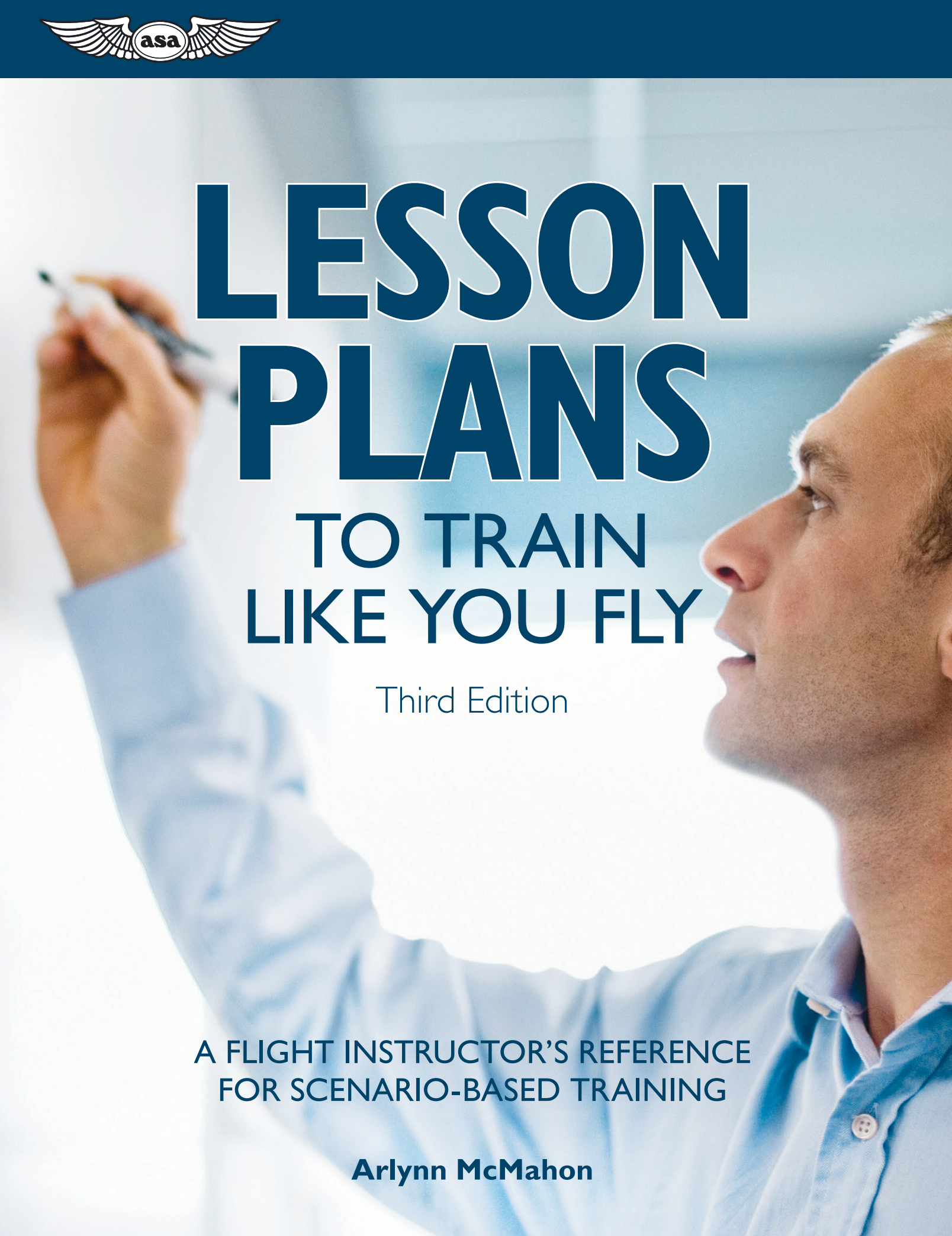

LESSON PLANS

TO TRAIN LIKE YOU FLY

Third Edition

A FLIGHT INSTRUCTOR'S REFERENCE FOR SCENARIO-BASED TRAINING

Arlynn McMahon

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Lesson Plans to Train Like You Fly: A flight instructor's reference for scenario-based training
Third Edition
By Arlynn McMahon

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Foreword

Those of us from the FAA, Embry Riddle Aeronautical University, and the University of North Dakota who began the journey toward scenario-based training (SBT), single-pilot resource management (SRM), and learner centered grading (LCG) back in the fall of 2003 knew that others would need to carry the work forward. Arlynn McMahon, 2009 FAA Flight Instructor of the Year, is one of those people. She was with the FAA Industry Training Standards (FITS) program from the early days and has continued to be a strong voice for realistic flight training. To your immediate benefit, Arlynn is also a delightful writer who makes the difficult easy to understand, and takes joy in the art and science of flight instruction.

