

PARTNER'S PERSPECTIVE

» *A View from the Right Seat*



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No Need to Get Lost Navigating Around the Airport

by Laurie Einstein Koszuta

We were about a mile out on our final approach to a busy and unfamiliar airport. At that distance, the runways and taxiways looked like a mass of intersecting roadways going in different directions. At 500 feet above the runway, I saw a yellow chevron, as well as large white stripes that looked like piano keys, the vast runway designation number and dashed lines. Once we landed, I knew we had to clear the runway and exit onto a taxiway as soon as possible. But which taxiway? I also knew that we needed fuel and wondered what direction that would be. Where was the FBO for that needed bathroom break? Is it possible for non-pilots and passengers to decode the signs and markings found around the airport? The answer is a resounding yes!

Taxiways and runways are like on-and-off ramps intersecting with major highways. Both use various signage and markings to help navigate their paths. Yet, signage around an airport, particularly busy ones, can look like a dizzying array of hieroglyphics to the non-pilot. How do you read all those symbols, letters, numbers and painted surfaces without becoming disoriented? Without some references, it can be quite confusing. There are various colors of signs, painted bars across the taxiways with yellow solid lines near dashed lines, others with prominent white stripes, and so many other markings.

"Don't feel bad," said Mike Radomsky, COPA President Emeritus, Platinum CSIP and owner of Mike Romeo Flight Training in Las Vegas. "Pilots can also find the signs confusing. It can take a little getting used to, especially for pilots who don't fly often or are based at their little home airport and do the same flight every weekend to another small airport. It is easy to forget what some of the signs mean."

Radomsky notes that airport signage can be compared to street signs. Drivers look at stop signs, lane markings and other indicators to determine where and how to move on roads. There is comparable signage at airports that informs pilots on where to stop, what lanes to follow and how to move about. The critical difference at many airports is that ground and tower controllers orchestrate the movement around ramps, taxiways and runways.

An interesting fact is that markings and signage are standardized at airports around the world. Because the layout of each airport dictates its rules, not all airports need every available type of marking or signage on their taxiways and runways. The level of marking detail corresponds to the amount of traffic volume at an airport. For instance, airports with scheduled airline traffic or those that cater to general aviation jet traffic tend to have more comprehensive markings. In contrast, smaller airports with less traffic and fewer services may only need minimal markings and signage.

There are six specific types of signs and markings found at paved airports. All denote specific messages that give pilots information, enhance safety, aid airport operations and improve efficiency. These include mandatory instructions, location information, directional communications, destination information and runway distance remaining markers. The signs are color-coded with messages mounted on large black, yellow or red signs, or painted on surfaces near or on the taxiways and runways. If the markings are directly on the runway, they are usually painted white, while the edges can be yellow and black.

Mandatory instructions signs, with white lettering on a red background (see examples below) are usually mounted on both sides of a taxiway to denote the start direction for each runway. These can be paired with location signs, identified by a yellow letter of the alphabet on a black background, to inform pilots about their current taxiway. Some airports are so large that they run out of single letters and then use two letters as identifiers. For example, a taxiway can be called Alpha-Alpha or Alpha-Bravo and so on.

TAXIWAY LOCATION SIGNS



**Mandatory
Instruction Signs**

Destination signs (see image below) which are visible along the taxiways, have yellow backgrounds with black lettering and typically include an arrow pointing toward a specific destination, such as runways and FBOs.



Destination Sign

Directional signs (see example below) like destination signs, have a yellow background with black lettering. They often use an arrow to indicate the location of a nearby runway with information on where the pilot should taxi.



Direction Sign

Runway distance remaining markers (shown below) have a black background with white numerals and can be installed along one or both sides of the runway. The number on the signs indicates the remaining distance in thousands of feet of runway remaining.



Runway Distance Remaining Marker

What about the painted surfaces of the taxiway and runways and what do they tell a pilot? “They tell the pilot a lot,” said Radomsky. “When leaving the ramp area, pilots follow a yellow line along a designated path leading to the ‘hold short’ position near the runway. The hold short area is marked with two solid lines and two dashed lines across the width of the taxiway (see example below). Pilots must stop as they approach the solid lines and wait for ground or tower clearance to proceed. However, if a pilot is exiting the runway, no clearance is required to cross these lines. Pilots remember this rule by saying they can ‘dash across the dashes.’”



⌞ **Hold Short Runway Markings**

“If pilots enter or cross a runway without permission, it can be a serious safety violation,” Radomsky emphasized. “It is like lanes on a highway. You can cross the painted divider from the side of the dashed line but not on the side with the solid lines.”

The numbers written on the runway, Radomsky further explained, are not random; they are based on their compass headings and rounded to the nearest 10 degrees.

“Runways operate in both directions depending on prevailing winds and are typically marked with only two digits. For example, if a runway heading is 268 degrees that runway would be designated 27 or approximately west. The opposite end of the same runway would be labeled as 09, although it would be 088 or essentially east.”

Busier airports often have parallel runways facing the same direction to accommodate more aircraft takeoffs and landings. Letters are used to distinguish between these parallel runways as part of their designation numbers. For example, a large L painted next to the number indicates the left runway and an R indicates the right runway. If there are more than two runways, the airport will add a C to denote the center runway.

“Some airports are so large that they have more than three parallel runways,” Radomsky said. “Those runways may be pointing in the same direction but to avoid confusion, the Federal Aviation Administration (FAA) permits using one heading number higher or lower than the others. For example, the designation of four parallel west-pointing runways may be 27L, 27C, 27R and 28.”





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There is a lot of information for pilots as they head for a runway or use the runway to take off. Threshold stripes are large white markings located at the beginning of the runway and extend across its width. A touchdown zone consists of markings along the runway that help pilots during landing (refer to photo, at right).

What if a runway is closed to traffic? Before traveling, pilots can learn about specific runway closures on NOTAMs (Notice to Air Missions). The NOTAM will specify whether the closure is temporary or permanent. This type of information is also broadcast on the ATIS (Automatic Terminal Information Service) frequency. A large X or cross indicates a closed runway at each end. For permanent closures, the yellow cross may be painted over the designation numbers. In the case of temporary closures, which could be for repairs, a raised and lighted yellow cross is often used at each end of the runway.

Approach lighting is another complex aspect of runway management, with many different types and uses. Lighting is necessary particularly at night to enable pilots to see the runways and read the taxiway signs. There is edge lighting, lighting to mark the center of the taxiway and lighting embedded in the asphalt.



➤ **Runway markings explanation**

Understanding airport signs and markings doesn't have to be a mystery for partners. Ultimately, pilots are the ones who need to read and interpret the airport nomenclature, but it can be quite beneficial for partners interested in helping navigate around an airport. ⊕

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