



Eagle Sport Aviation Club, Inc.

ADVANCED UPSET RECOVERY TRAINING COURSE



This course meets all FAA requirements and guidelines on **Upset Recovery Training for Approval of Manufacturer's Required Training Programs** (as outlined in AC 61-137A).

Rev. 1 (07/2013)

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Section 1

Administration

APPROVED AND ACCEPTED COURSEWARE

1. Federal Aviation Regulations
2. Aeronautical Information Manual
3. Handbook of Aeronautical Knowledge
4. Airplane Flying Handbook
5. Aviation Instructor's Handbook
6. Airport Facility/Directory
7. Computer-Aided Classroom Presentations
8. Stick and Rudder: An explanation of the Art of Flying by Wolfgang Langewiesche
9. Upset Training Notes by Andrea Luethi & Mikhael Ponso
10. Airplane Upset Recovery Training Aid by Airbus/Boeing/Flight Safety
11. Basic Aerobatics by Geza Szurovy & Mike Goulian
12. Better Aerobatics by Alan Cassidy
13. Advanced Aerobatics by Geza Szurovy & Mike Goulian

Ground Training

Section 2 of the training program manual consists of the ground school for the flight course contained within this manual and details the objectives, standards, program hours, and testing methods as well as the delivery methods used to meet the FAA guidelines on Upset Recovery Training for Approval of Manufacture's Required Training Programs (Outlined in AC 61-137A). This course includes all required flight concepts, techniques, demonstrations, tasks, and maneuvers.

Ground training will typically be conducted in a classroom environment. The classroom instruction is primarily lecture, supported by computer presentation software, videos, and panel displays. In certain cases the ground training may be delivered on a one on one basis between an instructor and student.

The table below provides the number of required modules, and the programmed training and testing hours for the completion of the ground school. Hours listed for individual modules may vary. Exact content of each module may be found in the syllabi contained in Section 2 of this manual.

Ground School	Modules	Hours	Testing Hours
Upset Recovery Training	GT1 – GT12	5.5	0.0

The primary objective of this ground training is to provide the understanding and analysis of situations that may lead to an upset situation, how to recognize and applying various recovery techniques.

The standard for completion of the curriculum is the successful completion of all ground and flight training modules contained within the course of training.

Flight Training

This section of the curriculum manual consists of the flight training course and details the training standards, program hours, and testing methods as well as the delivery methods used to meet the FAA guidelines on Upset Recovery Training for Approval of Manufacture’s Required Training Programs (Outlined in AC 61-137A). This course includes all required flight concepts, techniques, demonstrations, tasks, and maneuvers.

INSTRUCTIONAL DELIVERY METHOD

The modules developed for this course contain objectives, standards, and tasks to be accomplished during the conduct of the training activity. It is the responsibility of each instructor to develop specific lesson plans that satisfy the requirements of the modules and will permit the training to be accomplished in the most efficient manner possible for each training situation.

Each flight period will include an oral preflight briefing and an oral post-flight critique.

FLIGHT TRAINING PROGRAM HOURS

A breakdown of the training modules and the recommended times associated with them can be found in the Suggested Module Time Allocation table. The times stated for each individual training session are recommended times and do not necessarily need to be met during each activity. Additionally, each individual module can be completed at any time prior to course completion, providing the change does not affect the normal building blocks of learning and the objective of the lesson. The sequencing of training activities can be modified from that listed in the curriculum if the flight instructor deems it appropriate for optimal course delivery.

GRADUATION FROM THE TRAINING COURSE

Prior to being recommended for a certificate of completion the trainee must have satisfactorily completed the training specified for this course.

SUGGESTED MODULE TIME ALLOCATION TABLE

The Suggested Module Time Allocation table details the recommended hours for each training activity within the course as well as those activities that must be completed in accordance with the module objectives. The table provides a summary of the training time for the course and breaks down the time in a manner similar to that of a logbook. Although most training activities may not be completed in the recommended times listed, this table gives instructors and students an idea of how long the activity normally could take. It also highlights those activities that should be completed as per the Suggested Module Time Allocation table and the module objectives for those students that need to meet those specific FAR requirements.

