC and continuing visually to landing. If weather conditions are IMC in the traditional sense (less than 3SM visibility and 1,000 foot ceiling), you might not be expecting to encounter any VFR aircraft in the pattern. However, if the airport is in Class G airspace (potentially from 1,200 feet AGL or 700 feet AGL to the surface, depending on the existence of a transition area) VFR aircraft can legally operate with 1SM visibility and clear of clouds in such airspace [FAR 91.155(a)]. This is even true at night, if their operations are for the purpose of traffic pattern and

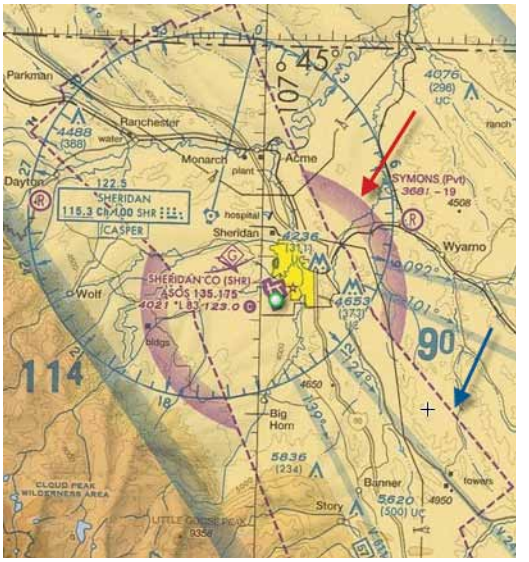

Figure 3

landing practice and they remain in close proximity (within ½SM) to the airport [FAR 91.155(b)(2)]. So, extra vigilance and communication is merited in those situations.

The majority of Class D airports (towered-controlled, but generally without radar services) do not have an operational control tower 24/7. Instead, the tower usually closes at night. When this happens, the airspace reverts to Class E (to the surface), and the airport becomes effectively non-towered

(uncontrolled or pilot-controlled). Most often the tower frequency then becomes the CTAF, but sometimes CTAF will be published as a different frequency altogether. As with determining proper traffic pattern directions, when your flightplan calls for operating out of a part-time-towered airport after hours, check all available resources to determine the tower's operating hours, CTAF, and which frequency to use for operating any Pilot Controlled Lighting (PCL) that might be available (Figure 4). While PCL is most often operated on the same frequency as CTAF, that is not always the case. In cases where PCL and CTAF are assigned different frequencies, both will be published in the A/FD, on Jeppesen Airport Diagrams, and in a variety of other sources. That little nuance can be a real "gotcha" on a night IFR approach into a non-towered airport, causing an unplanned missed approach (not because the weather was below minimums, but because the dark airport never came into view as the crew is trying to turn on the lights using the wrong frequency).

Figure 4

Conclusion

There is nothing inherently difficult or dangerous about operating to and from non-towered airports. It's something most of us began learning in our first few lessons. However, it seems that it is difficult to really do it well, with a focus on standardized procedures and AIM compliance. Yet, the importance of doing just that cannot be overstated. The devil is in the details. Those standard procedures and operating principals are what allow airports to exist and operate without the benefit of ATC. If ATC were to become a necessary requirement to operate safely at any airport, the number of airports accessible to us would plummet overnight, as budgetary constraints would never support it. So, it is up to us to keep all airports controlled. For even without an operating control tower in place, it is us, the pilots in command, that prevent such airports from ever being truly uncontrolled. KA

About The Author: Matthew McDaniel is a Master and Gold Seal CFII, ATP, MEI, AGI, & IGI. In 20 years of flying, he has logged nearly 11,000 hours total, approximately 4,500 hours of instruction-given and over 2,500 hours in King Airs and the BE-1900D. As owner of Progressive Aviation Services, LLC (*www.progaviation.com*), he has specialized in Technically Advanced Aircraft and Glass Cockpit instruction since 2001. Currently, he's teaching clients nationwide, via personal flight training and seminars, providing contract pilot services in a wide variety of corporate aircraft. He's also a former airline and corporate pilot, having flown a wide variety of airliners and corporate jets and holds five turbine aircraft type ratings. Matt can be reached at: *matt@progaviation.com* or (414) 339-4990.