

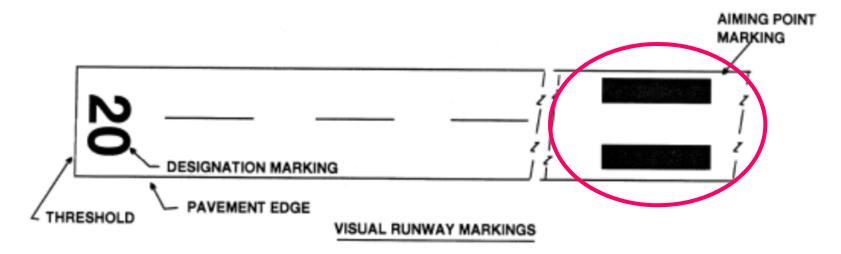
## Understanding Airport Signs, Markings and Lighting

NOTE: For additional information on Airport Marking Aids and Signs, refer to the Aeronautical Information Manual (AIM) Chapter 2, Section 3

Use space bar to advance slides

### Visual Runway Runway Markings

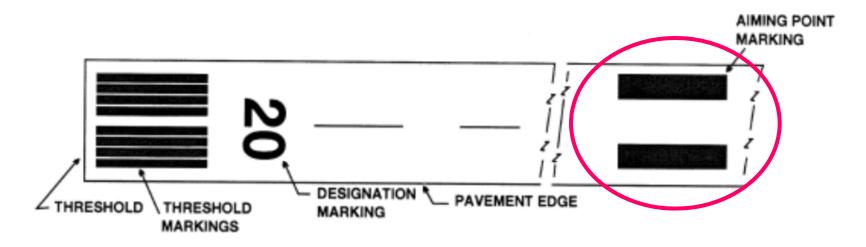
Runway Aiming Point Markings are located on each side of the runway centerline and are approximately 1000 feet from the landing threshold



**NOTE:** Aiming point markings are only required at airports with 4000 feet or more of runway and with jet operations

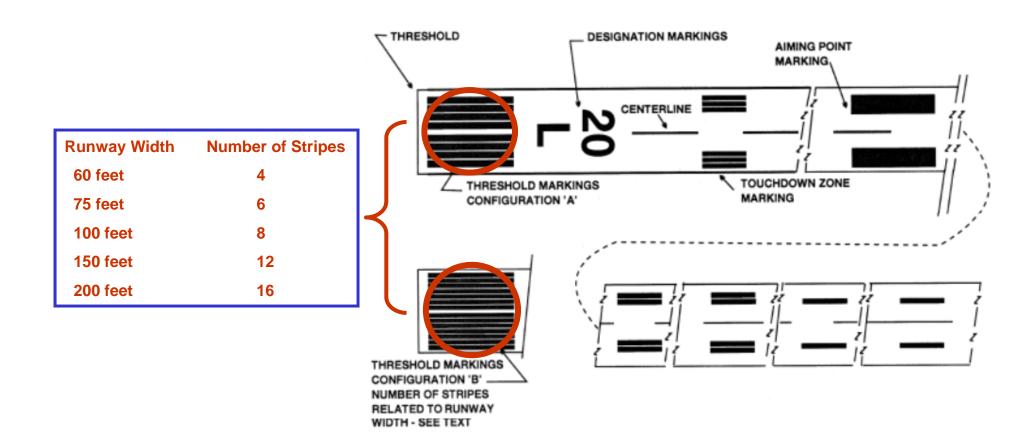
### Non-Precision Instrument Runway Runway Markings

Runway Aiming Point Markings are located on each side of the runway centerline and are approximately 1000 feet from the landing threshold

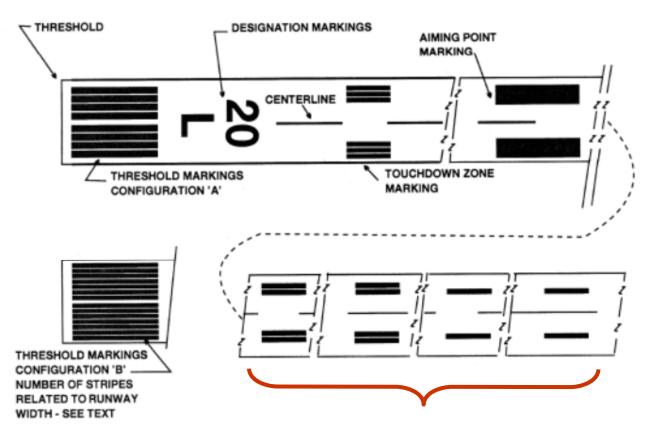


**NOTE:** Aiming point markings are only required at airports with 4000 feet or more of runway and with jet operations

## Precision Instrument Runway Runway Markings



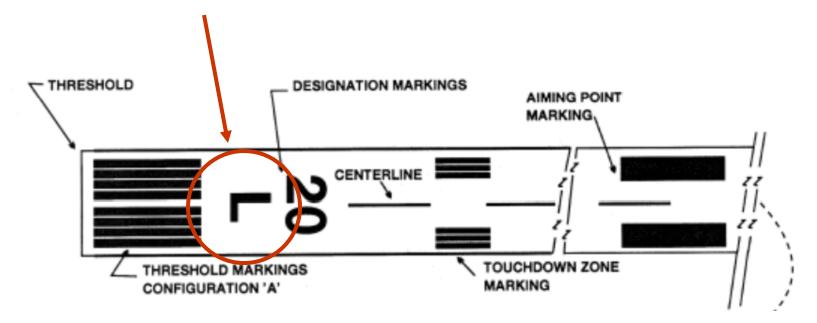
Precision Instrument Runway Runway Markings (cont)

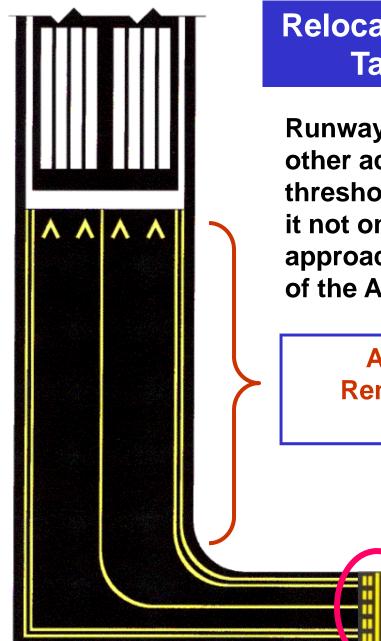


Touchdown zone markings are arranged in pairs about the centerline in 500 foot increments Precision Instrument Runway Runway Markings (cont)

• Designations for PARALLEL runways will use left (L), center (C), or right (R) as applicable

- Two parallel runways use "L" & "R"
- Three parallel runways use "L", "C" & "R"





## Relocated Threshold with Markings for Taxiway Aligned with Runway

Runway construction, runway maintenance or other activities may require a runway threshold to be relocated. When this occurs, it not only CLOSES a set portion of the approach end, but also SHORTENS the length of the AVAILABLE runway

Area used for aircraft taxi ONLY. Remember, taxiways are YELLOW & runways are WHITE