Suggested Module Time Allocation Table

UPSET RECOVERY TRAINING								
		Total	SE	DAY	DUAL	PIC	PRE/POST	ORAL
Ground Module 1	GT 01							0.2
	GT 02							0.5
	GT 03							0.3
	GT 04							0.3
Ground Module 2	GT 05							0.3
	GT 06							0.3
	GT 07							1.0
	GT 08							0.4
Ground Module 3	GT 09							0.8
	GT 10							0.3
	GT 11							0.7
Ground Review	GT 12							0.4
Flight								
Flight 1	FT 01	0.7	0.7	0.7	0.7	0.7	0.5	
Flight 2	FT 02	0.7	0.7	0.7	0.7	0.7	0.5	
Flight 3	FT 03	0.7	0.7	0.7	0.7	0.7	0.5	
Flight 4	FT 04	0.7	0.7	0.7	0.7	0.7	0.5	
Flight 5	FT 05	0.7	0.7	0.7	0.7	0.7	0.5	
Flight 6	FT 06	0.7	0.7	0.7	0.7	0.7	0.5	
TOTAL		4.2	4.2	4.2	4.2	4.2	3.0	5.5

Section 2

Ground Training

Upset Recovery Training Ground School

Ground Training Applicability

This training curriculum is for pilots seeking to increase their knowledge and understanding of unusual attitudes and upset recovery procedures. This course meets the FAA Manufacture's Required Training Program requirement for Upset Recovery Training as outlined in AC 61-137A and includes the flight concepts, techniques, demonstrations, tasks, and maneuvers necessary.

Ground Training Objectives

The primary objective of this ground training is to provide the understanding and analysis of situations that may lead to an upset situation and how to recognize and recover from these events.

Completion Standards

At the end of this ground training curriculum segment, the student will have been introduced to the factors associated with upset recovery training, the advanced aerodynamics for an in-depth understanding, as well as an analysis of past accidents attributed to upset situations. Furthermore, the student will be taught the piloting skills necessary to perform basic aerobatic maneuvers with emphasis on upset recovery techniques and procedures.

Module GT-1 Introduction to Upset Training

Objective & Elements:

To introduce and develop students understanding in the following areas:

1. Why Upset Recovery Training
2. What are we trying to accomplish
3. Definition of airplane upset
4. Automation recovery
5. Danger of natural tendencies as a pilot

Study Guide

Upset Training by Andrea Luethi & Mikhael Ponso

Airplane Pilot Information Manual

Airplane Upset Recovery Training Aid by Airbus & Boeing

Basic Aerobatics by Geza Szurovy & Mike Goulian

Better Aerobatics by Alan Cassidy

Advanced Aerobatics by Geza Szurovy & Mike Goulian

Completion Standards

The students shall demonstrate by means of oral quizzing or written test that they have a basic understanding of the concepts presented in this lesson.

Instructor Equipment

Overhead projector, white erase board, markers, instructors notes, and an airplane model.

Instructor Actions

Discuss lesson objective and each of the elements outlined. Identify resources to obtain additional information about each of the elements and related line items to previous flight experience of the students.

Module GT-2 Causes of Airplane Upset Attitudes

Objective & Elements:

To introduce and develop students understanding in the following areas:

1. Causes of Airplane Upsets
 - 1.1. Environmentally induced airplane upsets
 - 1.1.1. Turbulence
 - 1.1.2. Clear air turbulence
 - 1.1.3. Mountain wave
 - 1.1.4. Windshear
 - 1.1.5. Thunderstorms
 - 1.1.6. Microbursts
 - 1.1.7. Wake Turbulence
 - 1.1.8. Airplane icing
 - 1.2. Systems-Abnormalities induced Airplane upsets
 - 1.2.1. Flight Instruments
 - 1.2.2. Autoflight systems
 - 1.2.3. Flight controls and other abnormalities
 - 1.3. Pilot induced airplane upsets
 - 1.3.1. Instrument cross-check
 - 1.3.2. Inattention and distraction from primary cockpit duties
 - 1.3.3. Vertigo or spatial disorientation
 - 1.3.4. Pilot incapacitation
 - 1.3.5. Improper use of airplane automation
 - 1.4. Combination of cause

Study Guide

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Completion Standards

The students shall demonstrate by means of oral quizzing or written test that they have a basic understanding of the concepts presented in this lesson.

Instructor Equipment

Overhead projector, white erase board, markers, instructors notes, and an airplane model.

Instructor Actions

Discuss lesson objective and each of the elements outlined. Identify resources to obtain additional information about each of the elements and related line items to previous flight experience of the students.

