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Preparing Students for Checkride with Gleim Sim

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PREPARING STUDENTS FOR GLEIM SIM CHECKRIDE

Jon Westberry, Charles Ellis
Atlantic Room
2023 SMART@ER Conference

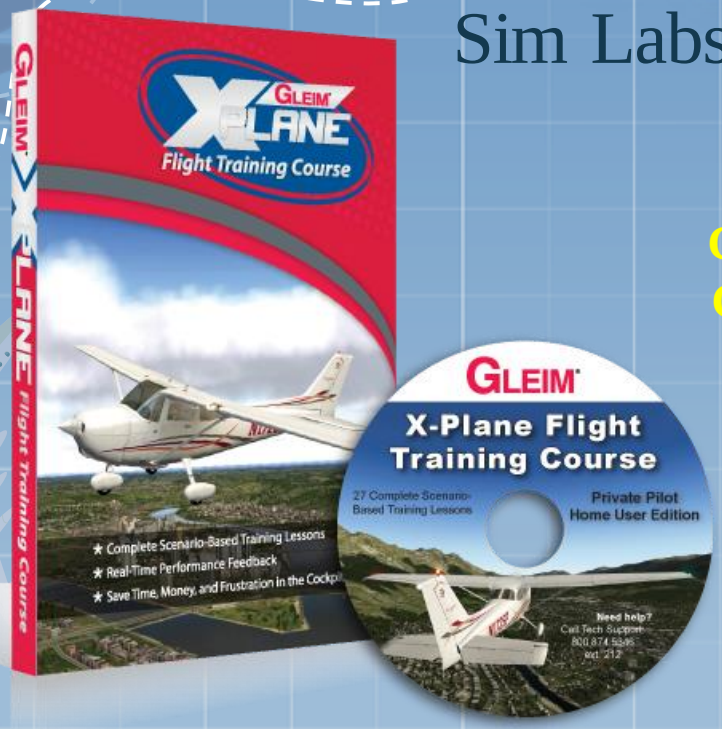
Session Summary

This Breakout Session will go over the basics of Airport Pattern Flying on Gleim Simulators utilizing AS120's Bounce Pattern and Sim Labs. Instructors will learn how to prepare students for an end-of-course "Checkride," including radio callouts, the basics of pilot/co-pilot communication, and Crew Resource Management (CRM) practices. The Session was made for the AS120 Instructor, specifically those with no flight experience.

