

Spirits of St. Louis R/C Flying Club, Inc.

RADIO CONTROLLED MODEL FLIGHT TRAINING PROGRAM

The materials contained in this training manual are presented in an effort to accomplish two missions:

- To assist in guiding an experienced R/C pilot through the necessary steps in training others.
- To enhance the students understanding of the basic elements required for safely flying a radio-controlled model airplane.

Every instructor should acquaint himself with these materials. The skills necessary for solo flight found in the lesson plan should be taught in the order presented to provide consistency in the program.

Students are cautioned that this is a basic program and there is much more to be learned.

It should also be noted that some of the attributes of piloting can't be taught. Every pilot and plane presents a potential hazard. Good pilots intuitively know their own limitations as well as the limitations of their plane. They have the wisdom to delay or cancel a flight when necessary and the maturity to know when it is time to ask for advice. Hopefully this program will reduce the risks involved by cultivating some of that wisdom and maturity in all of us.

This Model Flight Training Program is described in stages rather than lessons. Each stage will advance your knowledge of flying models with a final goal of soloing and flying your model without assistance. Each stage may take several flights depending on the aptitude and experience of the trainee. To expand your knowledge of Radio Control Flying in general, it is recommended that you study Sig's "The Basics of Radio Control", which is usually available at club meetings.

STAGE 1: MODEL EVALUATION AND EARLY FLIGHT FAMILIARIZATION

The Instructor will do the following:

- a) Discuss safety and field usage regulations and practices pertaining to the frequency board, the pit area, taxiing, takeoff and landing callouts.
- b) Inspect and evaluate construction and assembly of model for airworthiness. Check the radio for correct direction of movement and throws of controls. Check to see that the frequency is properly identified. Assure that batteries have been charged. Discuss items checked with the student and point out preferred methods of construction and assembly.
- c) Run and tune the engine and discuss the technique of tuning a model engine and checking for proper fuel feed.
- d) Perform radio range check
- e) Hook up a buddy box and familiarize the student with its operation.
- f) Discuss basic flight controls, what they do and what to expect during a flight.
- g) Taxi the plane out and take off, climb to proper altitude and trim the plane for level flight. Discuss with the student what is being done. Demonstrate gentle left and right turns.
- h) Transfer control to the student. Instruct and allow him to perform level flight and gentle left hand turns in an oval pattern. When left hand turns are satisfactory, change to right hand turns in an oval pattern.
- i) Take control and land the plane. Point out to the student the downwind, base and final approach legs, throttle management and aircraft attitude during the landing.
- j) Repeat the necessary steps in this stage until the student is competent at making left and right hand oval patterns with no loss or gain of altitude.

STAGE 2: TAXIING, CLIMBS AND GLIDES, FIGURE EIGHTS AND LANDINGS.

The Instructor will do the following:

- a) Allow the student to taxi the plane to the runway, practice making left and right turns on the runway and position the plane for takeoff.
- b) Take the plane off, climb to altitude and trim for level flight.
- c) The instructor will demonstrate climbing under power and leveling off at a new altitude, gliding with reduced power to a lower altitude and resuming power. The student will then practice these procedures until he can do them proficiently.

The Student will do the following:

- d) At a level altitude, fly a horizontal figure eight pattern, gaining proficiency in making left and right turns, rolling out level, and then entering the opposite turn.
- e) As proficiency is gained, be taught the proper way to enter the landing pattern, fly the pattern for an approach to a landing and execute a go-around. The instructor will land the plane when the flight is ended.

STAGE 3: TAKEOFFS AND LANDINGS

- a) By this time the student should be quite comfortable with controlling the airplane and be thoroughly familiar with all the flight controls.
- b) The student will call out his intention to enter the runway, taxi the plane into position and practice some initial pre-takeoff rolls at medium speed. The instructor can have his throttle on the "idle" setting and take over control if the plane goes astray.
- c) The takeoff rolls can increase in speed gradually with the instructor coaching the procedures. As the student gains taxiing proficiency, he will be allowed to apply full power and execute the takeoff and climb to altitude.
- d) The student can keep the plane in the pattern for a landing or execute some climbs, glides, and turns to refresh his ability as necessary.
- e) The student will enter the landing pattern, being coached by the instructor as to the proper altitude, position, aircraft attitude, and speed/throttle setting at the various positions. The student will make the full approach to a landing and will execute the landing if at all possible. The instructor will coach him all the way down and be ready to abort the landing and take over control if necessary.
- f) Aborted landings (go-arounds) should be practiced by the student.
- g) As power on landing proficiency is attained, the student will be coached in and practice dead engine, dead stick landings.
- h) Crosswind takeoffs and landings should be discussed, demonstrated and practiced as the wind direction dictates.

STAGE 4: SOLO CHECK FLIGHT

- a) After the student flies enough to become proficient in all the first 3 Stages, he should be ready for his solo check flight. This check flight may be given by any qualified instructor, not necessarily the one who has consistently flown with him.
- b) The check flight should consist of a demonstration of all phases of flight taught in Stages 1, 2, and 3. The student should demonstrate knowledge of field procedures by his actions, be able to safely start his engine, taxi out from the proper location, call out his intentions for both takeoff and landing, perform a satisfactory takeoff and get the plane in the air.
- c) The student should be able to make any direction turns at a constant altitude, climb and glide to desired new altitudes, and make a proper entry to the landing pattern.
- d) The student should be able to safely land his plane in an acceptable fashion with emphasis more on positive control and safety at all times than on the perfect landing.
- e) He should taxi his plane back to the proper place, and shut down his engine, receiver and transmitter properly.
- f) Demonstration of the ability to perform a dead engine, dead stick landing is mandatory.
- g) Upon completion of his check flight, he will be awarded a SOLO CERTIFICATE at the next club meeting and will then be qualified to fly alone without an instructor being present.

BEYOND SOLOING

While the student has demonstrated sufficient proficiency to be able to safely fly a model plane, there are a multitude of additional things to learn. Among these are power on and power off stalls, constant altitude 360 degree turns around a point, aileron rolls, basic loops, spins, split S, Cuban eights, and others. These are all advanced maneuvers, which can be performed with a trainer airplane and may be developed as the student becomes more confident and familiar with his plane.

The student should request demonstrations of these maneuvers whenever he feels qualified to move on to more advanced flying.

When changing to other kinds of aircraft such as aerobatic, racing, or scale models, the student should request help from a qualified Instructor or flyer experienced with those types.

For safety purposes, it is strongly recommended that no one ever fly alone. Another adult should always be present, whether a flyer or spectator, in case of an injury or other emergency.