As with her earlier book, *Train Like You Fly*, Arlynn has taken the fairly complex subject of maneuvers training within the SBT methodology, and made it clear and understandable for the working flight instructor. Scenarios add context to the learning of a series of maneuvers. When the client understands meaning before tackling detail, they learn more quickly and more completely. Arlynn seamlessly combines the "why" with the "how" of learning maneuvers.

A soft-field takeoff, S-turns across a road, steep turns, and slow flight can simply be mindless maneuvers learned by rote—or part of a realistic mountain search-and-rescue scenario. The latter provides a vivid context within which the client can understand why it is important to be good at these tasks beyond basic stick-and-rudder skills. Additionally, the instructor can continually help the client make real-time safety and operational decisions during the scenario.

I would especially draw your attention to Section III of *Lesson Plans to Train Like You Fly*, where Arlynn tells us how to apply the principles of SBT and SRM to generic flight syllabi. Giving the client a realistic mission, and then guiding them through the detailed preparation and inflight decision-making associated with the mission, builds repeatable problem solving skills and teaches sound judgment. The subject of "teaching judgment" often causes some disagreement among flight instructors. However, if learning can be defined as the change of behavior in response to stimuli over time, then following the scenario guidance Arlynn details in this text can surely have a positive impact on client decision-making behavior. Accident statistics consistently remind all of us who flight instruct that this is a critically important goal.

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In *Lesson Plans*, Arlynn successfully bridges the gap between the theoretical and the practical. In the "real world" most instructors spend more time in front of a whiteboard than at a computer monitor. Making instruction simple, clear, and easy to repeat provides the instructor with more tools for their teaching bag-of-tricks. This excellent text adds a very valuable tool to that bag. I plan to add it to my flight bag, and I hope you will as well.

Frank Ayers, Ed.D.
Executive Vice President
Embry Riddle Aeronautical University, Prescott
CFI, ATP, B757-767

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SECTION II

MANEUVER BRIEFINGS WITH A SCENARIO FOCUS

AIRPORT OPERATIONS

CHAPTER 4

This chapter contains a maneuver briefing on the subject of traffic patterns.

AREA OF OPERATION:
Preflight Lesson on a Maneuver to be Performed in Flight

OBJECTIVE:
To determine that the CFI applicant understands the elements, can demonstrate the ability to apply that knowledge in delivering instruction, and can teach and manage the risks arising from the Task. Instructional knowledge is demonstrated by using proper teaching methods and aids to describe and explain:

- The purpose of the maneuver.
- Elements of the maneuver and common learner errors associated with it.
- Desired outcome(s), including completion standards.

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Traffic Patterns

Suggested Materials: Whiteboard and markers, POH, Chart Supplement, and AC 90-66.