Module GT-3 G-Forces and Physiological Effects

Objective & Elements:

To introduce and develop students understanding in the following areas:

1. Types and direction of g-forces
2. Symptoms of g-force exposure
3. G-Tolerance and breathing techniques
4. Illusions and Spatial Disorientation

Study Guide

Upset Training by Andrea Luethi & Mikhael Ponso

Airplane Pilot Information Manual

Airplane Upset Recovery Training Aid by Airbus & Boeing

Basic Aerobatics by Geza Szurovy & Mike Goulian

Better Aerobatics by Alan Cassidy

Advanced Aerobatics by Geza Szurovy & Mike Goulian

Completion Standards

The students shall demonstrate by means of oral quizzing or written test that they have a basic understanding of the concepts presented in this lesson.

Instructor Equipment

Overhead projector, white erase board, markers, instructors notes, and an airplane model.

Instructor Actions

Discuss lesson objective and each of the elements outlined. Identify resources to obtain additional information about each of the elements and related line items to previous flight experience of the students.

Module GT-4 Transport Category Accidents involving Aircraft Upsets

Objective

This ground module requires the student to review the two part video training aid “Airplane Upset Recovery” before the following are discussed:

1. Part one of Boeing “Airplane Upset Recovery Training Aid”
2. Part two of Boeing “Airplane Upset Recovery Training Aid”
3. To discuss transport category accidents that involved aircraft upsets
 - a. Charlotte, 2 July 1994
 - b. Birmingham, 10 July 1991
 - c. Toledo, 15 February 1992
 - d. Shemya, 6 April 1993
 - e. Nagoya, 26 April 1994
 - f. Pittsburgh, 8 September 1994
 - g. Roselawn, 31 October 1994
 - h. Detroit, 9 January 1997

Study Guide

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Completion Standards

The students shall demonstrate by means of oral quizzing or written test that they have a basic understanding of the concepts presented in this lesson.

Instructor Equipment

Overhead projector, white erase board, markers, instructors notes, and an airplane model.

Instructor Actions

Discuss lesson objective and each of the elements outlined. Identify resources to obtain additional information about each of the elements and related line items to previous flight experience of the students.

Module GT-5 Tailwheel Operations

Objective

To introduce and develop students understanding in the following areas:

1. Tail wheel airplane operations
 - a. Visibility on the ground and in the air
 - b. Application of brakes including parking brake
 - c. Weather vane stability effect
 - d. Ground Loop
 - e. Proper crosswind controls during taxi, takeoff and landing

Study Guide

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Better Aerobatics by Alan Cassidy

Advanced Aerobatics by Geza Szurovy & Mike Goulian

Completion Standards

The students shall demonstrate by means of oral quizzing or written test that they have a basic understanding of the concepts presented in this lesson.

Instructor Equipment

Overhead projector, white erase board, markers, instructors notes, and an airplane model.

Instructor Actions

Discuss lesson objective and each of the elements outlined. Identify resources to obtain additional information about each of the elements and related line items to previous flight experience of the students.

Module GT-6 Stability

Objective

To introduce and develop students understanding in the following areas:

1. Stability
 - a. Yaw Stability
 - i. Weather vane stability effect
 - b. Roll Stability
 - i. Dihedral Effect
 1. Wing Placement
 2. Dihedral angle
 3. Wing Sweep
 - c. Review crosswind takeoff and landing procedures

Study Guide

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Better Aerobatics by Alan Cassidy
Advanced Aerobatics by Geza Szurovy & Mike Goulian

Completion Standards

The students shall demonstrate by means of oral quizzing or written test that they have a basic understanding of the concepts presented in this lesson.

Instructor Equipment

Overhead projector, white erase board, markers, instructors notes, and an airplane model.

Instructor Actions

Discuss lesson objective and each of the elements outlined. Identify resources to obtain additional information about each of the elements and related line items to previous flight experience of the students.

Module GT-7 Forces on an Aircraft

Objective

To introduce and develop students understanding in the following areas:

1. Basic forces on an aircraft
2. Weight
3. Thrust
4. Lift
 - a. Newton
 - b. Bernoulli
 - c. Magnus
5. Zero Lift Line

Study Guide

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Better Aerobatics by Alan Cassidy

Advanced Aerobatics by Geza Szurovy & Mike Goulian

Completion Standards

The students shall demonstrate by means of oral quizzing or written test that they have a basic understanding of the concepts presented in this lesson.

Instructor Equipment

Overhead projector, white erase board, markers, instructors notes, and an airplane model.

Instructor Actions

Discuss lesson objective and each of the elements outlined. Identify resources to obtain additional information about each of the elements and related line items to previous flight experience of the students.