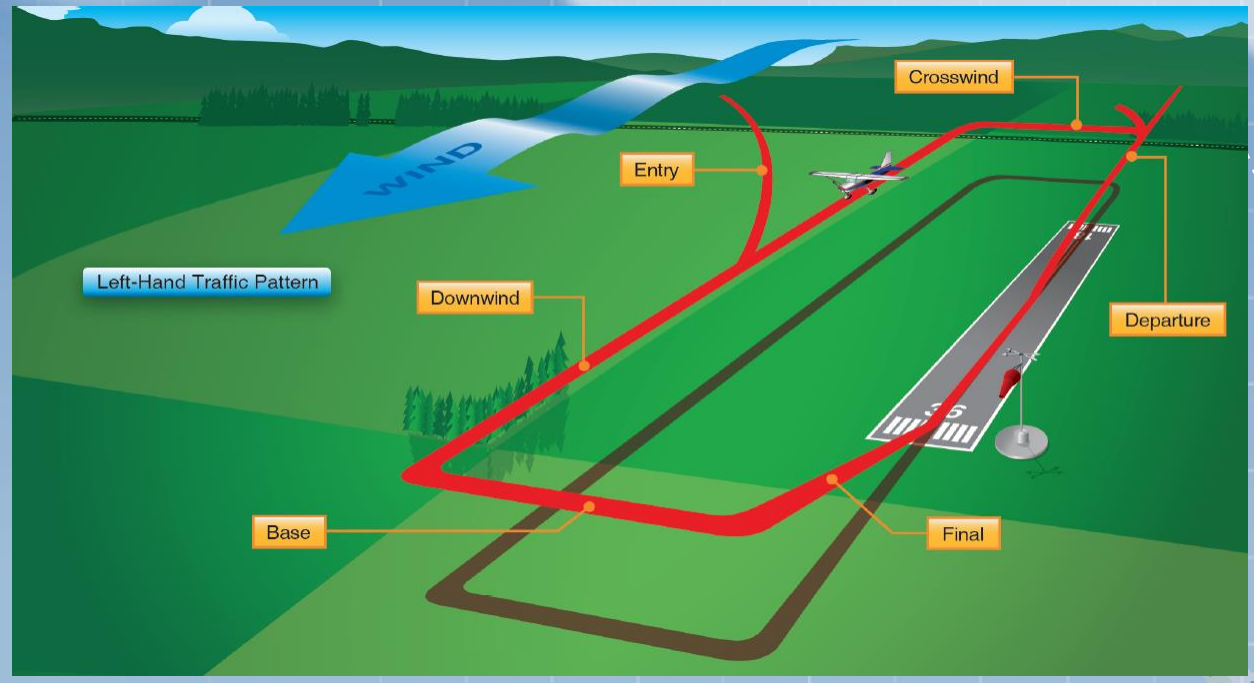
Session Timeline

Pattern Overview: 20 min
Discussion: 5 min
Hands-On Simulator Training: 20 min

Sim Labs & X-Plane Flight Training Course

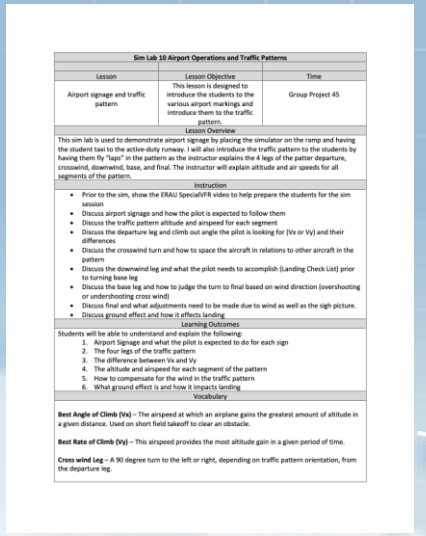


Great Use of CTE Funds!



Only $99! Wow!

The Perfect Pair X-Plane Flight Training & Sim Lab 10: Airport Operations and Traffic Patterns



Sim Lab 10 Airport Operations and Traffic Patterns

Lesson	Lesson Objective	Time
Airport signage and traffic pattern	This lesson is designed to introduce the students to the various airport markings and introduce them to the traffic pattern.	Group Project 45

Lesson Overview

This sim lab is used to demonstrate airport signage by placing the simulator on the ramp and having the student taxi to the active-duty runway. I will also introduce the traffic pattern to the students by having them fly "laps" in the pattern as the instructor explains the 4 legs of the patter departure, crosswind, downwind, base, and final. The instructor will explain altitude and air speeds for all segments of the pattern.

Instruction

- Prior to the sim, show the ERAU SpecialVFR video to help prepare the students for the sim session
- Discuss airport signage and how the pilot is expected to follow them
- Discuss the traffic pattern altitude and airspeed for each segment
- Discuss the departure leg and climb out angle the pilot is looking for (Vx or Vy) and their differences
- Discuss the crosswind turn and how to space the aircraft in relations to other aircraft in the pattern
- Discuss the downwind leg and what the pilot needs to accomplish (Landing Check List) prior to turning base leg
- Discuss the base leg and how to judge the turn to final based on wind direction (overshooting or undershooting cross wind)
- Discuss final and what adjustments need to be made due to wind as well as the sigh picture.
- Discuss ground effect and how it effects landing

Learning Outcomes

Students will be able to understand and explain the following:

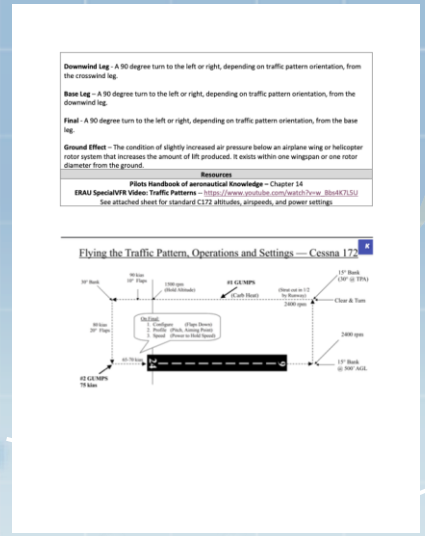
1. Airport Signage and what the pilot is expected to do for each sign
2. The four legs of the traffic pattern
3. The difference between Vx and Vy
4. The altitude and airspeed for each segment of the pattern
5. How to compensate for the wind in the traffic pattern
6. What ground effect is and how it impacts landing

Vocabulary

Best Angle of Climb (Vx) – The airspeed at which an airplane gains the greatest amount of altitude in a given distance. Used on short field takeoff to clear an obstacle.

Best Rate of Climb (Vy) – This airspeed provides the most altitude gain in a given period of time.

Cross wind Leg – A 90 degree turn to the left or right, depending on traffic pattern orientation, from the departure leg.



Downwind Leg - A 90 degree turn to the left or right, depending on traffic pattern orientation, from the crosswind leg.

Base Leg – A 90 degree turn to the left or right, depending on traffic pattern orientation, from the downwind leg.

Final - A 90 degree turn to the left or right, depending on traffic pattern orientation, from the base leg.

Ground Effect – The condition of slightly increased air pressure below an airplane wing or helicopter rotor system that increases the amount of lift produced. It exists within one wingspan or one rotor diameter from the ground.

Resources

Pilots Handbook of aeronautical Knowledge – Chapter 14

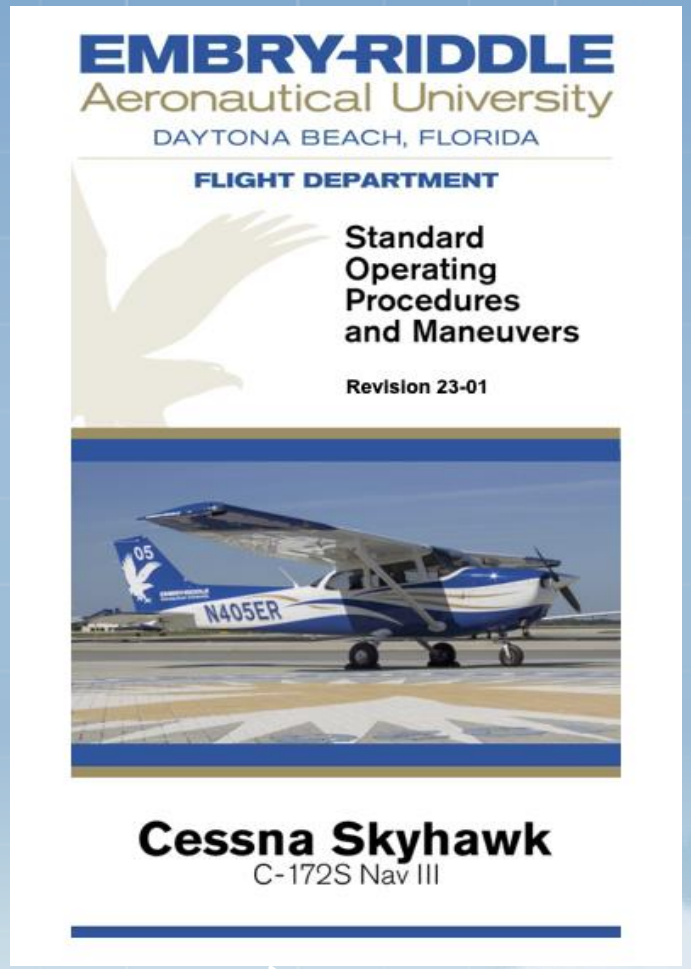
ERAU SpecialVFR Video: Traffic Patterns – https://www.youtube.com/watch?v=w_Bbx4K7LSU