INTRODUCTION

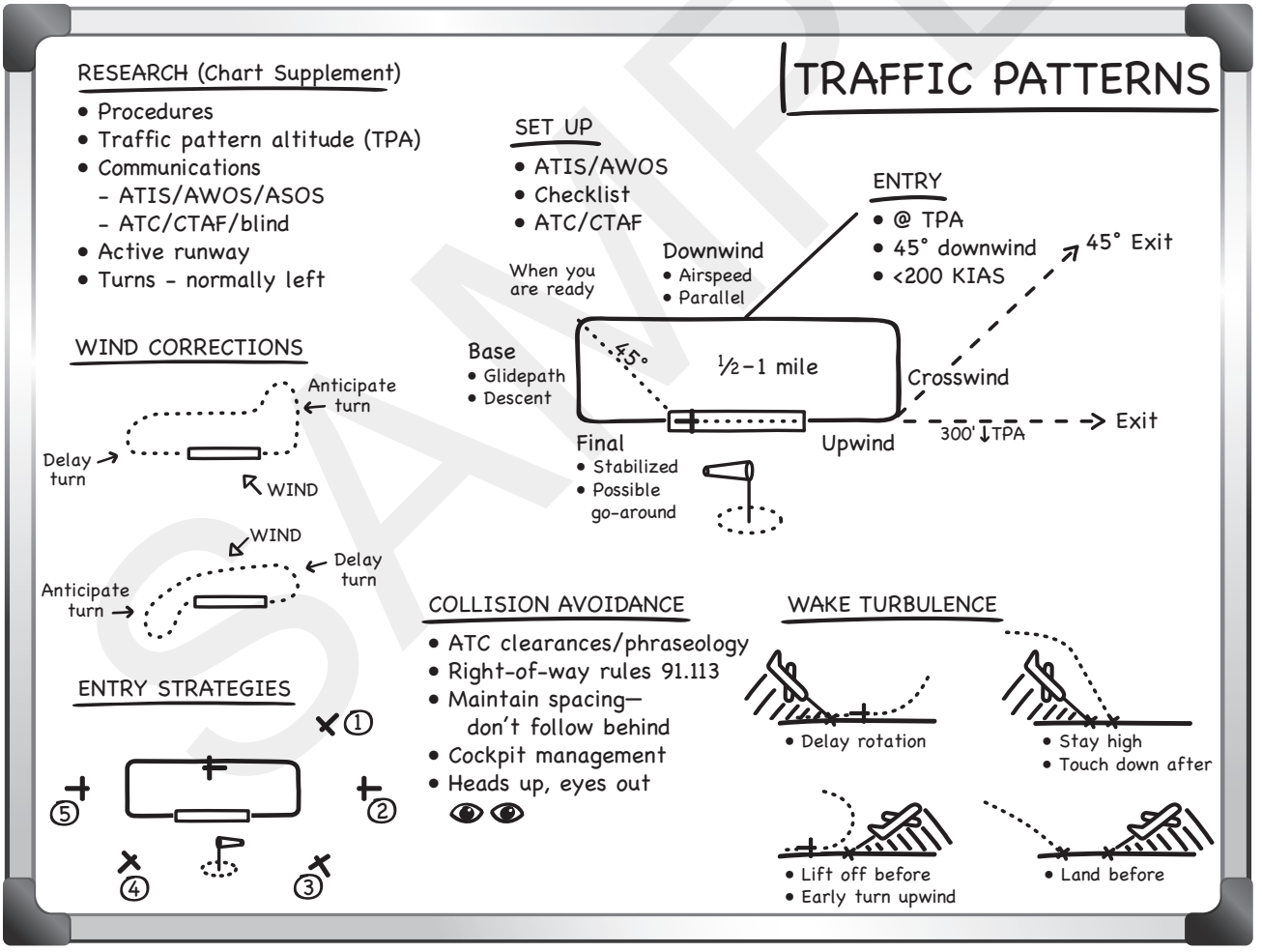
Spend at least three minutes introducing the maneuver to the client. Describe the situations that are motivation for learning it, as well as the objectives to strive for.

Motivation

The traffic pattern is a standardized rectangle around the runway. It provides an orderly flow of traffic for aircraft arriving, departing and operating in the vicinity of an airport. At the same time, the traffic pattern provides a flow of cockpit tasks the pilot must complete in preparation for takeoff and/or landing.

Objective

In this lesson you learn the correct procedures to arrive at, depart from, or operate around an airport.



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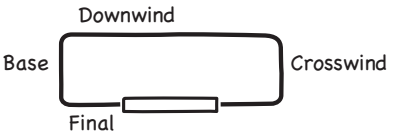
CHALKBOARD TALK

Elements of the Maneuver

First, a look at the universal elements of the maneuver—those elements that are not aircraft-specific.



Pattern leg names:

- Downwind.
- Base.
- Final.
- Crosswind.

Research

Takeoff begins before leaving the dispatch area. The first thing a pilot does in preparation for takeoff is research:

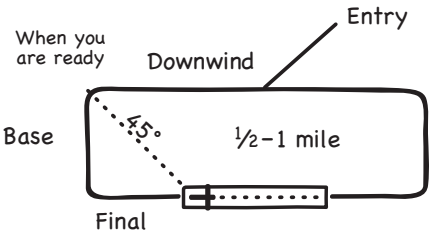
- Research in Chart Supplement (CS):
  - Some airports have special procedures including noise abatement or obstacle clearance.
  - Traffic pattern altitude—what it is, why it's important; in the Chart Supplement, or 1,000 feet AGL.
  - Who will you communicate with—
    AWOS/ATIS/ASOS (for the latest information about the airport).
    ATC/CTAF/into the blind (who you might talk to, around the airport).
  - Identify notable obstacles and wires, and the procedures to avoid them.
- The active runway should be the one most aligned with wind.
- Turns are normally to the left.
- Major runway markings and lighting.

Add the cockpit tasks and aircraft configuration changes to complete along each leg:

- Set up—about 10 miles outside a nontowered field. At controlled fields it depends on the airspace.
  - Listen to ATIS/AWOS.
  - Aircraft pre-landing checklists.
  - Communicate with ATC/CTAF.

SET UP
ATIS/AWOS
Checklist
ATC/CTAF

- Downwind—primary objective on downwind is to stabilize the airspeed. Starting abeam of the touchdown point:
  - Slow to approach speed and stabilize.
  - Maintain wind corrections to fly and remain parallel to runway.
  - Maintain traffic pattern altitude, don't begin a descent while flying away from the runway.
  - Turn base only when you are ready. If you begin abeam the touchdown point, you should be about 45° (however, this may change).
  - Continue to scan for traffic.
- On base—the objective on base is to stabilize the glide path:
  - Reduce power to achieve a speed of about 1.4 V_{S0}.
  - Begin stabilized descent.
  - Continue to scan for traffic.