Module GT-8 Forces on an Aircraft Cont.

Objective

To introduce and develop students understanding in the following areas:

1. Review Zero Lift Line
2. Drag
 - a. Induced Drag
 - b. Parasite Drag
 - c. Total Drag
 - d. Drag in relation to load factor
3. Forces in a Loop

Study Guide

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Advanced Aerobatics by Geza Szurovy & Mike Goulian

Completion Standards

The students shall demonstrate by means of oral quizzing or written test that they have a basic understanding of the concepts presented in this lesson.

Instructor Equipment

Overhead projector, white erase board, markers, instructors notes, and an airplane model.

Instructor Actions

Discuss lesson objective and each of the elements outlined. Identify resources to obtain additional information about each of the elements and related line items to previous flight experience of the students.

Module GT-9 Loads and Limits on Airplane and Pilot

Objective

To introduce and develop students understanding in the following areas:

1. Energy Management
2. Structural Design Limitations
3. V-G diagram
4. Stall Speed
5. Normal Operating Speed
6. Wing Loading
7. Load Factor

Study Guide

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Better Aerobatics by Alan Cassidy

Advanced Aerobatics by Geza Szurovy & Mike Goulian

Completion Standards

The students shall demonstrate by means of oral quizzing or written test that they have a basic understanding of the concepts presented in this lesson.

Instructor Equipment

Overhead projector, white erase board, markers, instructors notes, and an airplane model.

Instructor Actions

Discuss lesson objective and each of the elements outlined. Identify resources to obtain additional information about each of the elements and related line items to previous flight experience of the students.

Module GT-10 Slip vs Skid

Objective

To introduce and develop students understanding in the following areas:

1. Coordinated flight
2. Slip aerodynamics
3. Skid aerodynamics

Study Guide

Upset Training by Andrea Luethi & Mikhael Ponso

Airplane Pilot Information Manual

Airplane Upset Recovery Training Aid by Airbus & Boeing

Basic Aerobatics by Geza Szurovy & Mike Goulian

Better Aerobatics by Alan Cassidy

Advanced Aerobatics by Geza Szurovy & Mike Goulian

Completion Standards

The students shall demonstrate by means of oral quizzing or written test that they have a basic understanding of the concepts presented in this lesson.

Instructor Equipment

Overhead projector, white erase board, markers, instructors notes, and an airplane model.

Instructor Actions

Discuss lesson objective and each of the elements outlined. Identify resources to obtain additional information about each of the elements and related line items to previous flight experience of the students.

Module GT-11 Spins

Objective

To introduce and develop students understanding in the following areas:

1. Aerodynamics of spins
2. Phases of a spin
3. Characteristics due to aircraft design
4. Pilot controlled variables
5. Spin recovery procedure
6. Aggravated spins

Study Guide

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Airplane Upset Recovery Training Aid by Airbus & Boeing

Basic Aerobatics by Geza Szurovy & Mike Goulian

Better Aerobatics by Alan Cassidy

Advanced Aerobatics by Geza Szurovy & Mike Goulian

Completion Standards

The students shall demonstrate by means of oral quizzing or written test that they have a basic understanding of the concepts presented in this lesson.

Instructor Equipment

Overhead projector, white erase board, markers, instructors notes, and an airplane model.

Instructor Actions

Discuss lesson objective and each of the elements outlined. Identify resources to obtain additional information about each of the elements and related line items to previous flight experience of the students.

Module GT-12 Upset Attitudes / Aerobatic Maneuvers / Review

Objective

To introduce and develop students understanding in the following areas:

1. Nose high unusual attitude
2. Nose low unusual attitude
3. Loop
4. Roll
5. Spin
6. Inverted recovery
7. Knife edge flight

8. Course Review

Study Guide

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Airplane Pilot Information Manual
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Advanced Aerobatics by Geza Szurovy & Mike Goulian

Completion Standards

The students must demonstrate by means of a written test that they have a basic understanding of the concepts presented in this course. The written test will be graded according to university policy and calculated into the final course grade.

Instructor Equipment

Overhead projector, white erase board, markers, instructors notes, and an airplane model.

Instructor Actions

Discuss lesson objective and each of the elements outlined. Identify resources to obtain additional information about each of the elements and related line items to previous flight experience of the students.

Section 3

Flight Training

Upset Recovery Training

Applicability

This training curriculum is for pilots seeking to increase their knowledge and understanding of unusual attitudes and upset recovery procedures.