Runway Hold Position Marking

### RWY 36

## **Displaced Threshold Markings**

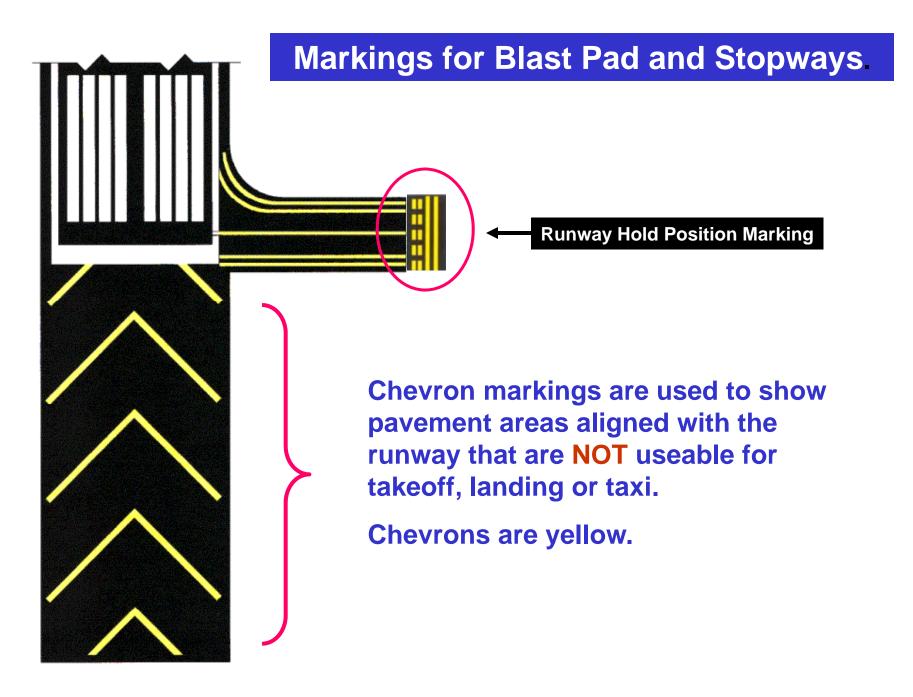
A displaced threshold is located at a point on a runway other than the designated beginning of the runway. Displacement of the threshold REDUCES THE LENGTH OF THE AVAILABLE RUNWAY FOR LANDINGS. The portion of runway behind a displaced threshold (marked by white arrows) is available for takeoffs in either direction and landings from the opposite direction.

Area available for:

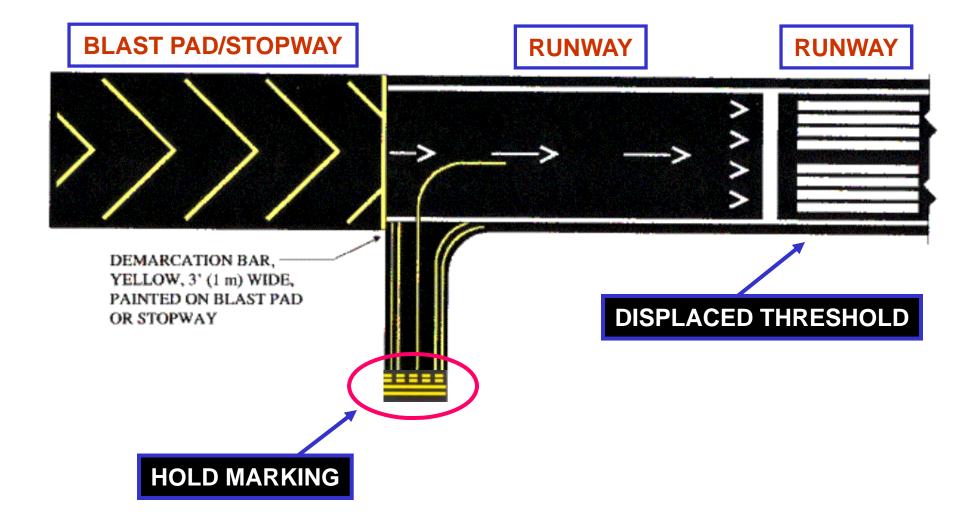
- Takeoffs in either direction
- Landing RWY 36 must land beyond the displaced threshold

• Landing RWY 18 – can use area beyond the displaced threshold for landing rollout

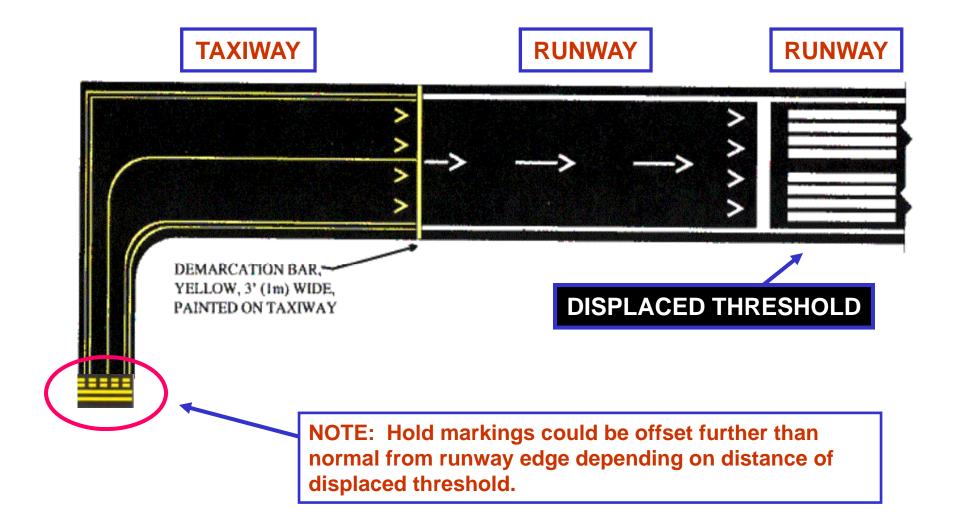
Runway Hold Position Marking



## Blast Pad or Stopway and Displaced Threshold Preceding a Runway



### **Taxiway and Displaced Threshold Preceding a Runway**

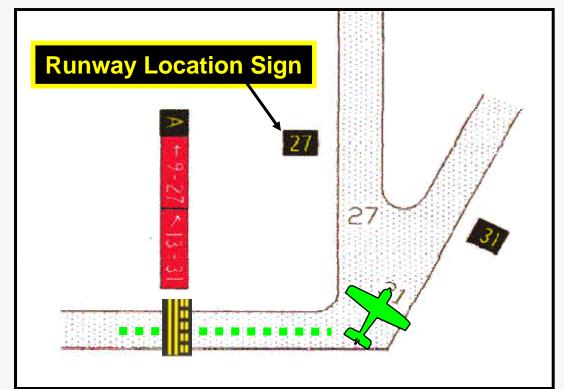


### **Runway Location Signs**

Location signs are used to identify either a taxiway or runway on which the aircraft is located. These signs have a black background with yellow inscription and yellow borders.

#### **Remember: "BLACK SQUARE - YOU'RE THERE!"**



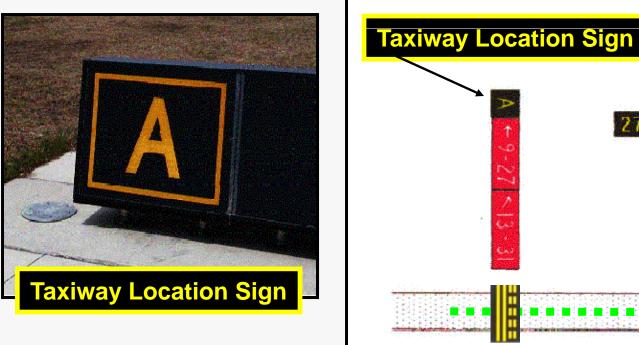


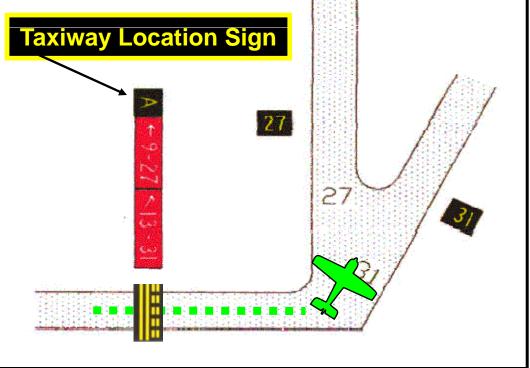
Runway location signs are normally used where two runways intersect near the same takeoff point which could cause some confusion. Cross check compass to ensure you are lined up on correct runway heading.

