



# FLIGHT TRAINING COURSE

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## **SECTION 1: INSTRUCTOR - STUDENT RESPONSIBILITIES**

Your instructor has accepted the responsibility to teach you to become a responsible and safe pilot who can be proud of your flying abilities and can be an enjoyable fellow club member. **THE INSTRUCTOR AND THE WRCC CLUB TAKE NO RESPONSIBILITY FOR ANY DAMAGE TO THE AIRCRAFT OR OBJECTS WITH WHICH THE AIRCRAFT COMES IN CONTACT (ie: motor vehicles) DURING ANY TRAINING SESSIONS.**

If you ignore the responsibility, you may be a pilot who is a hazard to yourself and other club members.

You must pass a wings test before you are allowed to fly at the club field without supervision.

As a student you have shown the diligence to build your first trainer, seek out the WRCC and join this training program. It is your responsibility to apply yourself diligently and to ensure that an instructor is at the field. Phone to make sure that there will be an instructor present.

## SECTION 2: AIRCRAFT FAMILIARIZATION

### Purpose:

To teach the student how to properly pre-flight his model.

### Objective:

At the completion of the lesson the student should be able to inspect his model and identify any deficiencies that could cause a malfunction or safety hazard. He will be able to start and adjust the engine properly.

### Elements:

1. Inspection of aircraft structure, Center of Gravity and longitudinal balance.
2. Inspection of radio installation.
3. Inspection of all linkages and control surfaces including controls for proper throw, direction and freedom of movement.
4. Engine, fuel system installation and security (including propellers).
5. Instructor's demonstration of safe engine starting procedure and starting of engine.
6. Student starts and adjusts engine.
7. Instructor teaches student how to identify rich and lean engine settings.
8. Instructor teaches students how to adjust the idle mixture to get optimum performance from that type of engine.

### Evaluation:

Student should be able to perform lesson Objectives.

THIS LESSON SHOULD BE REVIEWED AS NECESSARY AT THE START OF ALL LESSONS IN THE PRIMARY TRAINING COURSE.

## SECTION 3: CHECK LIST

Before each flying session:

1. Radio range check.

Before each flight:

### Pre-Start

1. Frequency Board - Peg in Place
2. Receiver Battery - Voltage Check
3. Radio Antenna - Out
4. Radio Transmitter - On and Checked for Interference
5. Radio Receiver - On
6. Aircraft Controls - Transmitter Operation Check
7. Throttle set

### Start

1. Aircraft Secure
2. All Clear - Ahead (prop) and Behind
3. Run Up - Mixture Set (engine testing to take place in testing area)
4. Idle - Reliable

### Pre-Takeoff

1. Engine - Full Power Performance OK
2. Controls - Free and Correct
3. Rate Switches - Set
4. Trims - Set for Take-off
5. Timer - On
6. Wind Sock - Checked
7. Runway - Clear
8. Announce intention to take off to other pilots on flight line.

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Evaluation:

## SECTION 4: FLIGHT FAMILIARIZATION

### Purpose:

To introduce the student to controlling the model in flight.

### Objective:

To allow the student to become familiar with the model's controls and their use in flight.

### Elements:

1. On the ground, instructor familiarizes the student with the controls (pitch, yaw and power) and what kind of affect they will have on the aircraft in flight.  
  
The procedures used by the instructor to give the transmitter to the student and take it from him during the flight will be explained.  
  
NOTE: As each instructor has different preferences concerning the process of exchanging the transmitter the student should ensure that he has reviewed and understands this procedure with new instructors.
2. Instructor flies and lands the student's model to evaluate its performance and air worthiness. This flight determines any changes necessary for control throws and trims. If the instructor can trim the aircraft without landing the aircraft, the transmitter will be passed to the student.
3. With the assistance and direction of the instructor, the student will start the process of becoming familiar with the controls.
4. The student will strive to keep the model in level flight and follow turning instructions given by the instructor.
5. When the student becomes tired or disoriented, pass the transmitter back to the instructor.

NOTE: It is the student's responsibility to pass the transmitter back to the instructor in time for the instructor to take corrective action to prevent a crash. Concentrate on flying within your ability. If you become disoriented or confused, pass the transmitter back to the instructor.

### Evaluation:

The lesson is complete when the instructor has determined that the student is able to determine and execute proper control inputs to achieve a desired change in the model's attitude. Proficiency and accurate control are not critical at this point.

## SECTION 5: FLIGHT MANEUVERS

### Purpose:

To acquaint the student with the basic flight maneuvers.

### Objective:

To teach the student to properly control the model during basic maneuvering.

### Elements:

1. Level Flight and trim (Aileron and elevator)
2. Banked turns (30 deg)
3. Straight Climbs (add power and trim)
4. Climbing turns
5. Gliding (idle power and trim)
6. Disorientation (silhouette and R+L reversal with inbound aircraft)

NOTE: An explanation of disorientation and the use of trim should precede this lesson. The six maneuvers should be taught in the order listed, if possible.

### Evaluation:

The lesson is complete when the student can perform the maneuvers without assistance from the instructor. Each maneuver should be done with a reasonable degree of accuracy.  
Example: Turns should be fairly smooth and altitude maintained fairly well.

## SECTION 6: ACCURACY MANEUVERS

### Purpose:

To teach the student to perform the five basic maneuvers to a standard that will develop proficiency in their executions.