Minimum Aircraft and Flight Training Equipment

This course requires the use of an FAA-approved aerobatic aircraft (Airplane Single-Engine Land).

Minimum Instructor Qualifications

An instructor for this curriculum must hold a valid Flight Instructor certificate with at least an Airplane Single-Engine rating, a valid FAA 3rd Class medical certificate, and have satisfactorily completed the instructor checkout procedures of the Eagle Sport Aviation Club, Inc. (ESA).

Minimum Evaluator Qualifications

No evaluators are required for this course.

Certificate/Rating Earned Upon Curriculum Completion

None

Enrollment Requirements

To enroll in this course, the enrollee must hold a Private Pilot certificate with an Airplane category, Single-Engine Land class rating.

Flight Training Objectives

This course is designed to augment the skills and knowledge of pilots who desire to increase their understanding of the situations that can lead to upset scenarios and learn how to react to those situations if and when they should occur.

Testing Standards

There is no check ride associated with this course and the completion of all training modules will signify satisfactory completion of this course.

Flight Training Program Hours

A breakdown of the training modules and the recommended times associated with them can be found in the Suggested Hours Allocation table. The times stated for each individual training session are recommended times and do not necessarily need to be met during each activity. However, certain modules are used to meet specific regulatory requirements. If the student has not previously satisfied those requirements the modules must be completed in accordance with the modules lesson objectives.

Graduation Requirements

Prior to graduating from this course the enrollee must have satisfactorily completed the training specified for this course.

Module 01 (UPSET)

Lesson Objectives:

This module will develop the student's ability to recognize upset situations and know how to apply the proper recovery procedures.

1. Preflight
2. Aircraft operations
 - 2.1 Preflight Actions for aerobatic airplanes
 - 2.2 Transfer of controls
 - 2.3 FAR's pertaining to aerobatics
 - 2.4 Emergency operations:
 - 2.4.1 Parachute operation
 - 2.4.2 Egress, Bail Out Procedures
 - 2.4.3 Seat belts
 - 2.4.4 Emergency Briefing
 - 2.5 Oil System
 - 2.6 Fuel System
3. Normal Takeoff and Climb
4. Clearing Turns
5. Wingover
6. Stalls with turns
7. Falling leaf
8. Spins to the left and to the right
9. Demonstration of two point roll inverted safety check
10. Aileron Roll
11. Trim Malfunctions (Pitch mis-trim, runaway trim)
12. Slow roll
13. "G" Maneuver
14. Inverted Recovery
15. Normal Approaches and Landings

Pre-briefing:

Instructor will discuss the objective of the lesson and determine whether the student is adequately prepared for the activity. Each line item will be briefly covered and the student should have a clear understanding of how the training activity will be conducted and what standards will be expected of them.

Completion Standards:

This lesson will be complete when the student has successfully accomplished in-flight recoveries from upset situations, basic acrobatic maneuvers, and spins.

Debriefing:

Solicit a self-critique from the student(s) about their personal performance. Use this information to direct your analysis of their flight, then discuss what you perceive to be their strong and weak points. Provide guidance on how they should prepare for the next flight activity so as not to diminish their strong points, and to improve upon their weak points.

Module 02 (UPSET)

Lesson Objectives:

This module will develop the student's ability to recognize upset situations and know how to apply the proper recovery procedures.

1. Normal Takeoff and Landing
2. Two point roll inverted safety check
3. Wingover
4. Aileron Roll
5. One turn Spins to the left and to the right
6. Inverted Recovery
7. Loop
8. Knife edge flight to the left and to the right
9. Nose Low Recovery
10. Nose High Recovery
11. Normal Approaches and Landings

Pre-briefing:

Instructor will discuss the objective of the lesson and determine whether the student is adequately prepared for the activity. Each line item will be briefly covered and the student should have a clear understanding of how the training activity will be conducted and what standards will be expected of them.

Completion Standards:

This lesson will be complete when the student has successfully accomplished in-flight recoveries from upset situations, basic acrobatic maneuvers, and spins.

Debriefing:

Solicit a self-critique from the student(s) about their personal performance. Use this information to direct your analysis of their flight, then discuss what you perceive to be their strong and weak points. Provide guidance on how they should prepare for the next flight activity so as not to diminish their strong points, and to improve upon their weak points.

Module 03 (UPSET)

Lesson Objectives:

This module will develop the student's ability to recognize upset situations and know how to apply the proper recovery procedures.