### **Taxiway Location Signs**

Location signs are used to identify either a taxiway or runway on which the aircraft is located. These signs have a black background with yellow inscription and yellow borders.

### Remember: "BLACK SQUARE - YOU'RE THERE!"





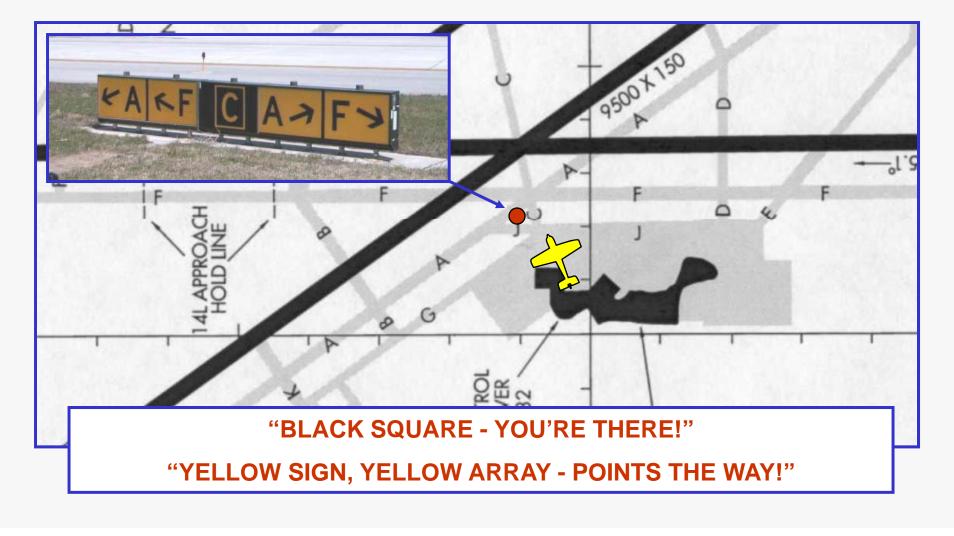
### **Direction Signs**

Direction signs have a yellow background with a black inscription. The inscription identifies the designation(s) of the intersecting taxiway(s). Each designation is accompanied by an arrow indicating the direction of the turn.



### **Direction Signs** (cont)

Orientation of signs are from left to right in a clockwise manner. Left turn signs are on the left of the location sign and right turn signs are on the right side of the location sign.



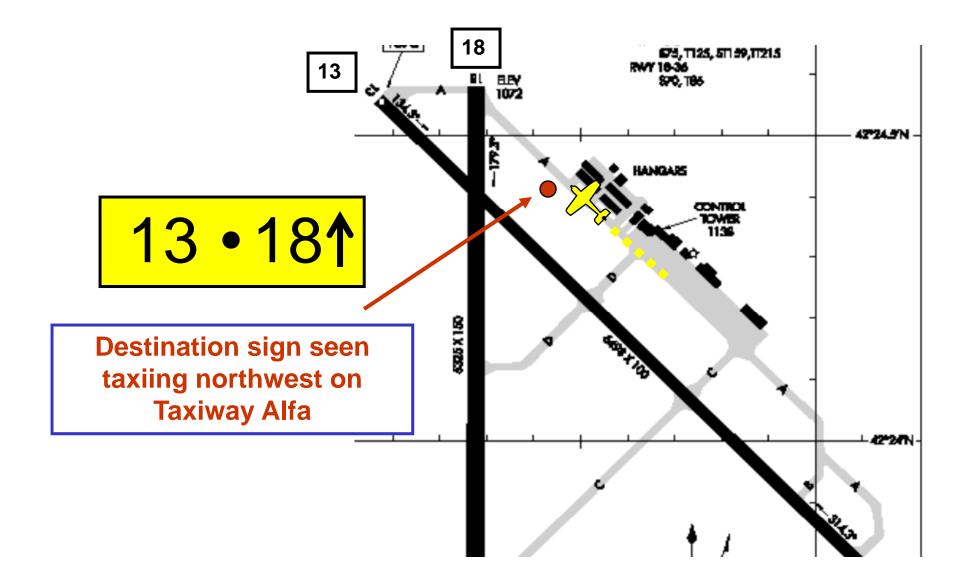
### **Designation Signs**

Destination signs have a yellow background with a black inscription indicating a destination on the airport. These signs will always have an arrow showing the direction of the taxi route to the destination

Destination sign with a common taxi route to two runways. Think of the "dot" as the word "and"

Two destinations with different taxi routes

### **Designation Signs** (cont)





### Destination sign for directions to a Military ramp

### **Designation Signs** (cont)

These signs provide general taxi directions to specific airport destinations.

### Destination sign for directions to Runways 32L and 35



32L1 35-

### **Designation Signs** (cont)

# Destination sign for directions to the parking ramp

### **Runway Distance Remaining Sign**

Shows the runway distance remaining in 1000 foot increments. May be installed along one or both side(s) of the runway. Surface painted signs usually supplement existing signs or are used where a sign cannot be installed on large pavement areas



### **Holding Position Signs**

These signs have a red background with white inscription. They are considered critical for safety and are used to identify hold positions. There are four basic types of hold position signs. They include:





Towered Airports - HOLD unless otherwise instructed by ATC

• Non-Towered Airports or TOWERED AIRPORTS WHEN TOWER IS CLOSED- Proceed when no traffic conflict exists

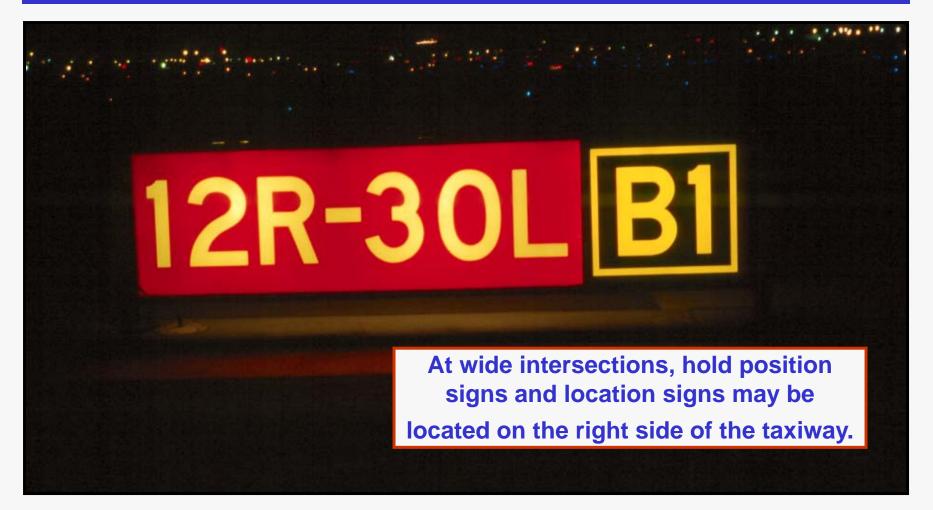


Note: This sign is located at the holding positions on taxiways that intersect a runway or on runways that intersect other runways. The runway numbers are arranged to correspond to the respective runway threshold. For example: "20-2" indicates that the threshold for Runway 20 is to the left and the threshold for Runway 2 is to the right.

