

UPSET PREVENTION & RECOVERY TRAINING (UPRT)

APS SELF-STUDY PREPARATORY GUIDE



This resource guides pilots through the process of self-study in preparation for participation in a practical Upset Prevention and Recovery Training (UPRT) course. As a stand-alone resource, this Preparatory Guide represents a form of mitigation to bridge the gap between pilot certification training and UPRT. We recommend pilots follow the guide in order to maximize their benefit. The guidance is organized as follows:

1. Foundational Information

2. Essential Aerodynamic Concepts

3. Topic Specific

Part 1: Foundational Information

Foundational UPRT information is important because it forms a basis for understanding the Loss of Control In-flight (LOC-I) threat and what we must do to mitigate it.

Self-study Resources and Target Reading

1. Pilot Project - Aerosafety World - Deficiencies in UPRT

- Identifies misperceptions and pitfalls of ineffective UPRT
- The entire article is pertinent and relevant to this subject.

2. ICAO Doc 10011, Manual on Aeroplane Upset Prevention and Recovery Training

- Addresses the development and design of modern, effective UPRT
- Section 1 describes the genesis of modern UPRT, and Section 2 addresses the overall approach and components of effective UPRT.

3. IATA Guidance Material and Best Practices for the Implementation of Upset Prevention and Recovery Training

- Describes the ideal, complete UPRT program from a professional pilot's perspective
- The first 8 sections are applicable for all pilots.

Available Online Courses

The following courses are optionally available that comprehensively address the foundational aspects of modernized UPRT and its implementation:

Persistent Threat of Loss of Control In-flight and Its Solutions

- Understand Your #1 Fatal Risk Factor as a Pilot

6 Essential Considerations in All Airplane Upset Recoveries

- What Matters in Every Upset Recovery



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Part 2: Essential Aerodynamic Concepts Unique to UPRT

Understanding aerodynamic considerations beyond the normal envelope is not currently required by licensing training. However, certain concepts change radically beyond critical angle of attack, beyond 90 degrees of bank, and in many other upset situations. Understanding these differences is crucial in an unexpected airplane upset.

Self-study Resources and Target Reading

1. Aerospace Engineering article on the VG Diagram

- a. Good overview of the VG diagram
- b. The entire article is pertinent and relevant to this subject.

2. NASA Modern Lift Equation article

- a. Good explanation of the various components of the lift equation
- b. The entire article is pertinent and relevant to this subject.

Available Online Courses

Dynamic Factors of Lift in Relation to Stalls

- Take Direct and Immediate Control of Your Safety Margins

Advanced V-G Diagram Applications

- Expand Practical Insights on Your Full Flight Envelope

Part 3: Topic-Specific Applications

Specific information is available for real-world application of principles in upset prevention and recovery.

Self-study Resources and Target Reading

1. Stall Prevention and Recovery Training, AC 120-109A

- a. Advisory Circular explaining a common stall recovery technique applicable to all fixed-wing aircraft
- b. Chapters 1, 3, & 5 along with Appendix 1

2. Upset Prevention and Recovery Training, AC 120-111

- a. Advisory Circular explaining nose high and nose low unusual attitude recovery considerations
- b. Chapters 2 and 4

Available Online Courses

Stall Awareness, Recognition and Recovery for All Airplanes

- Stalls Generate ~50% of All Fatal LOC-I Accidents

Fatal Nature of Cross-Control Stalls

- Top Threat in the Traffic Pattern

High Performance Jet Operations

- Transonic and Swept Wing Aerodynamics Insights