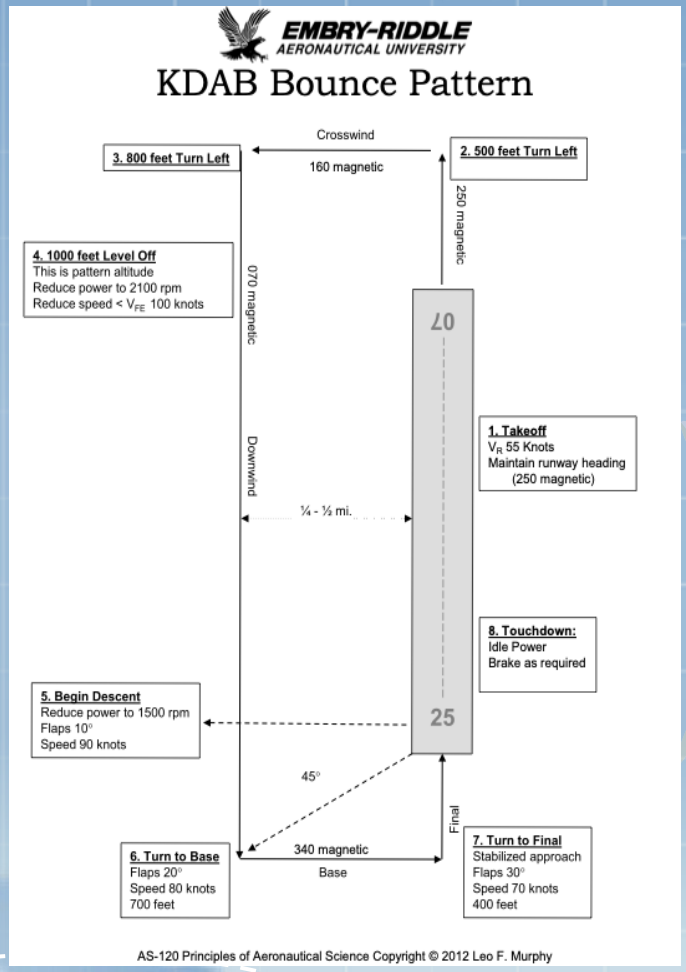
See attached sheet for standard C172 altitudes, airspeeds, and power settings

Flying the Traffic Pattern, Operations and Settings — Cessna 172

ERAU Flight Department
Cessna 172S Standard Operating Procedures and Maneuvers (SOPM)

- Align your Training w/ERAU's Cessna 172S SOPM
  - Chapter 2, Pages 9-17 and 23-24
- This training follows Standards published by the ERAU Flight Dept.
- Use the KDAB Bounce Pattern Worksheet as Quick Reference for your Student Pilots
- Set Airspeed/Altitude Limits to Help Students Fly-By-The-Numbers!
- Incorporate Wind Direction/Speed into X-Plane for Real-to-METAR Scenarios
- Add a Pattern Flight to your Morning METAR Activity
- Retain Student Interest w/Real World Training Operations





Pattern Overview

Upwind

Crosswind

Downwind

Base

Final

Resources

- **X-Plane Flight Training Course – Private Pilot Home Edition**
  - **https://www.gleimaviation.com/shop/xftcpplauncher/**
- **Sim Lab 10: Airport Operations and Traffic Patterns**
  - **AS120, Principles of Aeronautical Science Sandbox**
- **ERAU Flight Dept. Cessna 172S SOPM**
  - **https://erau.instructure.com/courses/21975/pages/c172-sopm**
- **ERAU SpecialVFR "*Traffic Patterns*"**
  - **https://youtu.be/w_Bbs4K7L5U?si=fsNceE3DiCzTk1DX**
- **FAA-Aeronautical Information Manual (AIM) > Air Traffic Control > Airport Operations**
  - **https://www.faa.gov/air_traffic/publications/atpubs/aim_html/chap4_section_3.html**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Questions?