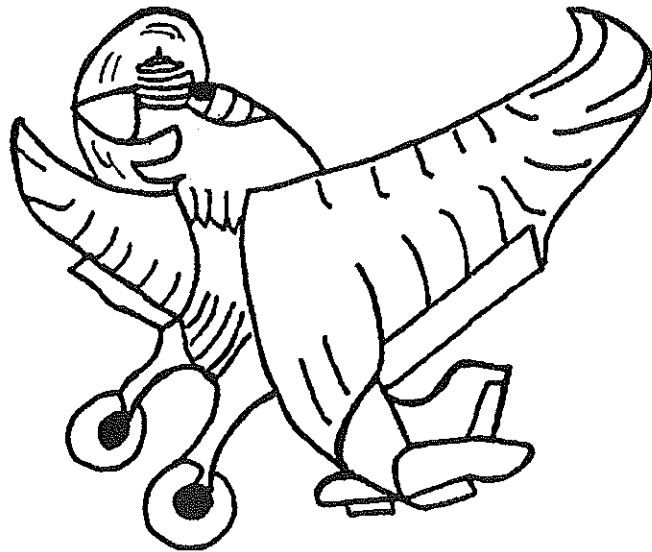


FLIGHT TRAINING PROGRAM



INSTRUCTOR PACKET

Instructor: _____

CEN-TEX MODELERS FLIGHT TRAINING COURSE

INFORMATION FOR INSTRUCTORS

The purpose of this set of instructions is to provide an organized and progressive series of lessons that will not only assist the instructor in teaching the beginner to fly, but to fly safely with a basic understanding of his equipment and its limitations. The function of the instructor is to teach this material to the student, monitor and develop his understanding and performance of it, sign off his progress in his flight log, and to conduct his solo flight evaluation.

LESSON 1 - RADIO AND FIELD PROCEDURES

PURPOSE: To teach the student how to use his radio at the field.

OBJECTIVES: To make the student aware of the necessity for frequency control, self-disciplined use of the radio, and safe operation of his model at the field.

ELEMENTS:

1. The need for frequency control.
2. Frequency flags.
3. Frequency board and frequency pins.
4. Conducting a radio range check.
5. Abnormal operation of the radio and interference.
6. Batteries: charging, checking, and life.
7. Servo operation and load limits.
8. Pit area.
9. Engine operation in the pits.
10. Taxiing on the field.
11. Use of and operation of the runway.
12. Flight area and boundaries.
13. Other traffic and right of way on the field.
14. Restricted airspace (pits and parking lot).
15. Critique of students performance, as required.

COMPLETION STANDARDS:

This lesson is complete when the student meets the requirements of the lesson objectives and understands the practice of the lesson elements. This lesson should be reviewed at the start of all following lessons.

LESSON 2 - AIRCRAFT FAMILIARIZATION

PURPOSE: Using the checklist, teach the student to properly preflight his model and adjust the engine for proper running, both at high speed and at idle.

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

ELEMENTS:

1. Use of preflight checklist.
2. Understanding of control throws required for a student.
3. Instructor demonstrates safe engine starting procedures and engine adjustment.
4. Student starts and adjusts the engine.
5. Instructor teaches student how to identify rich and lean engine settings.
6. Critique of student's performance.

COMPLETION STANDARDS:

This lesson is complete when the student can perform the lesson objectives. This lesson should be reviewed at the start of all following lessons.

LESSON 3 - FLIGHT FAMILIARIZATION

PURPOSE: To flight test student's model. To introduce the student to controlling the model in flight.

OBJECTIVES: To allow the instructor to evaluate the airworthiness of the student's model and to allow the student to become familiar with the model's controls and their use in flight.

