Lincoln Sky Knights
Flight Training Manual

April 2021 Edition

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Preface

You must learn to crawl before walking and walk before running. For this reason, Lincoln Sky Knights strongly recommends you begin your journey into the hobby of RC aviation with one of our club's flight instructors and use club owned equipment before risking your own.

This program will teach you the basics of flying radio-controlled model aircraft and is Lincoln Sky Knights best effort to assist you in the process.

There is nothing in this program that guarantees you will become a successful R/C pilot, nor are there any expectations on how long it will take to complete this program. Like everything else, your success will all depend on your willingness to spend the time, practice and exercise patience.

This program is a series of lessons designed to build on previous lessons, to develop the skill and confidence which will allow you to thoroughly enjoy your new hobby.

Upon completion of these lessons, you will be ready to take your solo flight evaluation test. This test is designed to demonstrate to the instructor's satisfaction that you are able to control the aircraft safely. After passing this test, you will be allowed to fly without an instructor present.

Hopefully, the completion of your solo flight evaluation is only the beginning of your learning and will serve as an incentive to get out and fly. Where you go from here is up to you. Good Luck!

Instructor - Student Responsibilities

Your instructor has met the qualifications of Lincoln Sky Knights. He/she has accepted the responsibility to teach you to become a responsible and safe pilot who can be proud of their flying abilities and be an enjoyable fellow club member. If the instructor ignores their responsibility, you may be a pilot who is a hazard to yourself and others wherever you fly.

You may discontinue your flight instruction at any time if you feel you are ready to fly solo. Flying solo without the approval of your instructor is not recommended. The club cannot compel you to fly with an instructor but does recommend that you finish all of your flight training.

As a student, it is your responsibility to apply yourself diligently to learn and apply the material presented in this course. By doing so, you will learn the minimum amount of information and skills to allow you to safely enjoy radio-controlled flight.

Each section of this course deals with a different aspect of flying a radio-controlled model aircraft. Your instructor will explain and demonstrate each element of each lesson. Where applicable, your instructor will demonstrate the element first. You will have opportunities to perform each element and receive an evaluation from your instructor.

Each lesson will be logged in the logbook section of this booklet, and your instructor will initial the logbook after the material has been reviewed with you. It is important you keep your training program with you and have your instructor initial a lesson in the log after it has been completed.

Remember, no instruction will take place at the field without this document.

Notes for New Students

1. Instructors will be treated with respect - they are volunteering their time to teach you.
2. Any student showing detrimental behavior such as being confrontational, hostile, aggressive, destructive, etc. - will be asked to leave the club field and lessons will be terminated.
   If this occurs, the 'student' is considered trespassing on club property and not eligible for membership.
3. Students who are not yet club members are not permitted to fly at the Lincoln Sky Knights club field without the personal assistance of a club instructor.
4. AMA Membership is a mandatory requirement to fly solo at the Lincoln Sky Knights facility.
5. Any student 19 or younger must have a parent or guardian present during sessions.
6. Light humor is encouraged, this is what we do to have fun. Just don't make it personal.

Training Equipment

The Buddy Box System

The “buddy box” system reduces risk to aircraft and provides an enjoyable learning experience. Two transmitters are used: one for the student and one for the instructor. Both transmitters are connected to each other via cable or with a wireless link.

You do not need your own radio.
Lincoln Sky Knights has “buddy box” transmitters that it will provide for lessons. The instructor controls the aircraft to a safe altitude using the primary transmitter. The instructor then depresses a switch on the transmitter, transferring control to the student, who then flies the plane.

If the student gets the airplane in an unsafe condition, the instructor releases the switch and takes over control of the airplane. The instructor will return the airplane to a safe altitude.

The instructor will control takeoff and landing until he/she determines the student is proficient enough to do so on his/her own.

Trainer Aircraft

You do not need your own airplane.
Lincoln Sky Knights will provide the airplane used for instruction. These are club owned airplanes maintained by the flight instructors. The club trainers are highly regarded in the model aircraft hobby as being one of the most stable and highly durable aircraft, providing very gentle flight characteristics to aid with the learning process.

Pre-Flight Checklist

A. Engine / Motor Area

1. Check propeller for nicks, cracks, etc
2. Check propeller adapter to ensure it is securely fastened to the motor
3. Check nose wheel steering for security (if equipped).
4. Check cowl for security (if equipped).
5. Check motor/engine to ensure it is properly bolted to the aircraft.

B. Control Surfaces - Tail Area

1. Check vertical fin, hinges, rudder and rudder clevis for operation, security and proper adjustment.
2. Check tail wheel for security and proper adjustment (if equipped).
3. Check horizontal stabilizer, hinges, elevator, and elevator clevis for security and proper adjustment.
4. Check Elevator, Rudder (if equipped) servos for proper operation and security.

