

RUNWAY INCURSION AVOIDANCE

FULFILLS PA.II.D, CA.II.D, AI.II.C

Objective	
The student shall understand the markings, lighting, and signage at airports. The student shall become familiar with appropriate taxi briefings, hot spot identification, and effective communication during taxi.	
Instructor Actions	Student Actions
<ul style="list-style-type: none">- Present lesson and answer student questions- Guide student through new airport scenario and role play as ATC- Present <u>AOPA runway safety flashcards</u>- Present <u>FAA taxi simulator</u>	<ul style="list-style-type: none">- Take notes and participate in instructor's discussion- Participate in instructors taxi scenario- Review runway flashcards and FAA taxi simulator
Case Studies	Equipment
AOPA Runway Safety – <u>Over the Line</u>	<ul style="list-style-type: none">- Airport Diagram Slides- Chart Supplement- PHAK- White Board
Completion Standards	
The student shall explain appropriate action and a variety of airport markings and the expected signage and lighting at different areas of operation. The student shall display proficiency in navigating the airport surface.	

ELEMENTS

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RESOURCES

FAA-S-ACS-6C Private Pilot ACS - Area II Task D

FAA-S-ACS-7B Commercial Pilot ACS - Area II Task D

FAA-S-ACS-25 CFI ACS - Area II Task C

AIM Chapter 2 – Aeronautical Lighting and Other Airport Visual Aids

AC 91-73B – Procedures during Taxi Operations

AOPA Runway Safety Flashcards

Chart Supplement

ERAU Airport Markings Video

ERAU Airport Signage Video

ERAU Airport Lighting Video

1. INTRODUCTION

Runway Incursion The presence of an unauthorized person, vehicle, or aircraft on the runway.

Imagine you are flying to a busy, class C airport as a new private pilot. Large jets, fast-talking ATC, and a sense of “being in the way” contribute to feeling rushed. Let’s begin with a review of the scenario followed by a refresher on airport markings.

2. STUDENT SCENARIO

Following this lesson, plan a flight to the Santa Barbara (SBA) airport for lunch at the local Pickles & Swiss sandwich shop. Assume a landing on runway 33L and parking at Signature Aviation.

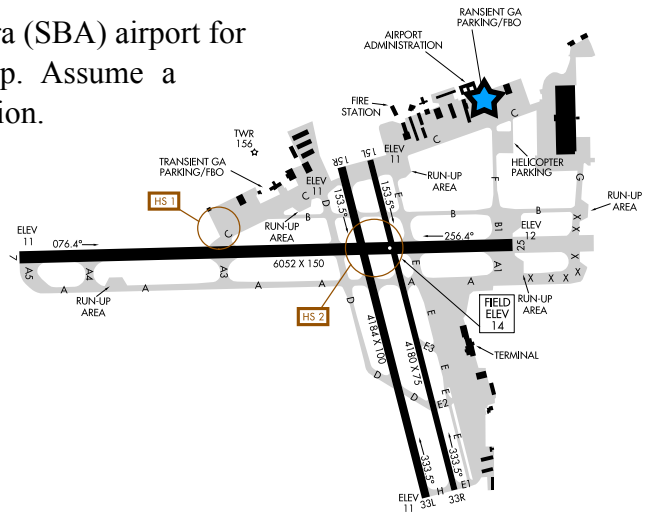
Open Presentation

Complete these steps and follow along with the instructor.

1. Exit runway 33L at taxiway Delta and await ATC taxi instructions
2. Draw route on airport diagram
3. Begin taxi and consider the intersections below

2.1. Intersections

Consider the following intersections along your route of taxi. Where do runway crossings occur, and how do we know? Is any authorization required to continue crossing?



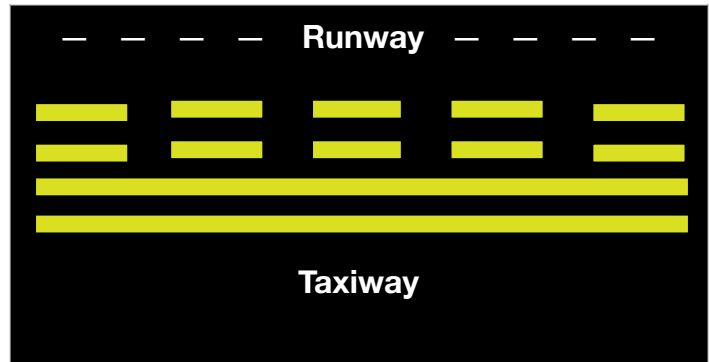
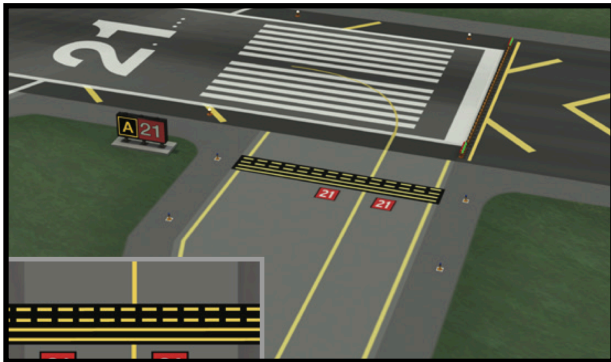
2.2. ATC Role Playing

The instructor will simulate ATC, and the student will respond appropriately and taxi the model airplane around the airport.