Location signs are co-located with and on the out-board side of the hold sign. Hold signs are always located on the left side of the taxiway at the hold position.

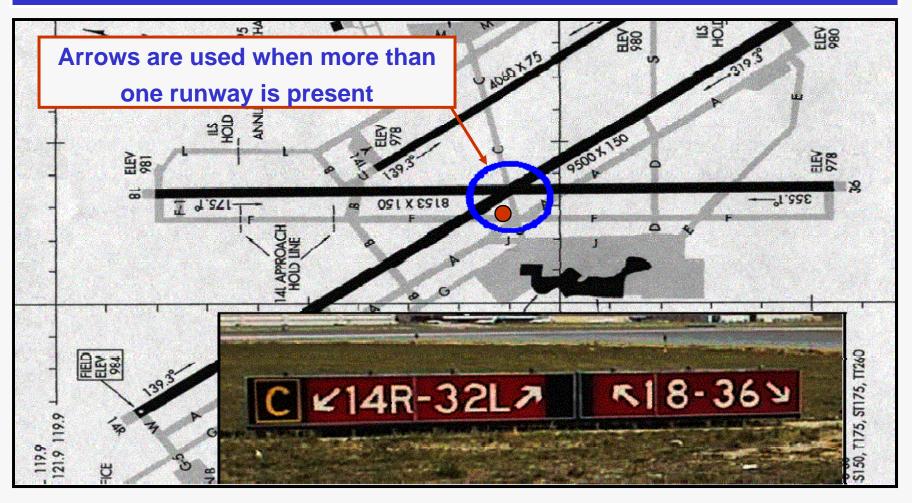
Towered Airports - HOLD unless otherwise instructed by ATC

• Non-Towered Airports or TOWERED AIRPORTS WHEN TOWER IS CLOSED- Proceed when no traffic conflict exists



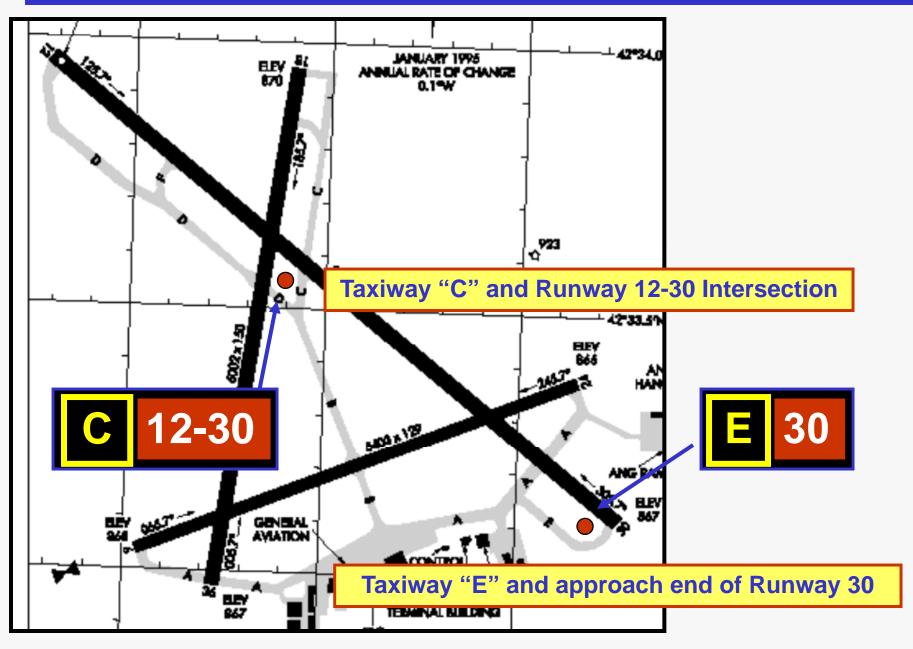
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• Towered Airports - HOLD unless otherwise instructed by ATC

• Non-Towered Airports or TOWERED AIRPORTS WHEN TOWER IS CLOSED- Proceed when no traffic conflict exists



## Runway/Runway Holding Position Signs – When runway is used for Land And Hold Short Operations (LAHSO)

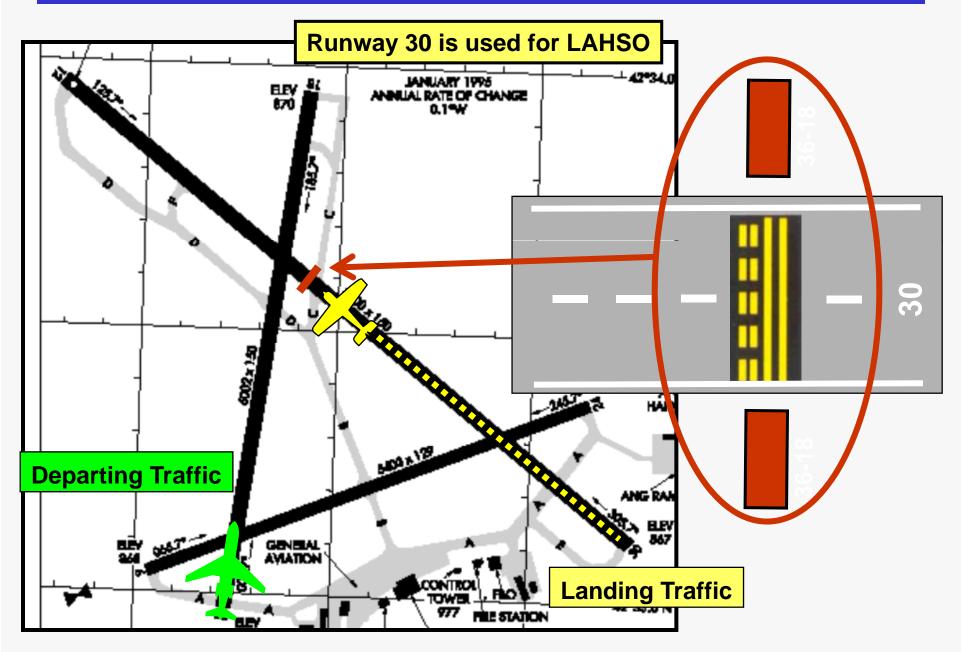


• Non-Towered Airports or TOWERED AIRPORTS WHEN TOWER IS CLOSED-Does not apply

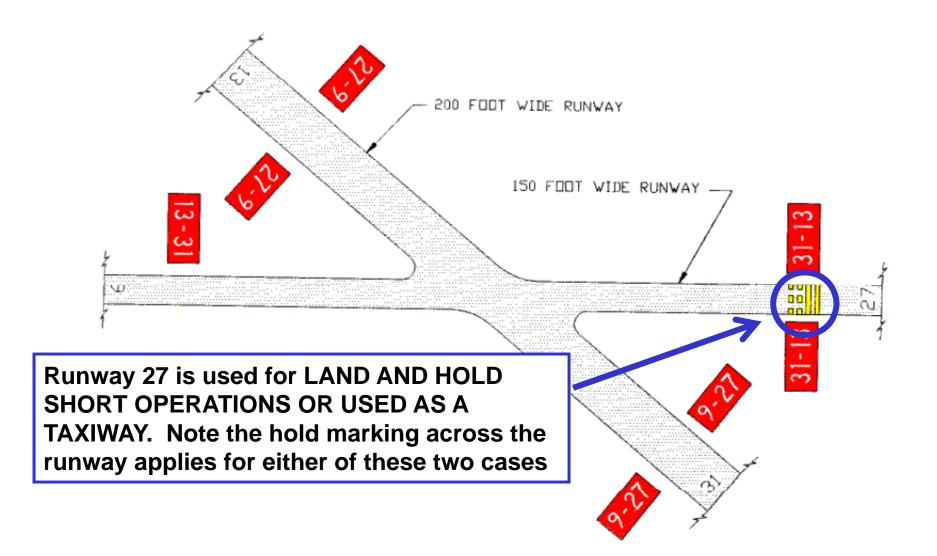
## Runway/Runway Holding Position Signs – When runway is used as a TAXIWAY

• Towered Airports – HOLD unless otherwise instructed by ATC

• Non-Towered Airports or TOWERED AIRPORTS WHEN TOWER IS CLOSED-Proceed when no traffic conflict exists



### **Runway Holding Position Signs & Marking**



### **Runway Approach Area Holding Signs**



At some airports it may be necessary to hold aircraft on taxiways located in the approach or departure corridor of the runway so that the taxiing aircraft does not interfere with the operations on that runway.

