

CCRCC

POWERED FIXED WING AND HELICOPTER

FLIGHT TEST PROGRAM HANDBOOK

**THIS DOCUMENT HAS BEEN PRODUCED TO PROVIDE THE MEMBERS
AND APPLICANTS A CONVENIENT METHOD TO PRODUCE
MODEL AIRCRAFT PILOTS FOR THE CCRCC ORGANIZATION, AND
SUPERCEDES ALL OTHER FLIGHT-TESTING PROCEDURES.
ON THE WEB AT: WWW.CCRCCCLUB.ORG**

2005

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INTRODUCTION TO CCRCC

CCRCC is a chartered club of the Academy of Model Aeronautics (AMA) and was founded in 1948. It includes a diverse group of men and women dedicated to the construction and safe operation of radio control aircraft with comradery and friendship. Everyone is welcome to join the organization. Members are encouraged to help everyone participating in the hobby. Our club goal is assisting newcomers (applicants) and improving the modeling and flying skills of all members.

A Board of Directors governs CCRCC. The Board consists of four elected officers: President, Vice-President, Secretary, and Treasurer. Additionally, appointed by the President are: field manager, safety director, activities and community relations director, webmaster, training coordinator and a past president. New officers are nominated at the November meeting and elected at the December meeting to serve the following year. The board of directors serves at the pleasure of the general membership.

Operations of the club are financed by annual dues, income from entrance fees to sanctioned events, and donations. Periodically, the Board may determine that an assessment of the membership in addition to the annual dues is required to finance a special project or circumstance.

CCRCC flies at the club field on Meadow Road in Farmington CT. It leases 17.5 acres in an open space area from the Town of Farmington. As such, the club has full control over the flying site.

The club and the field are operated under the guidelines provided by the AMA and the CCRCC. AMA is the governing body of model aviation in the USA, and charters both the club and flying site. AMA provides liability insurance for the members, the club, and co-insures the Town of Farmington.

General meetings are held on the third Wednesday of every month, (except no meeting in the month of August) at 7:45 PM as posted at the field TX impound shelf. The board of directors usually meets at the home of an officer on the Monday prior to the general monthly meeting. All members and applicants are welcome at the board meeting to offer their comments and suggestions.

To join CCRCC, you must be an active member in good standing of AMA, pay CCRCC applicant membership dues, work with the CCRCC Training Coordinator who will assist during your "applicant" status to align you with a mentor while you are learning and satisfactorily complete a Qualification Flight Test. While you are learning, your status will be an "Applicant" and you may fly when any CCRCC member is present assisting you in the flight activities. When you pass your Qualification Flight Test, you will be voted upon at the next monthly meeting by the membership and if affirmative, then changed to a full membership "Active" status.

MEMBER'S RESPONSIBILITIES

Being a member of the CCRCC is a privilege, with this privilege comes certain responsibilities. Among these responsibilities is the need for every member and applicant to actively participate in running CCRCC.

All members must comply with our ***Code of Conduct*** and ***Field Rules***. These are intended to maximize everyone's enjoyment of the hobby/sport of model aviation and our club. Violations of the ***Code of Conduct*** or ***Field Rules*** will be addressed and resolved by the Board of Directors. Repeated infraction will result in revocation of membership in CCRCC and forfeiture of your dues.

Finally, it is the responsibility of all members and applicants to treat each other with dignity and respect.

CODE OF CONDUCT

Our mission is to successfully promote our club and the interests of model aviation. We will achieve this mission when all of our members work toward this common goal. As such, all members must comply with our ***Code of Conduct***. Members, active and applicants will:

1. At all times, demonstrate safe, good, and sound judgement.
2. Follow all club and field rules, no exceptions.
3. Support the interests of our club by helping with its administrative needs and lending assistance with club-sponsored events.
4. Regularly attend club meetings.
5. Demonstrate good behavior which politely and professionally promotes the hobby/sport of model aviation. Members will avoid using foul language and verbally or physically abusing each other.
6. Members will be particularly sensitive to good common sense behavior in the presence of youth.

FIELD RULES

We strive for the safest possible operation of our model aircraft. All member pilots must fully comply with the official AMA safety code and wear their member badge while flying, as well as observe the following:

1. All pilots must be drug-free and alcohol-free while operating model aircraft.
2. All pilots must fly from designated flight stations. A maximum of five aircraft are allowed in the air at the same time (which includes hovering a helicopter on the heli pad)
3. Pilot provided frequency identification pins and flags shall be used for channel identification on the CCRCC frequency and standby poles.
4. Observe a fifteen (15) minute channel use time limitation.
5. No flying between safety fence and parking area; over the town road, pits, parking or spectator area. The initial turn after takeoff shall be away from these areas.
6. There is no flying of fixed wing aircraft with internal combustion engines before 10:00 a.m., except for helicopter hovering (25 ft maximum altitude) or club sanctioned events controlled by the club Contest Director. There is no flying after sunset. Electric flight may start at sunrise.

7. Engine running is not permitted in the pit area. Note: Engine running is allowed in the helicopter hover area. Refer to the site plan located in the TX impound area.
8. All two-stroke aircraft engines .10 cubic inches and larger shall be muffled.
9. CCRCC members must be present with guests and are responsible for their guest conduct. Guest flyers must have a current AMA license and are limited to three flying days per calendar year.
10. No drugs or alcoholic beverages are allowed on the premises by the order of the Town of Farmington, no exceptions.
11. Aircraft shall be operated only on frequencies authorized by AMA and the FCC for aircraft use.
12. A current AMA license is required to enter the pit area.
13. Pilots with a “dead stick” situation have the right of way and must “call out” their situation.
14. Always clearly and loudly announce your intention to takeoff, land, or walk onto the runway.
15. All transmitters not in use must be placed in the transmitter (TX) impounded and turned off.
16. Safety is everyone’s responsibility - USE COMMON SENSE.

