

# **SKYKNIGHTS R/C CLUB**

## **Training and Instruction**

**Welcome Students and New Members!!** This section describes the training procedures for the SkyKnights R/C Club. If you are an experienced R/C Pilot, please familiarize yourself with Phase Three of this Program as you will be required to pass the Solo Certification Test before flying at the Club field.

If you are a beginning R/C Pilot, you are required to read this section and contact one of the instructors who will work with you until you pass the Solo Certification Test. The instructors are not responsible for your aircraft. The individuals that volunteer their time for the purpose of teaching you to fly, are competent pilots. They will, to the very best of their ability, check out your aircraft and instruct you in its safe operation. The use of a "Buddy Box" is strongly encouraged. If for some reason there is a mishap, the repairs are up to you. You need to be very certain that every **part** of your aircraft is correct and airworthy. You are encouraged to review the Pre-Field and Pre-Flight Check Lists included in your New Member packet.

Our goal for the training and instruction program is to provide new and existing members with quality, personal instruction using a qualified staff of instructors. The staff names and their contact information is published in the Newsletter each month. The Club has four buddy boxes, three Mode II and one Mode I that are in good flying condition.

Regular training is on Tuesdays, 3:30 PM to dusk during daylight savings months (April through October). Training for any other time or day should be pre-arranged with one of the instructors.

### **Purpose of the Training Program**

- Make every pilot aware of safety issues**
- Help each pilot become familiar with their aircraft**
- Teach proper use of Transmitter Impound**
- Teach proper engine starting and adjusting**
- Teach the Basics of Flight**
- Teach control of the aircraft**
- Follow through to Solo Certification**

Instructors will incorporate Phase One and Phase Two guidelines in their teaching methods. Phase Three, the Solo Certification, is a requirement.

# Flight Training Curriculum

## Phase One:

### 1. Aircraft Flight Control Familiarization

Student's aircraft will be taken up three mistakes high and trimmed so aircraft will fly straight and level at a moderate throttle setting.

After familiarizing the student with the controls, control of the aircraft will be given to the student.

The student will do race track ovals, teaching wide left and right turns holding altitude.

The student will be taught gentle pressure of the controls, watching how the airplane reacts.

The student will be taught to keep the aircraft at a constant altitude through left and right circles, coordinating aileron and elevator input.

### 2. Aircraft Flight Control Coordination Maneuvers

Do figure 8's keeping altitude constant.

Learn use of throttle, demonstrating altitude control with both throttle and elevator.

### 3. Ground Reference Maneuvers

Keep aircraft on far side of runway. No flying over pits, parking area or no-fly zones.

Using objects on ground as reference, student will learn to fly landing pattern.

### 4. Slow Flight Characteristics

Flying just above stall speed doing left and right 90 degree turns.

Practice stall and recovery situations.

Review use of throttle.

### 5. Figure Eights

Start turn with application of aileron and elevator mixing to maintain constant altitude.

**Move to Phase Two when student has mastered sense of direction and does not mix left and right inputs with aircraft approaching or leaving.**

## Phase Two:

### 1. Take Offs

Ground handling and high speed taxi runs will be learned using rudder and throttle control.

Coordination of throttle, rudder and elevator control for successful takeoffs.

### 2. Landing Approaches

Practice approaches at 100 foot altitude, line up with center of runway.

Learn proper go-around after missed approach.

Do lower approaches as confidence and technique improve.

3. Landing

When ready – take a deep breath and Go For It!!!!

After several **successful** landings, do touch and go's.

Do a simulated "Dead Stick" landing by going to altitude and cutting throttle to idle, landing not using the throttle.

4. Loops and Rolls

Fly to three mistakes high and perform inside loops learning throttle control.

Fly to three mistakes high and perform aileron rolls **learning** pitch-up at start of roll.

Learn application of rudder to aid in **axial** rolls.

**Phase Three: Solo Certification Test Requirements**

1. Demonstrate knowledge of Club and AMA safety rules
2. Prepare and start aircraft for flight
3. Take off
4. Procedure turn
5. Straight flight back, parallel to runway
6. 180 degree turn while holding altitude
7. Figure 8 while holding altitude
8. One inside loop
9. One roll (capable aircraft only)
10. Stall and recovery **from** level flight
11. Touch and go
12. Landing
13. Taxi back and shutdown

**Congratulations! You can now count yourself among a very small and elite group of individuals who can pilot an aircraft.**

# PRE-FIELD CHECK LIST

(Done at home by the Student before going to the field)

Wings and tail are properly aligned.

Wing panels are not warped.

Hinges are properly secured and of sufficient quantity. Pull on hinged surfaces gently to check for loose hinges.

Servos are securely mounted to plywood or servo tray and servo tray is securely mounted.

All necessary screws are in place and tight (servos, engine mount, landing gear, wheel collars).

Push rods do not bind and allow no slop. Should not be able to move control surfaces more than 1/16" before servo moves.

Do not use quick servo connections on primary control surfaces, use Z-bend or clevis.

CG (center of gravity) is correct. Balance with fuel tank empty.

Fuel tank is secure and plumbed correctly. Center line of tank should be located on the same line as the carburetor spray bar.

Covering is tight and properly applied and no bare wood is showing. Bare wood will absorb fuel, weaken airframe and add weight.

Wheels turn easily and are aligned – nose gear (tail wheel) tracts straight with rudder in neutral position.

Battery and receiver are wrapped in foam and secure.

Receiver antenna is fully extended and is routed properly.

All electrical servos and battery connections are tight.

Control surfaces and throttle move in correlation with sticks on transmitter.

Aileron stick moves right – right aileron moves up.

Rudder stick moves right – rudder moves right.

Elevator stick moves down – elevator moves up.

Throttle stick moves up – carburetor opens.

Remove price stickers (and sharp edges if non-wood) from the propeller and balance.

Receiver and transmitter battery packs are fully charged.

# PRE-FLIGHT CHECK LIST

**(Done at the field by the instructor with the student following along)**

**Note to Instructor:** Check new or rebuilt aircraft very carefully. The student is depending on you to help identify problems before flight and to bring the aircraft back in one piece.

Observe Transmitter Impound rules

Check for warps

All hinges secure. Pull on control surfaces.

Wheel collars are tight and wheels turn **freely**.

Engine is mounted securely and there are no loose engine parts.

All servo screws are in place and tight.

Servo connections are secure.

Receiver and battery are wrapped in foam and secure.

CG is correct.

No slop in control surfaces.

Minimum of eight **fresh** rubber bands securing wing.

Check condition of propeller – no nicks or cracks – spinner not touching propeller.

Card is on **frequency** board before turning on transmitter.

Check trims on transmitter and aircraft.

Check for proper direction on control throws; both transmitter and buddy box.

Check throttle.

Check receiver **antenna** for proper routing and transmitter antenna is **fully** extended and tight.

Steering gear is OK and aligned straight.

Check engine for reliable idle and high end adjustment (not too lean).

Radio range check has been performed.