### AIRCRAFT ARE REQUIRED TO HOLD AT THESE LOCATIONS ONLY WHEN INSTRUCTED BY ATC

- Towered Airports PROCEED unless otherwise instructed by ATC
- Non-Towered Airports or TOWERED AIRPORTS WHEN TOWER IS CLOSED- Proceed when no traffic conflict exists

NOTE: Applicable for approaches to Runway 14L or departures from Runway 32R

### **Runway Approach Area Hold Markings**

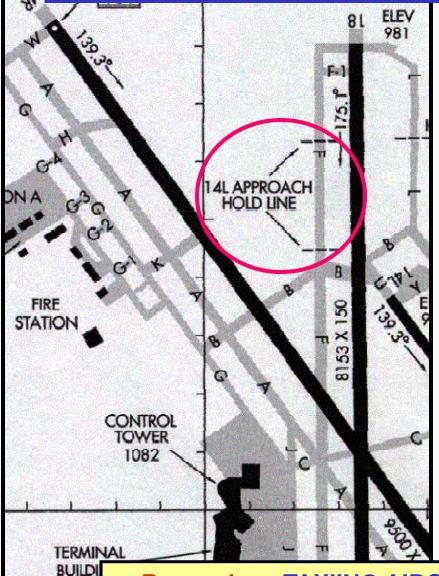


The runway approach area hold SIGN and the runway approach area hold MARKING will be co-located.

### AIRCRAFT ARE REQUIRED TO HOLD AT THESE LOCATIONS ONLY WHEN INSTRUCTED BY ATC

- Towered Airports PROCEED unless otherwise instructed by ATC
- Non-Towered Airports or TOWERED AIRPORTS WHEN TOWER IS CLOSED- Proceed when no traffic conflict exists

### **Runway Approach Area Holding Position Sign**



You are given the following taxi instructions by ATC:

"Taxi Runway 18 via Foxtrot. Hold Short 14L Approach."

**1.** At what point on Foxtrot are you expected to stop and hold?

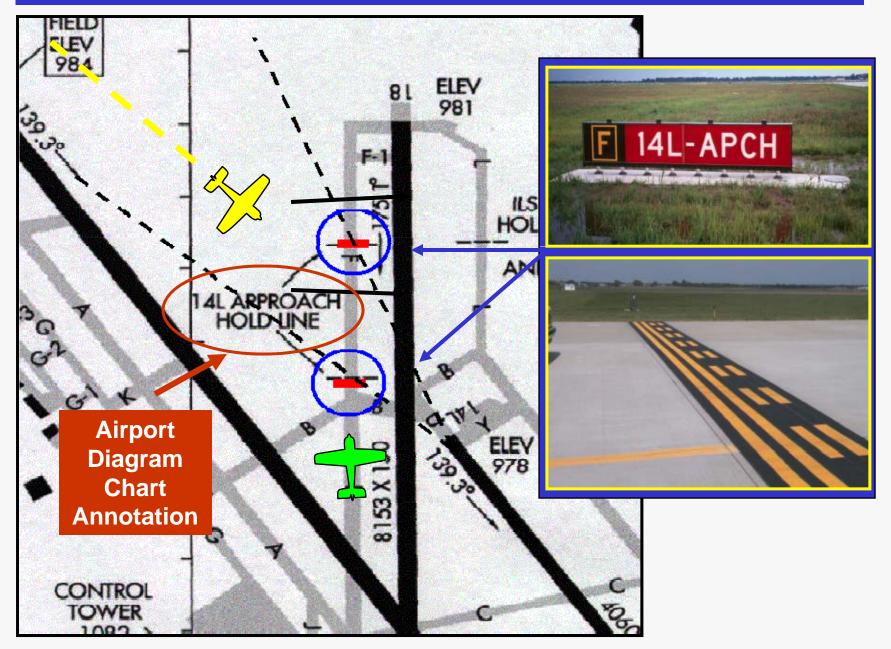
2. Why are you holding on a taxiway?

Answer: You are expected to stop at the 14L-APCH hold sign just north of Taxiway B. ATC has you holding on Taxiway F because the approach corridor for Runway 14L is active.