ELEMENTS:

1. The instructor flies and lands the student's model to evaluate it's performance and airworthiness. NOTE: THIS FLIGHT SHOULD BE IN A SAFE AND CONSERVATIVE MANNER.
2. On the ground, familiarize the student with the controls and what kind of reactions he can expect from them. Example: explain the necessity of holding a little up elevator in turns to keep the model from diving. Keep the explanation simple.
3. Explain the procedures you will use to give the transmitter to the student and take it away from him during the flight.
4. Explain what you would like him to do. Example: "Just get familiar with the controls and don't worry about losing control. That's why I'm here."
5. With the model trimmed in level flight and at a reasonable airspeed, allow the student to fly it. Whenever possible, verbally correct his inputs rather than doing it yourself. DON'T LET THE STUDENT GET NERVOUS. If he does, take the transmitter from him and allow him to relax.
6. Critique of student's performance.

COMPLETION STANDARDS:

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. Example: The model dives and the student gives up elevator. PROFICIENCY AND ACCURATE CONTROL ARE NOT A CRITERIA AT THIS POINT.

LESSON 4 - FLIGHT MANUEVERS

PURPOSE: To acquaint the student with the basic flight manuevers.

OBJECTIVES: To teach the student to properly control the model during basic manuevering.

ELEMENTS:

1. Explain the effect of wind on the model during flight.
2. Disorientation, level flight and trim at different power settings.
3. Turns.
4. Straight climbs.
5. Climbing turns.
6. Gliding.
7. NOTE: These five manuevers should be taught in order if possible.
8. Critique of student's performance.

COMPLETION STANDARDS:

This lesson is complete when the student can perform the manuevers without assistance from the instructor. Each manuever should be done with a reasonable degree of accuracy. Example: turns should be fairly smooth and altitude maintained fairly well.

LESSON 5 - ACCURACY MANUEVERS

PURPOSE: To teach the student to perform the five basic manuevers to a standard that will develop proficiency in their execution.

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 and altitude.
3. Left and right turns to a specific heading.
4. Climbing turns to a specific heading.
5. Power off (idle) glides that require the student to manuever the model to a specific area and approximate altitude. Example: Have the student close the throttle over the south end of the field at two hundred feet and glide to the north end of the field arriving at one hundred feet.
6. Instructors may introduce loops and rolls during this lesson to add variety to the training.
7. Critique of student's performance.

COMPLETION STANDARDS:

This lesson is complete when the student can manuever the model at the instructor's direction and can demonstrate the ability to control the model in an accurate manner.

LESSON 6 - ORIENTATION MANUEVERS

PURPOSE: To develop the 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 manuever in front of himself at a safe distance and altitude.
2. The student must fly a rectangular pattern at a safe altitude with the up-wind leg crossing (parallel with) the landing area. NOTE: The instructor will designate the size and altitude of the maneuver.
3. Instructor may introduce the rectangular horizontal 8, the Immelmann turn, and the Split-S turn to provide additional challenge and variety.
4. Critique of student's performance.

COMPLETION STANDARDS:

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

LESSON 7 - STALLS

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

OBJECTIVE: To teach the student to recognize and recover from stalls.

ELEMENTS:

1. Pre-flight discussion of stalls, what causes them, and how to recover. (Stalls are a function of angle of attack.)
2. Practice of stalls by the student with and without power.
3. Stalls in turns (take-off, departure stalls). NOTE: Takeoff and departure stalls are almost impossible to set up with most trainers, but do occur in more advanced models. therefore it is recommended that the power be reduced to about 1/3 throttle and a steep climbing turn be entered. The stall will look similar to a spin entry with the model rolling toward the high wing. During this lesson it should be emphasized that the stall can occur at any airspeed and is a function of angle of attack.
4. Instructor should introduce trimming an out-of-trim aircraft. With the aircraft at a reasonable altitude, the instructor should detrim the ship and have the student retrim it.
5. The stall turn and spin/spiral may be introduced for variety.
6. Critique of student's performance.

COMPLETION STANDARDS:

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

LESSON 8 - TAKE-OFF

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

OBJECTIVES: To teach the student how to control the model during take-off, both into the wind and in a crosswind.