1. Normal Takeoff and Landing
2. Spins to the left and to the right
3. Wingover
4. Falling leaf
5. Two point roll inverted safety check
6. Slow roll
7. Aileron Roll
8. Inverted Recovery via roll
9. Split S
10. Loop
11. Nose Low Recovery
12. Nose High Recovery
13. Normal Approaches and Landings

Pre-briefing:

Instructor will discuss the objective of the lesson and determine whether the student is adequately prepared for the activity. Each line item will be briefly covered and the student should have a clear understanding of how the training activity will be conducted and what standards will be expected of them.

Completion Standards:

This lesson will be complete when the student has successfully accomplished in-flight recoveries from upset situations, basic acrobatic maneuvers, and spins.

Debriefing:

Solicit a self-critique from the student(s) about their personal performance. Use this information to direct your analysis of their flight, then discuss what you perceive to be their strong and weak points. Provide guidance on how they should prepare for the next flight activity so as not to diminish their strong points, and to improve upon their weak points.

Module 04 (UPSET)

Lesson Objectives:

To develop the student's competence in recognizing advanced upset situations, knowing the proper recovery techniques, and being able to execute those techniques in the aircraft.

1. Normal Takeoff and Landing
2. Inverted safety check
3. Wingover
4. Aileron Roll
5. Spin
6. Inverted Recovery
7. Loop
8. Nose Low Recovery
9. Nose High Recovery
10. Cuban Eight
11. Immelman
12. Normal Approaches and Landings

Pre-briefing:

Instructor will discuss the objective of the lesson and determine whether the student is adequately prepared for the activity. Each line item will be briefly covered and the student should have a clear understanding of how the training activity will be conducted and what standards will be expected of them.

Completion Standards:

This lesson will be complete when the student has successfully accomplished in-flight recoveries from upset situations and advanced acrobatic maneuvers.

Debriefing:

Solicit a self-critique from the student(s) about their personal performance. Use this information to direct your analysis of their flight, then discuss what you perceive to be their strong and weak points. Provide guidance on how they should prepare for the next flight activity so as not to diminish their strong points, and to improve upon their weak points.

Module 05 (UPSET)

Lesson Objectives:

To develop the student's competence in recognizing advanced upset situations, knowing the proper recovery techniques, and being able to execute those techniques in the aircraft.

1. Normal Takeoff and Landing
2. Wingover
3. Inverted safety check
4. Aileron Roll
5. Spin
6. Inverted Recovery
7. Loop
8. Nose Low Recovery
9. Nose High Recovery
10. Cuban Eight
11. Immelman
12. Hammerhead
13. Normal Approaches and Landings

Pre-briefing:

Instructor will discuss the objective of the lesson and determine whether the student is adequately prepared for the activity. Each line item will be briefly covered and the student should have a clear understanding of how the training activity will be conducted and what standards will be expected of them.

Completion Standards:

This lesson will be complete when the student has successfully accomplished in-flight recoveries from upset situations and advanced acrobatic maneuvers.

Debriefing:

Solicit a self-critique from the student(s) about their personal performance. Use this information to direct your analysis of their flight, then discuss what you perceive to be their strong and weak points. Provide guidance on how they should prepare for the next flight activity so as not to diminish their strong points, and to improve upon their weak points.

Module 06 (UPSET)

Lesson Objectives:

To develop the student's competence in recognizing advanced upset situations, knowing the proper recovery techniques, and being able to execute those techniques in the aircraft.

1. Normal Takeoff and Climb
2. Inverted safety check
3. Wingover
4. Loop
5. Aileron Roll
6. Spin Entry and Recovery
7. Nose Low Recovery
8. Nose High Recovery
9. Inverted Recovery via roll
10. Split S
11. Cuban Eight
12. Immelman
13. Hammerhead
14. Normal Approach and Landing

Pre-briefing:

Instructor will discuss the objective of the lesson and determine whether the student is adequately prepared for the activity. Each line item will be briefly covered and the student should have a clear understanding of how the training activity will be conducted and what standards will be expected of them.

Completion Standards:

This lesson will be complete when the student has successfully accomplished in-flight recoveries from upset situations and advanced acrobatic maneuvers.

Debriefing:

Solicit a self-critique from the student(s) about their personal performance. Use this information to direct your analysis of their flight, then discuss what you perceive to be their strong and weak points. Provide guidance on how they should prepare for the next flight activity so as not to diminish their strong points, and to improve upon their weak points.