See next slide for details

**Remember:** TAXIING AIRCRAFT ARE REQUIRED TO HOLD AT THIS POSITION <u>ONLY</u> IF DIRECTED BY ATC

## Runway Approach Area Holding Position Sign

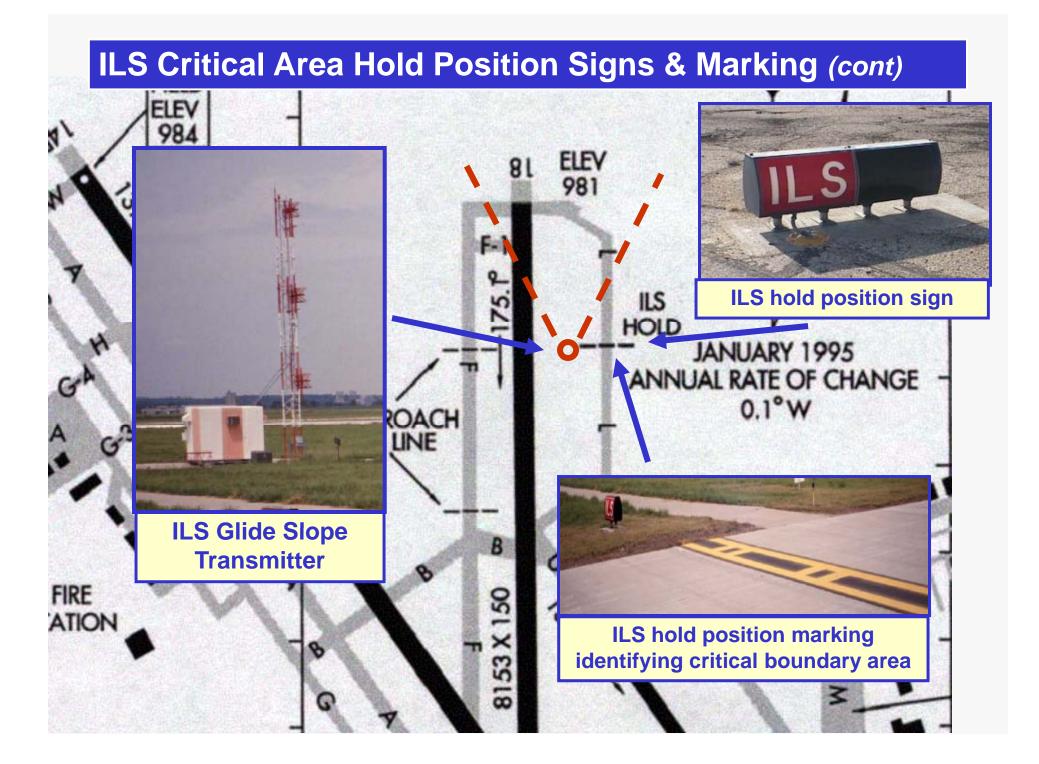


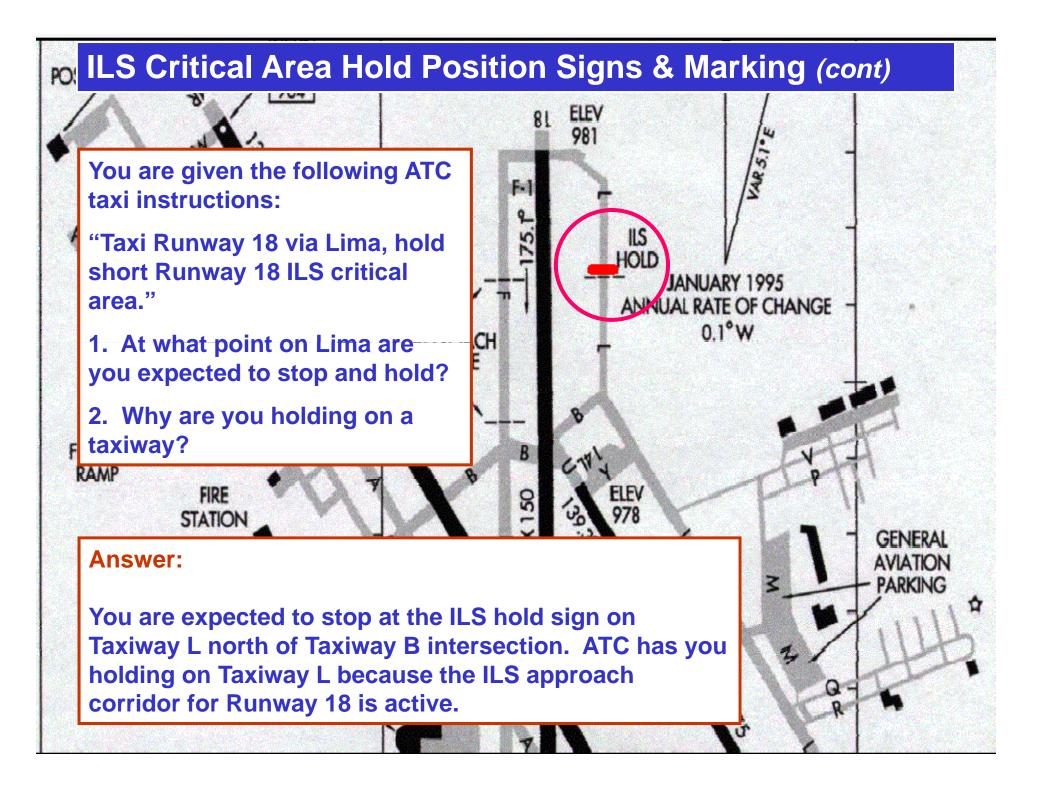
### **ILS Critical Area Hold Position Signs & Marking**



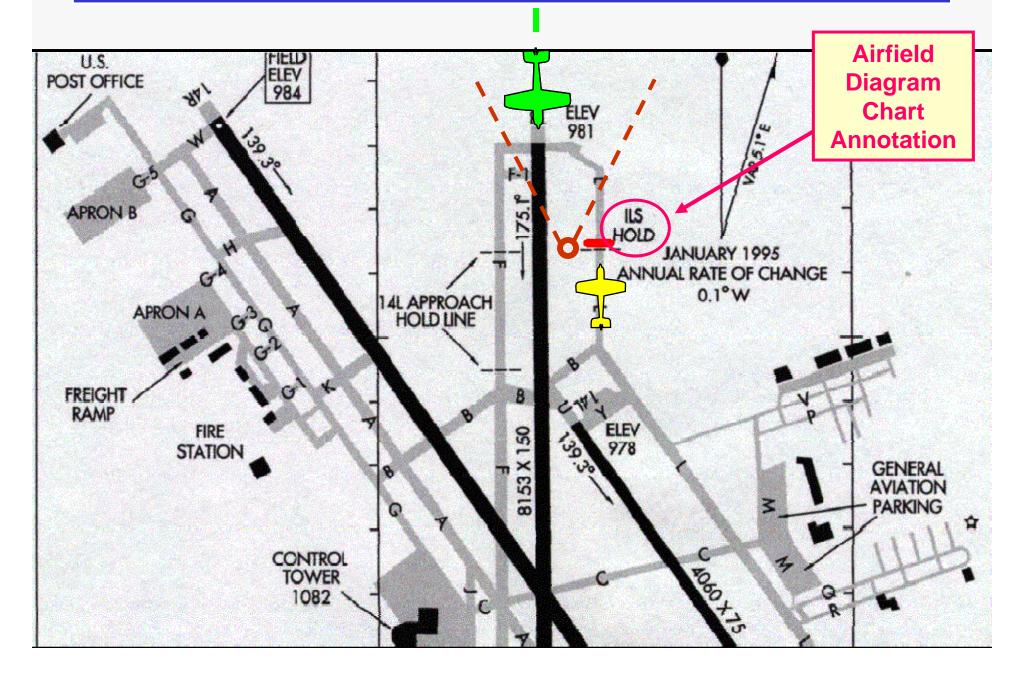
At some airports it may be necessary to hold an aircraft on a taxiway at a location other than at the runway entrance if the ILS is in use. Holding the taxiing aircraft at the ILS hold point will preclude ILS signal interference with an aircraft on ILS final approach.