### Objective:

To develop the skill and ability of the student to control the model in a specific manner.

### Elements:

1. Level flight, maintaining heading and altitude
2. Level flight at reduced power, maintaining heading, altitude and trim.
3. Left and right turns to specific headings.
4. Climbing turns to specific headings.
5. Use of rudder for turns and maintaining straight flight at slower speeds.
6. Power off (idle) glides that require the student to maneuver the model to a specific area and approximate altitude. Example: Have the student close the throttle over the south end of the field at 200 ft. and glide to the north end at an altitude of about 100 ft.

NOTE: Keep in mind that the object is to develop skill and ability, and an awareness of the model's position relative to directions and altitude. Don't insist on mechanical precision. Review disorientation with the student if necessary.

### Evaluation:

The lesson is complete when the student can maneuver the model at the instructor's directions and can demonstrate an ability to control the model in an accurate manner.



## SECTION 7: ORIENTATION MANEUVERS

### Purpose:

To develop the judgment, skill and ability necessary for the student to make his first landing.

### Objective:

To teach the student to control the model regardless of its heading or direction relative to himself.

### Elements:

1. Figure 8 - the student must fly a figure 8 pattern consisting of two 360 degree turns, one left and one right. The student must place the maneuver in front of himself at a safe distance and altitude.
2. The student must fly a rectangular pattern at a safe altitude, with the upwind leg crossing the landing area.

NOTE: The instructor will designate the size, altitude and distance of both maneuvers.

### Evaluation:

The lesson is complete when the student can fly the Figure 8 without experiencing disorientation and can fly both right and left rectangular patterns consistently and accurately.

## SECTION 8: STALLS

### Purpose:

To develop the student's understanding of stalls, their cause and avoidance.

### Objectives:

To teach the student to recognize and recover from stalls.

### Elements:

1. Pre-flight discussion of stalls. What causes them and how to recover.
2. Practice of stalls by the student with power and without power.
3. Stalls in turns, (take-off, departure stalls)

NOTE: Take-off and departure stalls are almost impossible to set up with most trainers, but do occur in more advanced models. Therefore, it is recommended that power be reduced to about 1/3 throttle, and a steep climbing turn entered. The stall entry will look similar to a spin entry with the model rolling toward the high wing. During this lesson it should be emphasized to the student that a stall can occur at any airspeed and is a function of angle of attack.

### Evaluation:

The lesson is complete when the student understands the cause of stalls and has demonstrated the lesson elements and proper recovery.

## SECTION 9: TAKE-OFF

Purpose:

To teach the student how to make a normal take-off.

Objective:

To teach the student how to control the model during take-off.

Elements:

1. Discussion of the effects of torque during take-off and initial climb.
2. Use of rudder.
3. Use of throttle.
4. Use of elevator.
5. Student makes a normal take-off INTO wind.

Evaluation:

The lesson is complete when the student has successfully taken off and established a normal climb with adequate airspeed. He must also demonstrate adequate directional control during take-off.

## SECTION 10: APPROACHES TO LANDING

### Purpose:

To prepare the student for his first landing.

### Objective:

To develop the student's ability to visualize and perform a stable and controlled approach and landing.

### Elements:

1. Review of lesson 6. (Slow Flight and Gliding)
2. Discussion of proper landing techniques.
3. Student flies a rectangular pattern as in lesson 6, but reduces power and establishes an appropriate glide on the base leg and continues the approach until over the end of the runway, at which point he is to add power and go around. The minimum altitude at the end of the maneuver should be no less than 20 ft.
4. As the student becomes comfortable with the maneuver, the altitude should be lowered until the instructor is confident that the model can glide to the runway with the power off (idle).
5. Landing. At this point the instructor will tell the student to continue the approach and land.

NOTE: The chances of a successful landing will be increased if the instructor reminds the student to keep the power at idle. It may be necessary to talk the student through the flare and touchdown.

### Evaluation:

The lesson is complete and the student can advance to supervised solo flight after the student has successfully landed the model several times and is comfortable with the maneuver.

## SECTION 11: SOLO FLIGHT

### Purpose:

Confidence building exercise.

### Objective:

The student is to perform a solo flight demonstrating the knowledge and skill objectives of the previous nine lessons to the instructor.

### Elements:

1. Pre-flight discussion to answer questions and resolve any problems that concern the student about the lesson.
2. Student performs a flight, under the instructor's supervision, starting with a thorough pre-flight and ending with the transmitter back in the impound.
3. Instructor monitors student's performance, but assists only when necessary.

### Evaluation:

The lesson is complete and the student signed off for solo flight ONLY after he has demonstrated a practical knowledge of all course objectives AND has observed all safety and field operating rules, and has successfully flown his model unassisted.

## SECTION 12: EMERGENCY PROCEDURES

### Purpose:

To prepare the student for the unexpected.

### Objective:

To acquaint the student with safe procedures to be used in emergencies.

### Elements:

1. Discussion of possible in-flight problems and how to deal with them.
2. Unusual altitude training (optional): a) loops b) rolls
3. Student performs dead stick landing.
4. Cross wind take-offs and landings (optional)

### Evaluation:

The elements of this lesson are only suggestions and there is no minimum performance requirement, the objective is to provide the student with the insights that will assist him in safely dealing with the unexpected. Experience will teach him the rest.

IF THE STUDENT DOESN'T LEARN, THE INSTRUCTOR HASN'T TAUGHT.