C. Control Surfaces - Wings

1. Check wing for breaks, warps, cracks, hinges, and ailerons for security.
2. Check aileron servo, pushrods, linkages, and clevis for operation, security, and proper adjustment.
3. Check landing gear for security of attachment (if equipped).
4. Check wing attachment points for possible damage.
5. Check wing to fuselage mating.
6. With wing attached, check center of balance of model.

D. Radio

1. Check for proper operation and control directions.
2. Perform a range check with the aircraft securely restrained to ensure the transmitter and receiver are functioning properly.

E. Engine / Motor control

1. Ensure the model is properly restrained, is placed on the runway, and the propeller is pointed away from the pitts as well as all bystanders. Test the engine/motor to full throttle to ensure proper throttle function.

Lesson 1: Rules, Procedures, Guidelines

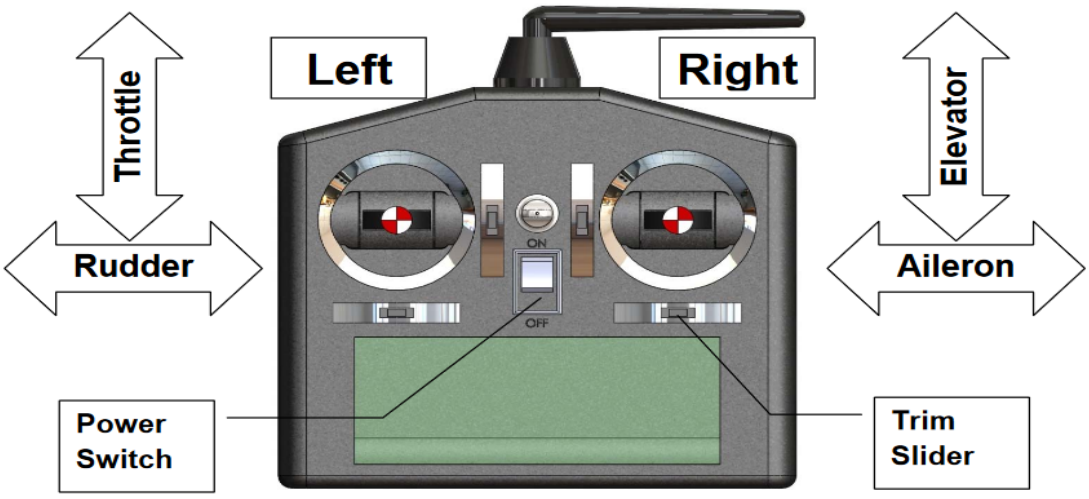
20 to 30 minutes

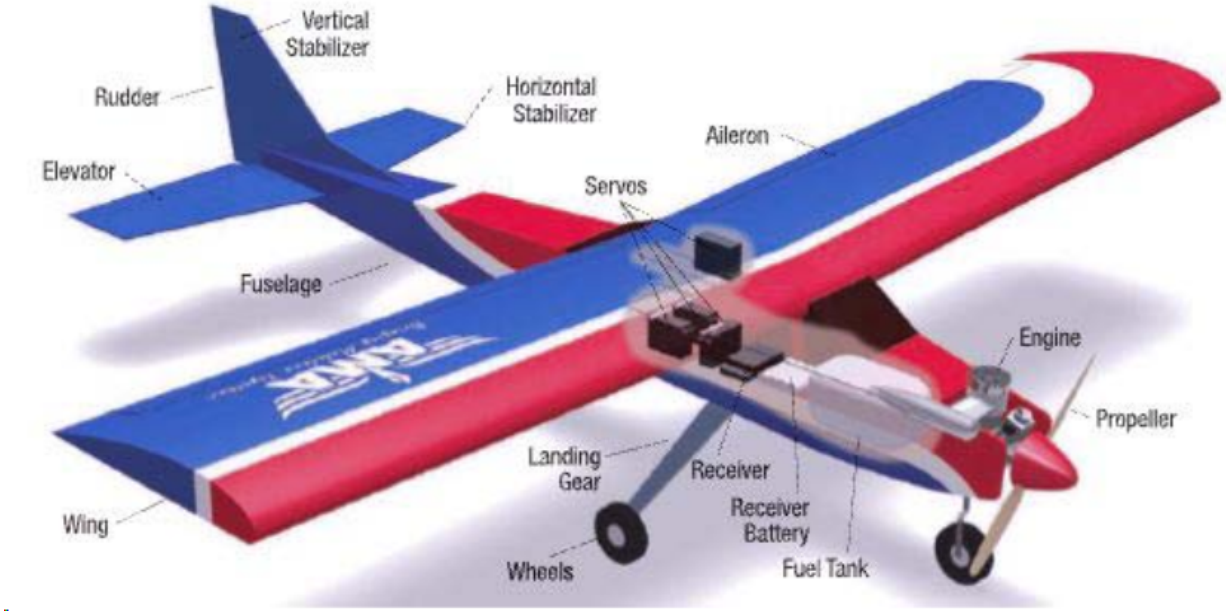
-Field / Club familiarity
- AMA rules - Supersede all other rules
- City rules (parks & recreation rules)
- Field rules
- Flight zones
- Field etiquette
- Fire extinguisher use and locations