Remember: TAXIING AIRCRAFT ARE REQUIRED TO HOLD AT THIS POSITION ONLY IF DIRECTED BY ATC



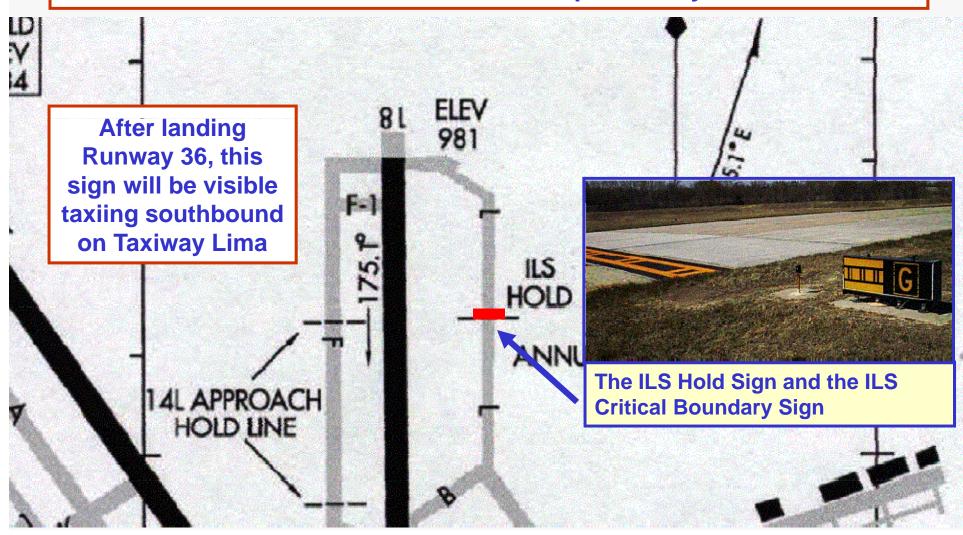


## ILS Critical Area Hold Position Signs & Marking (cont)



#### ILS Critical Area Hold Position Signs & Marking (cont)

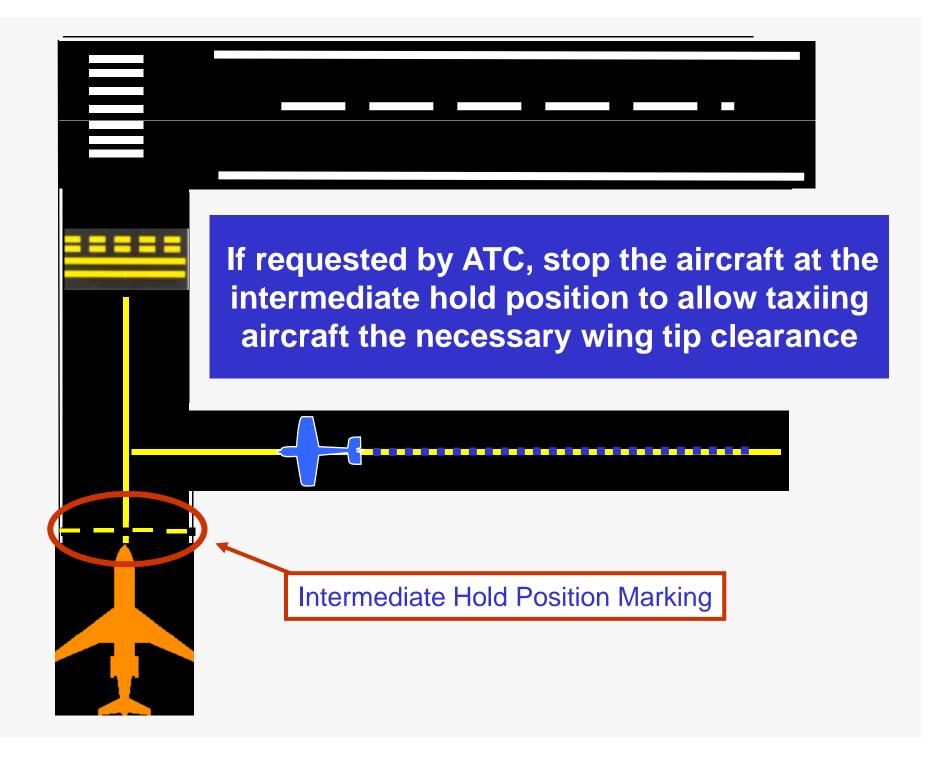
ILS Hold Signs and ILS Critical Boundary Signs are used only at towered airports to help pilots determine where to report clear of the ILS critical area when requested by ATC



## **Intermediate Holding Position Marking**



Used only at towered airports to mark the hold point along run-up pads and at some taxiway/taxiway intersections. The purpose of the marking is to provide wing tip clearance for taxiing aircraft. Pilots should stop prior to the marking when instructed by ATC to hold short of the intersection.



## **No Entry Sign**

A No Entry Sign will typically be located at the entrance of closed taxiways or an entrance to vehicle roadways where aircraft are not permitted and where the roadway may be mistaken as a taxiway.

**No Entry Sign** 

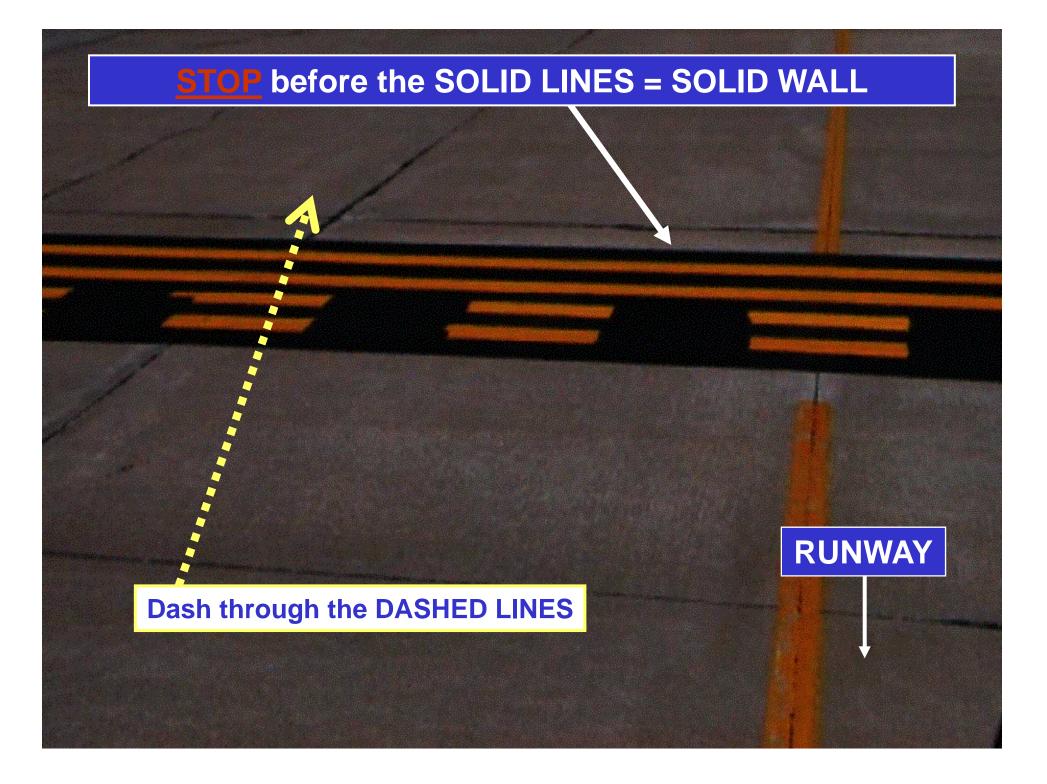


## **Hold Position Markings**

Hold position markings are required to have glass beads and be highlighted in black for contrast on light colored pavement at certified and towered airports



- Towered Airports HOLD unless otherwise instructed by ATC
- Non-Towered Airports or TOWERED AIRPORTS WHEN THE TOWER IS CLOSED- Proceed when no traffic conflict exists



## Are You Holding Short of a Runway OR Exiting a Runway?

You are looking out the cockpit window or vehicle windshield and see this marking.