ELEMENTS:

1. Discussion of the effects of torque and wind during take-off and initial climb. discuss aborted take-offs.
2. Use of rudder. Have student practice taxiing in both directions.
3. Use of throttle.
4. Student makes a normal take-off into the wind.
5. Use of trim controls to achieve level flight AFTER the plane has made a normal take-off. NOTE: After student has demonstrated proficiency in normal take-offs, instructor should intentionally detrim model at the transmitter to allow the student to practice take-offs with a slightly out of trim model. Retrimming at altitude must also be taught.
6. Student makes a crosswind take-off.
7. Critique of student's performance.

COMPLETION STANDARDS:

This lesson is complete when the student has successfully taken off and established a normal climb with adequate airspeed, both in the trimmed and untrimmed mode. He must also demonstrate adequate directional control during the crosswind take-off.

LESSON 9 - LANDING

PURPOSE: To prepare the student for and conduct his first landing.

OBJECTIVE: To teach the student to visualize and perform a stable and controlled approach to landing.

ELEMENTS:

1. Review of lesson 6.
2. Discussion of proper landing techniques.
3. Student flies a rectangular pattern as in lesson 6, but reduces power and establishes a normal 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 twenty (20) feet.
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.
6. The student should make at least two deadstick landings at this time. The engine may be set at idle to simulate a dead engine.
7. Critique of student's performance.

COMPLETION STANDARDS:

This 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.

LESSON 10 - SOLO FLIGHT EVALUATION

PURPOSE: To certify the student for solo flight.

OBJECTIVES: The student is to perform a series of solo flights under the supervision of the instructor and complete the required maneuvers on the solo flight evaluation to earn his solo wings.

ELEMENTS:

1. Preflight discussion to answer questions and resolve problems that concern the student about the lesson.
2. Student performs 3 flights under the instructor's supervision starting with a thorough pre-flight and ending with return of the frequency control pin.
3. The solo flight certification is signed off by both the instructor and the student.

COMPLETION STANDARDS:

This lesson is complete and the student signed off for solo flight **ONLY** after he has demonstrated a practical knowledge of all course objectives, has completed the required 3 flight demonstration of competence, and has observed all safety and field operating rules.

PRE-FLIGHT CHECKLIST

A. ENGINE AREA

1. Check engine mount, engine, muffler, carb, prop nut and/or spinner for security and throttle connections for proper adjustment.
2. Check prop for nicks, cracks, etc.
3. Check nose wheel steering for security (if equipped).
4. Check cowl for security (if equipped).

B. TANK AREA

1. Fuel tank and fuel tubing for leaks and/or damage.
2. Fuel tank for security.
3. Battery for security and protection (if located in tank compartment).
4. Battery connections for security and damage.

C. RADIO COMPARTMENT

1. Check to insure fuel has not leaked into radio compartment.
2. Check servo mount, servos, and servo arms for security and proper operation.
3. Check push rods and kwik links for security and adjustment.
4. Check wiring for fouling in servo arms or pushrods.
5. Check receiver, switch, and connectors for security and protection.
6. Check receiver antenna for exit clear of obstructions.

D. 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.

E. WING

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. If rubber bands are used, make sure there are enough.
5. With wing attached, check center of balance of model.
6. Check wing to fuselage mating.

F. RADIO

1. GOT THE PIN?
2. Check for proper operation and control directions.
3. Insure no interference.
4. Range check (25-75 feet) or per manufacturer's instructions.

SOLO FLIGHT EVALUATION AND CERTIFICATION

Student Pilot's Name: _____ AMA Number _____

1. This checklist will serve as a permanent record of your post-training evaluation and the instructor's certification of your earning your solo wings. This checklist, when signed off, will be turned over to the club secretary. Your "solo cap" will be presented at the next meeting.

2. Solo certification consists of three separate flights, each with a specific piloting skill to be demonstrated. You will be judged **not** on how well you perform each requirement, but on your simple ability to safely demonstrate your aptitude in each of these areas.