Lesson 2: Aircraft and Radio Familiarization

10 to 20 minutes

-What all of the “thingies and doohickeys” on the aircraft are called
-Battery handling, connecting and LiPO fire risks.
-How the transmitter controls the aircraft (stick inputs)
-Directions control surfaces should move
-Avoiding the propeller when the model is powered up at all times





Lesson 3: Emergency Procedures

30 minutes

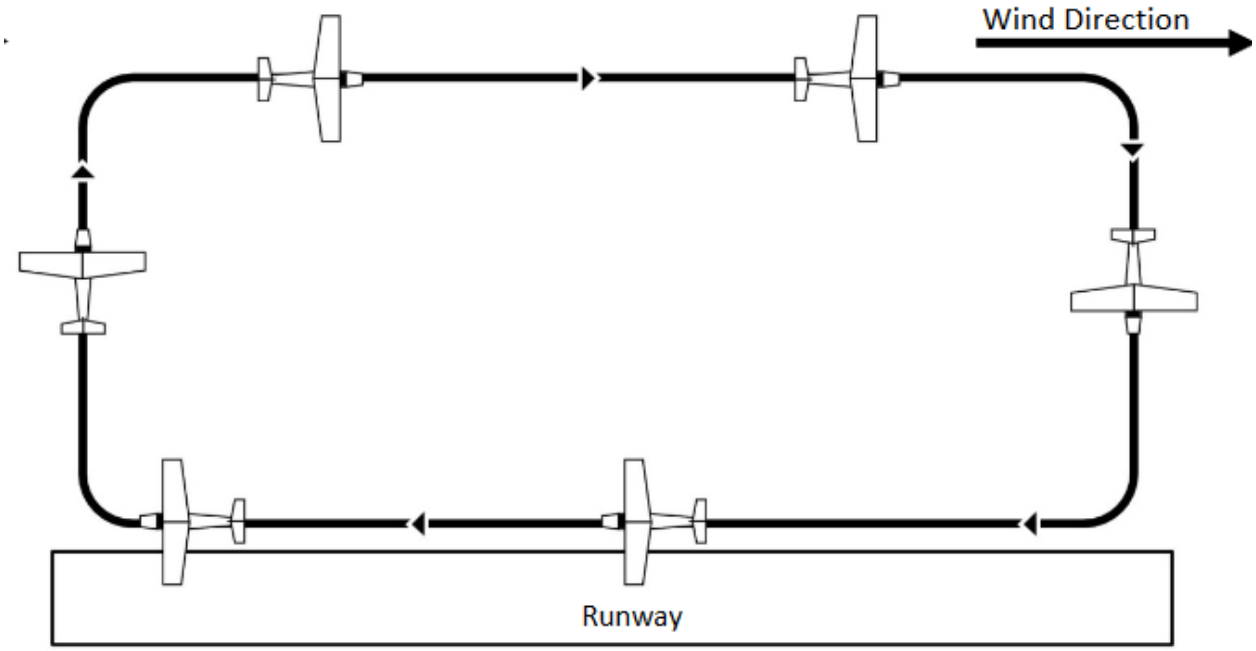
-What to do when the motor stops - dead stick landing.
-What to do when the aircraft crashes and the LiPo battery catches on fire.
-Proper use of a fire extinguisher to control the flames (sweep at the base of the flame).
-LiPo batteries generate their own oxygen and fuel source- control the spread of flames around the battery. Do not attempt to put the battery itself out.

-Loss of life is not worth the risk, if the aircraft becomes uncontrollable due to a failure or from damage sustained in flight, put it down in the field. Do not attempt to land it.