3. RUNWAY HOLD-SHORT INDICATIONS

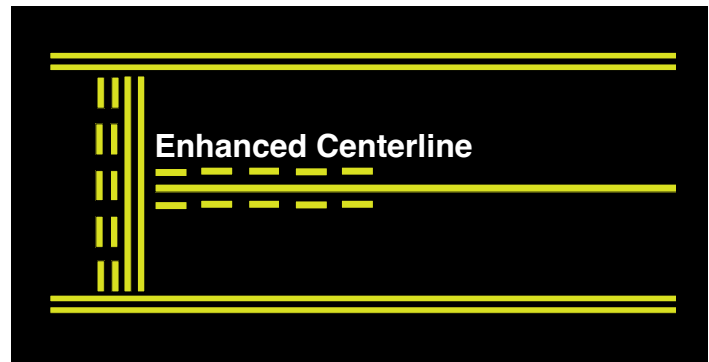
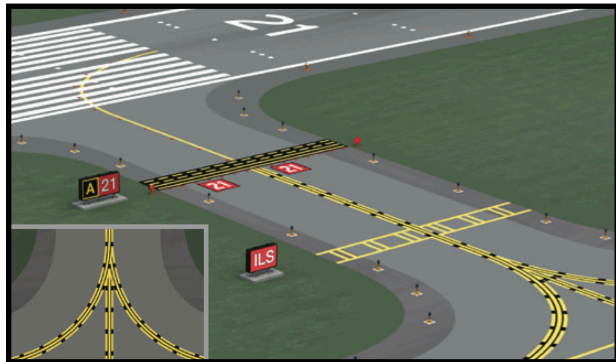
3.1. Runway Hold Short Lines

Aircraft **MUST** hold short on the solid side until ATC authorization to enter or cross runway is given. From the runway side, aircraft may taxi off the runway and must come to a stop after fully clearing.



3.2. Enhanced Centerline

The taxiway centerline approaching a runway is “enhanced with dashed side stripes.



3.3. Runway Guard Lights (Wig-Wags)

Consist of either a pair of elevated flashing yellow lights installed on either side of the taxiway, or a row of in-pavement yellow lights installed across the entire taxiway, at the runway holding position marking.

Elevated and In-Pavement Runway Guard Lights



3.4. Runway Hold Sign

It is also important to know what runway is immediately behind these runway hold-short indications. The runway hold sign is a simple red sign with a white number depicting the runway. If the taxiway is located at an intersection, the orders correspond to where the runway numbers for that runway are. For example, in the example below, runway 4 runs from left to right. Runway 22 runs from right to left. If the sign says -APCH, then per AIM 2-3-5(a)(3), aircraft only need to hold short when specifically instructed.



4. MOVEMENT AND NON-MOVEMENT AREA

Movement Area Region where ATC clearance is required to operate (taxiways and runways)

Non-Movement Area Areas where ATC clearance is NOT required (ramps)

5. HOT SPOTS

A hot spot is a location on an airport movement area with a history or potential risk of collision or runway incursion, and where heightened attention by pilots and drivers is necessary. These locations are

SANTA BARBARA		
SANTA BARBARA MUNI (SBA)	HS 1	Pilots are sometimes confused by the angle at which Twy C intersects Rwy 07–25.
	HS 2	Pilots ldg on Rwy 07–25 sometimes turn onto Rwy 15R–33L or Rwy 15L–33R wo authorization fr ATC.
SANTA MARIA		

depicted on the airport diagram, and are explained textually in the Chart Supplement.

6. TAXI BEST PRACTICES

1. Review airport diagram BEFORE flight! Become familiar with hotspots, and predict taxi route from parking to appropriate runway
2. Draw ATC route on taxi diagram
3. Keep your head on a swivel. Glance at the diagram if necessary, and come to a complete stop if attention is diverted
4. Don't be afraid to tell ATC you prefer your clearance at run-up area
5. ALWAYS have an airport diagram (beware of not “packing” for a flight)
6. Enforce sterile cockpit, especially when flying with non-pilots
7. Look both ways when crossing any runway, and light yourself up
8. Brief airport during preflight planning (especially hot spots, see Chart Supplement for textual description)
9. Brief taxi route before moving
10. Brief taxi before approach (turnoffs, planned runway...)