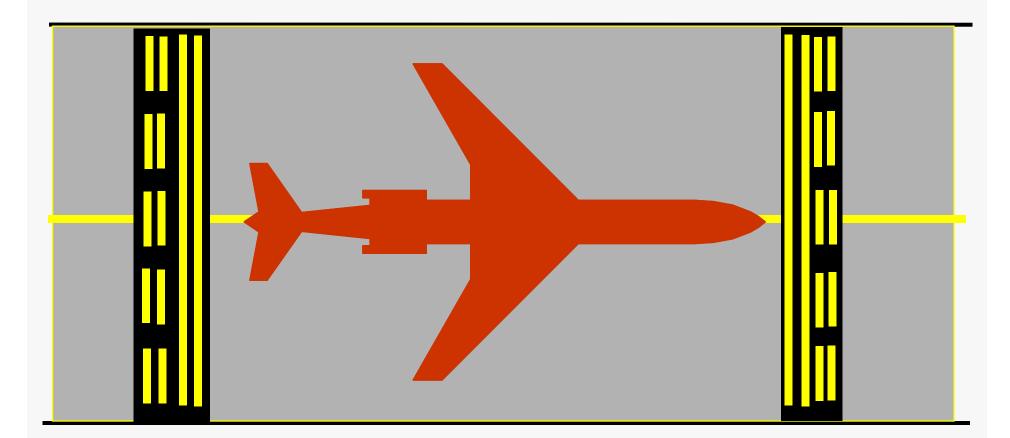
Answer: You are holding short

## Where is the hold position <u>sign</u>?

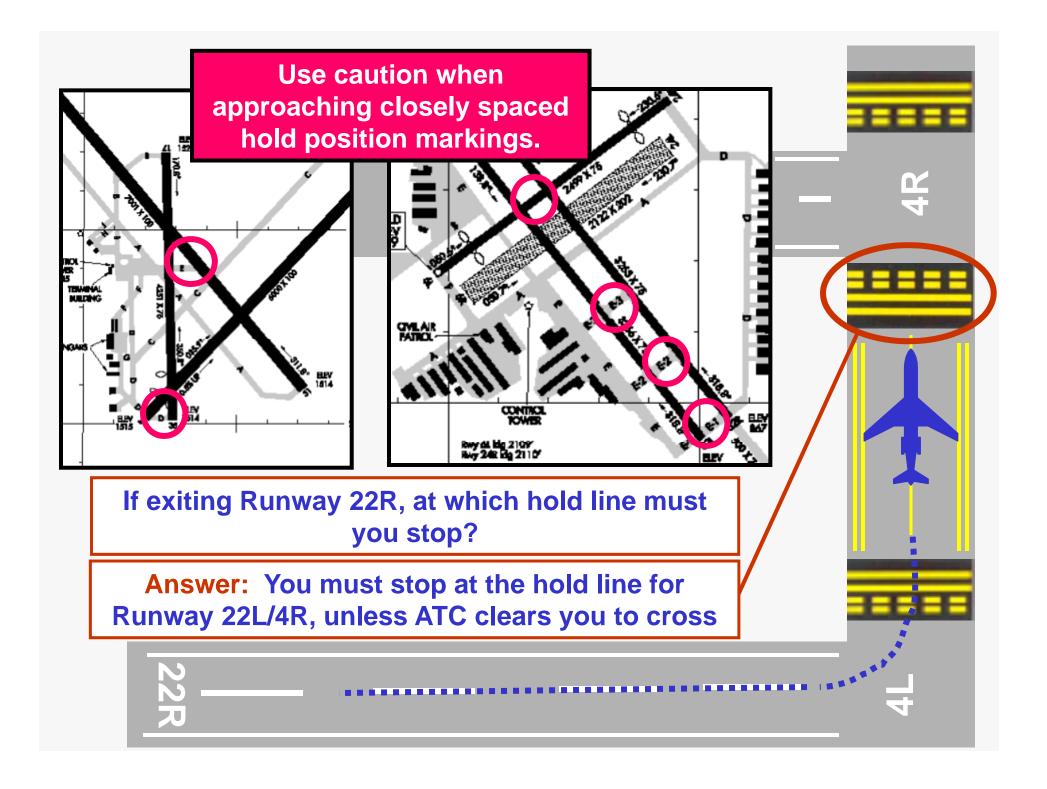
## Where is the hold position <u>marking</u>?

## "How fast was I going?"

## When Would You Likely Find Hold Markings Close Together?



**Answer:** On taxiways between closely spaced runways or on taxiway stubs between closely spaced parallel runways



## You're operating from a towered airport and are told to "hold short for takeoff."

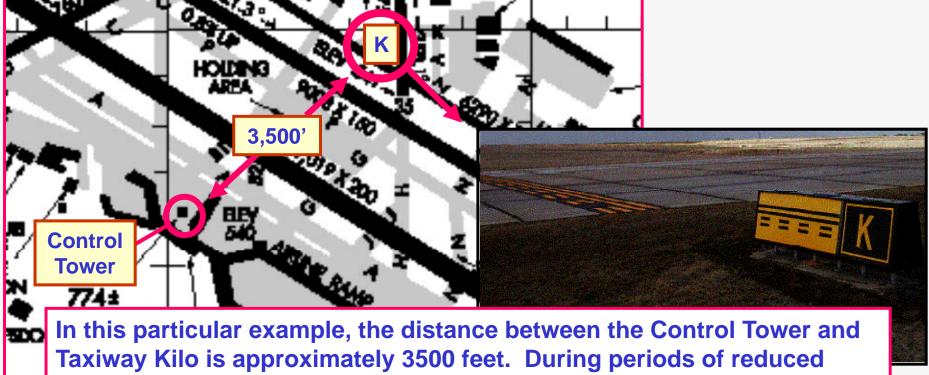
Which hold marking applies? You're looking out the cockpit window or vehicle windshield.





## Runway Safety Area Boundary Sign

Runway boundary signs are located on the back side of runway hold position signs. These signs are used at some towered airports and help pilots determine when to report clear of the runway when requested by ATC. Aircraft exiting the runway may not be seen by the tower because of distance or visibility restrictions. Additionally, these signs provide another visual reference if the hold position marking is obscured by snow or ice

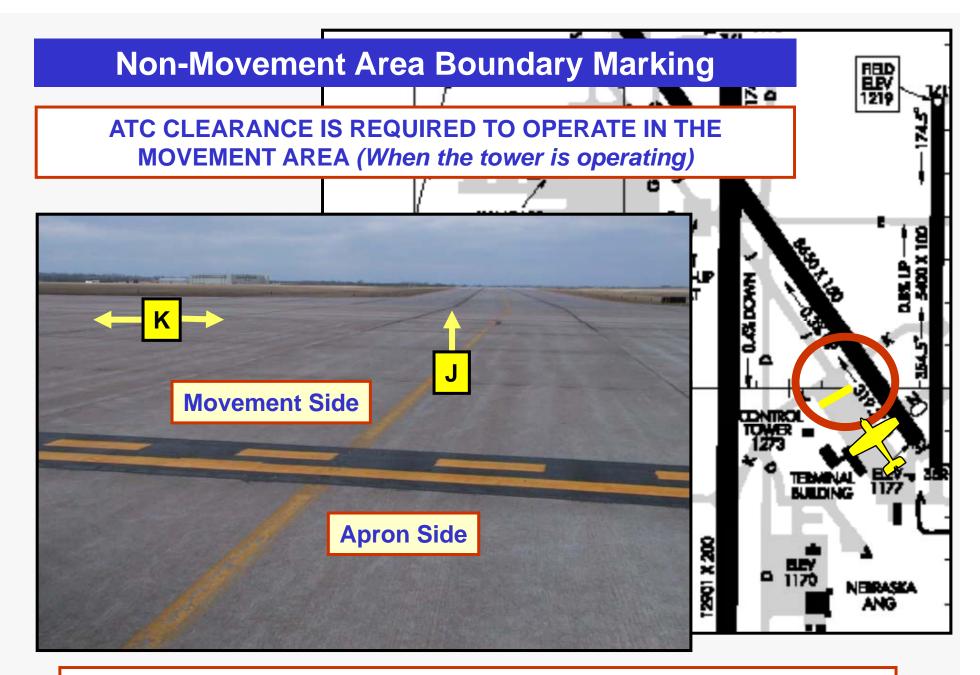


visibility, Taxiway Kilo would not be visible from the tower and ATC may request pilots to then report clear of the runway at Taxiway Kilo

## **Taxiway and Runway Markings**



# *NOTE:* Taxiway and runway markings must have glass beads at FAA certificated airports



**NOTE:** These boundary markings are only used at TOWERED airports

## Taxiway Edge Markings



Pavement outboard of continuous double yellow lines is not available for aircraft use

#### **Double Continuous**

## **Taxiway Ending Marker**



The purpose of the taxiway ending marker is to prevent pilots from taxiing off the end of the pavement at locations where pilots are not expecting the taxiway to end.

## Safety Tip

If you have difficulty reading runway markings or airport signs at a particular airport, contact the Airport Manager or the FAA and report the problem.

Additionally, consider filing a report with NASA's Aviation Safety Reporting System (ASRS) form.

Reporting forms can be obtained free of charge from FAA Flight Standards District Offices, Flight Service Stations, or directly from NASA's web site:

http://asrs.arc.nasa.gov/immunity.htm



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to main menu)