Lesson 4: Basic Flight

1 day

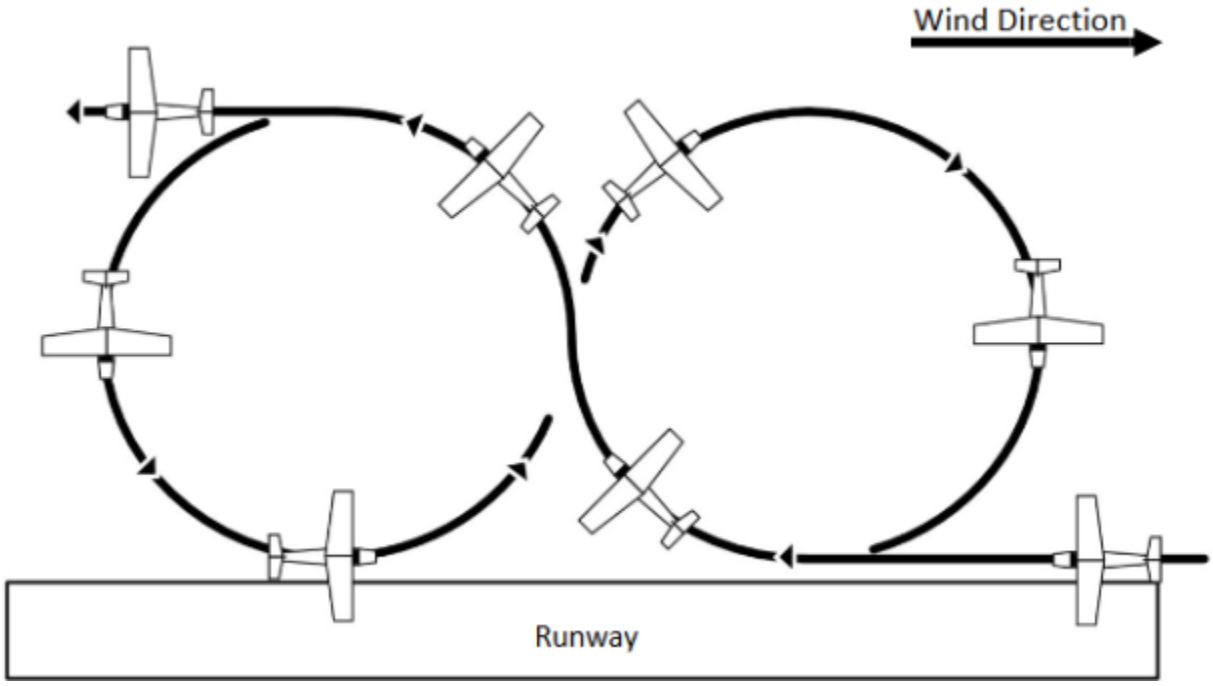
-How the control surface affects the flight of the aircraft (pitch, roll, yaw, speed).
-How controls are reversed when the aircraft is pointed directly at you.
-What a “Tip Stall” is and how to avoid it.
-What the “Torque Effect” is and how to compensate for it.
-Practicing basic flight pattern will help you with takeoff and landing sequences.
-Instructor will instruct the student on how to fly a basic flight path.
-Instructor will first demonstrate, and then allow the student to execute the maneuver.



Lesson 5: Pattern Flight

1 day

-Practicing left and right hand turns will familiarize yourself with all of the controls of the aircraft.
-Instructor will demonstrate a basic figure-8 flight path and which control inputs are used.
-Student then will demonstrate a basic figure 8 flight path.



Lesson 6: Landing

1 day

-Landings are not optional: What goes up, must come down (preferably, in one piece…)
-What the differences between takeoff, crosswind leg, downwind leg, base leg, and final leg are.
-How to control the aircraft into a basic glide path to prevent tip stalls.
-Proper ground handling once the aircraft has landed (don't turn immediately on touchdown)
-What the "Walk of Shame" is and why everyone experiences it (yes, even the pros).
-Instructor will demonstrate a basic landing procedure.
-Student will demonstrate a basic landing procedure- every hop is a bonus landing.

Lesson 7: Take-Off

1 day

-How to smoothly apply the throttle as well as right rudder to counter torque factor.
-When to gently apply up-elevator and avoid tip stall on takeoff.
-Why we takeoff into the wind, as opposed to going with the wind.
-Instructor will demonstrate a basic takeoff procedure.
-Student will demonstrate a basic takeoff procedure.

Lesson 8: Solo Flight

1 day

The Lincoln Sky Knights club strongly advises only performing a solo flight when the instructor feels the student has gathered sufficient skill to control the aircraft in all manners and through all phases of the flight. When the student is ready, he/she will perform a solo flight in the manner the instructor recommends in order to demonstrate full control over the aircraft. The following will be required for the student to demonstrate in order to pass their solo flight test:

-Takeoff
-Figure 8 maneuvers
-Landing setup
-Landing

A crash will not constitute a pass on the student's solo flight, further instruction will be necessary. If a club aircraft was used during the solo flight and is crashed by the student, the student will be required to assist in the repairs of the aircraft however possible. The club's aircraft are simple to repair, often times only requiring the use of glue to reassemble. Reassessment will take place only when the instructor feels the student is ready.

Flight Log

Student Name _____

Instructor	Lesson	Date & Time	Duration	Completed