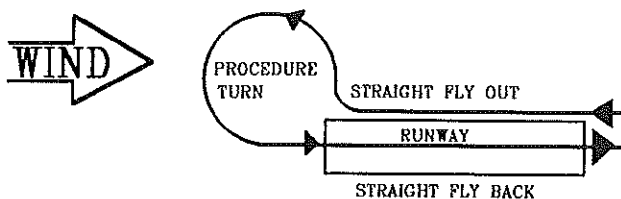
REQUIREMENT

INSTRUCTORS INITIALS

A. First Flight

1. Take-Off _____

2. Straight Flight Out, Procedure turn, and Straight Flight Back _____

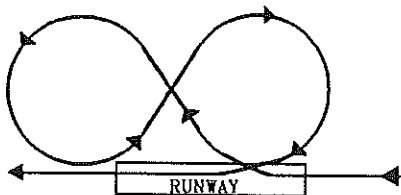


3. Landing _____

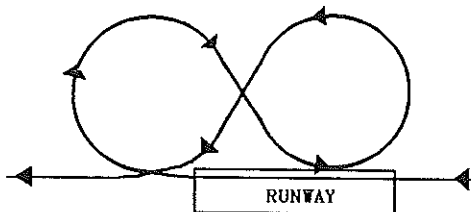
B. Second Flight

1. Take-Off _____

2. Figure Eight (left turn on left, right turn on right) _____



3. Reverse Figure Eight _____



4. Landing _____

REQUIREMENT

INSTRUCTORS INITIALS

C. Third Flight

1. Untrimmed Take-Off _____

(Instructor will "detrim" the aircraft using the transmitter trim controls only and will return the transmitter to the student. Student will takeoff and climb to altitude without retrimming the plane.)

2. Trim The Aircraft (at altitude) _____

3. "Deadstick" Landing _____

(With the plane at altitude, the instructor will direct the student to reduce the throttle to flight idle. The student lands the aircraft without advancing the throttle. If a crash or unsafe condition develops, the student may advance the throttle, but the requirement of this check will be considered not to have been met.)

3. CERTIFICATION

I certify that _____ has successfully demonstrated the minimum skills required for safe radio controlled flight and is hereby designated a solo pilot of the Cen-Tex Modelers.

Instructor's Signature and Date

4. ACKNOWLEDGEMENT

I agree to abide by the AMA Safety Code and the rules of Cen-Tex Modelers and promise to fly my aircraft in a safe manner at all times.

Pilot's Signature and Date

INSTRUCTOR PILOT CERTIFICATION

1. CANDIDATE DATA:

NAME: _____ AMA NUMBER: _____ CONTROL MODE: _____

2. INSTRUCTOR CHECKFLIGHT. Applicant must perform the following series of maneuvers before the Senior Instructor. Maneuvers will be judged on controlled performance only, not on accuracy of execution.

<u>MANUEVER</u>	<u>INITIALS OF SENIOR INSTRUCTOR</u>
1. Crosswind Take-Off	_____
2. Horizontal Roll	_____
3. Inside Loop	_____
4. Straight Inverted Flight	_____
5. Stall Turn	_____
6. Spin and Recovery	_____
7. Crosswind Landing	_____
8. Snap Roll	_____

3. CERTIFICATION

I have observed _____ perform the required demonstration of competence and certify him as an Instructor Pilot in Mode _____ for Cen-Tex Modelers Inc.

Senior Instructor's Signature and Date

4. ACKNOWLEDGEMENT

I agree to abide by the AMA safety code and the rules of Cen-Tex Modelers. I further agree to follow the flight training course of the club and to certify for solo status only those student pilots who have successfully completed the solo checkflight.

New Instructor's Signature and Date

Student Pilot Progress Log

Student Name: _____

Primary Instructor: _____

<u>Lesson</u>	<u>Instructor's Initials and Date</u>	<u>Comments</u>
1. Radio/Field Procedures	_____	_____
2. ACFT Familiarization	_____	_____
3. Flight Familiarization	_____	_____
4. Flight Manuevers	_____	_____
5. Accuracy Manuevers	_____	_____
6. Orientation Maneuvers	_____	_____
7. Stalls	_____	_____
8. Take-Off	_____	_____
9. Landing	_____	_____
10. Solo Flight Evaluation	_____	_____