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Arriving at _____ Airport

1. Noise abatement procedure _____ .
2. Operating at this airport: LSA, gliders, transport, cargo, military, other _____ .
3. About _____ miles out:
   a. Obtain _____ (ATIS/SWOS).
   b. Determine the active runway.
4. Contact _____ (approach/CTAF).
5. Inbound:
   a. Observe traffic pattern in use.
   b. Conform to pattern.
6. Enter a 45° ground track angle to downwind leg abeam midpoint of landing runway (unless otherwise directed by ATC).
7. Arrive at traffic pattern altitude minimum of _____ miles from the airport:
   a. TPA _____ AGL or _____ MSL
   b. Airspeed, reduce to ≈ _____ KIAS (unless conditions dictate otherwise)
8. About _____ miles from runway, complete the first pre-landing checklist.
9. Correct for wind drift for close, rectangular pattern:
   a. Use ≈ _____ mile distance from runway along downwind
   b. _____ miles on base.
   c. _____ mile final legs.
10. Visually check left and right before turning to next leg.
11. Announce intentions "into the blind" CTAF on nontowered fields, before turning each leg of the traffic pattern.
12. Avoid traffic collisions, wake turbulence and wind shear.

Downwind

Objective abeam touchdown point—stabilize airspeed.

1. Complete prelanding checklist:
   a. Below _____ KIAS, select gear down.
   b. Fuel pump _____ (On, Off, N/A, etc.)
   c. Slowing into white arc _____ flaps.
   d. Cowl flaps _____
   e. Other _____
   f. Slow to _____ KIAS, trim, stabilize.
2. Scan for traffic.
3. Turn base leg.

On Base

Objective—stabilize the glide path.

1. Reduce power to achieve a speed of about 1.4 V_{S0} _____ KIAS.
2. Begin stabilized descent.
3. Continue to scan for traffic.

Final

Objective—make only small corrections as necessary.

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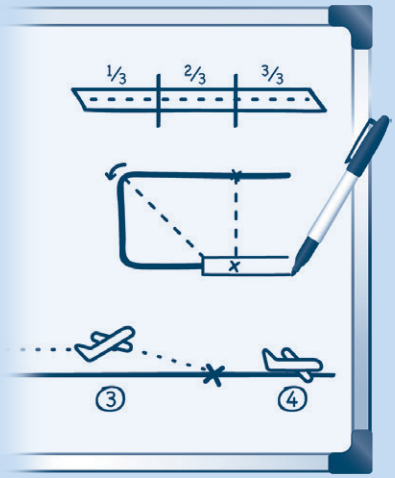
"When the student understands meaning before tackling detail, they learn more quickly and more completely. Arlynn seamlessly combines the 'why' with the 'how' of learning maneuvers… [and] provides the instructor with more tools for their teaching bag-of-tricks."

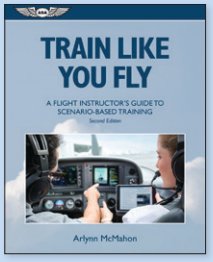
—from the foreword by Frank Ayers, Ed.D., Executive Vice President, Embry-Riddle Aeronautical University

Lesson Plans to Train Like You Fly presents lesson plans for flight instructors in the form of scenario-based maneuver briefings. A rich resource for active instructors, these lesson plans are also helpful to CFI applicants preparing their own materials. This book can be used as a companion book for flight instructors who are following the principles of scenario-based training taught in Arlynn McMahon's first book, *Train Like You Fly: A flight instructor's guide to scenario-based training.*

This book is designed to complement any syllabus and FAA testing standards (ACS/PTS) by explaining how to teach each maneuver, making the flight instructor's favorite curriculum even more effective and enjoyable for clients. Each maneuver briefing features a series of drawings instructors can discuss with their clients or replicate in the classroom and an accompanying script to teach from, which includes a story or motivation on why and how the maneuver is applied in actual flight. Common errors are discussed in the form of keys to success, to positively inspire clients to become sound aviation citizens.



Your maneuver briefings will come alive, with the "what to draw" examples and "what to say" teaching scripts in this book.



Flight instructor extraordinaire and flight school owner/operator **Arlynn McMahon** has helped more than 1,000 student pilots and CFIs fulfill their dreams of flight since 1984. She is a nationally recognized, professional aviation educator and leader in the field.

Arlynn McMahon is also author of *Train Like You Fly* (ASA-TRAIN-FLY2) and *The Flight Instructor's Survival Guide* (ASA-CFI-SG).

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