About the AMA

The Academy of Model Aeronautics (AMA) is a world-class association of modelers organized for the purpose of promotion, development, education, and advancement of modeling activities. The AMA provides leadership, organization, competition, communication, protection, representation, recognition, education, and scientific/technical development to modelers.

To join the AMA, you may either call them at: **1-800-435-9262 (fax: 1-765-741-0057)** or write to them at:

**Academy of Model Aeronautics
5151 East Memorial Drive
Muncie, IN 47302**

Applications to AMA may be obtained from the secretary, most model shops, and modeling magazines or on the web at “www.modelaircraft.org”. Your AMA membership provides limited liability insurance and the monthly magazine *Model Aviation*.

CENTRAL CONNECTICUT RADIO CONTROL CLUB
AMA Charter Club #180
BY-LAWS

Amended March 1999

ARTICLE I - Name

1. The name of the Club shall be the CENTRAL CONNECTICUT RADIO CONTROL CLUB.

ARTICLE II - Purpose

1. The purpose of this Club shall be to promote radio control model aircraft building and flying and to aid the national program of the Academy of Model Aeronautics (AMA).

ARTICLE III - Membership

1. There shall be five classes of membership as follows:

a. ACTIVE members are individuals who have been accepted for membership in the Club, who have a current AMA membership, and are not delinquent in the payment of dues or assessments.

members under sixteen years of age may not fly alone without authorization from the Board of Directors. Student members may not sponsor applicants.

c. LIFE members are those who have been granted such distinction by a two-thirds affirmative vote of board members voting at a board meeting. Life members are exempt from dues and assessments and have all the rights granted to active members in good standing provided AMA membership is maintained.

d. HONORARY members are those who have had such membership bestowed in recognition of extraordinary contributions to the Club. However, they have no Club membership rights or privileges. Honorary membership may be conferred by a unanimous vote of the Board of Directors.

e. APPLICANT members are individuals who have **applied for** membership in the Club. Applicant members have the right to vote on all club issues, provided AMA membership is maintained and they are not delinquent in the payment of dues or assessments. Applicant members are not eligible to hold an elected club position, however they are eligible to hold an appointed position. An APPLICANT member must never fly without the presence and assistance of an ACTIVE member.

2. The Board of Directors shall determine the requirements for acceptance of new members and the reinstatement of former members. The Board of Directors may limit the number of active members as deemed necessary.

3. A delinquent member who fails to respond to payment of dues and assessments will be dropped from the membership roll after 30 days. Reinstatement of a previously delinquent member shall require a two-thirds affirmative vote of members voting at a membership meeting.

ARTICLE IV - Application for Membership

1. Those seeking membership in the Club must comply as follows:

a. Have a current AMA membership.

b. Have as a sponsor an active member who shall be responsible for the applicant's training and conduct.

c. Have submitted a membership application and dues to a Club officer d. Have attended two consecutive Club meetings.

c. Have demonstrated flight proficiency by passing the club flight test as given by an approved flight examiner.

2. When all applicant requirements are met, the sponsor shall present the applicant to the membership at a membership meeting. Acceptance for membership shall require a two-thirds affirmative vote of the members voting at the membership meeting.

ARTICLE V - Officers and Board of Directors

1. The elected officers of the Club shall consist of the President, Vice President, Secretary, and Treasurer. Their duties shall be those usually associated with such offices and they shall serve for a period of one year. The officers shall be elected by the Club membership at the December meeting. Vacancies, as they occur, shall be filled by a majority vote of the Board of Directors for the balance of the current term.

2. In addition to the elected officers, the Board of Directors shall consist of a past President, the Community Relations Director, the Safety Director, the Field Manager, and the Meeting Activity Director. The President will have the authority for the selection of appointees to these non-elected board positions. The Past President shall be any previously elected Club President with current membership status.

3. The Board of Directors shall be responsible for the management of the affairs of the Club. They shall set dues and assessments, prescribe rules and regulations, and perform such duties as are prescribed elsewhere in these by-laws or that are customarily carried out by a Board of Directors.

4. The Board of Directors is the sole authority for disposition of all matters not specifically stated in or covered under the by-laws and the rules of the Club.

5. Any elected Officer may be removed from office at any time for negligence or misconduct by a two-thirds vote of the membership at a membership meeting (see Article VI.3). Any appointed Board member may be removed from office at any time for negligence or misconduct by a two-thirds vote of the Board of Directors at a Board meeting (see Article VI. 3).

ARTICLE VI - Meetings

1. Membership meetings shall be held monthly at a time and place designated by the Board of Directors.
2. Board of Directors meetings shall be held at a time and place designated by the Board. All regular Board meetings shall be open to the membership and any other persons having business with the Board and invited guests. Only Board members shall have the right to vote at such meetings.
3. At membership meetings, a quorum shall consist of 20 Club members. At Board of Director's meetings the quorum shall be five.
3. At membership meetings, a quorum shall consist of 20 Club members. At Board of Director's meetings the quorum shall be five.
 - a. Call to order
 - b. Roll call
 - c. Visitors
 - d. Reading of minutes
 - e. Treasurer's report
 - f. Appropriations
 - g. New members
 - h. Committee reports
 - i. Old business
 - j. New business
 - k. Contest reports
 1. Adjournment

The order of business may be suspended or changed at the discretion of the President or presiding

ARTICLE VII - Committees

1. The President shall appoint both standing and temporary committees as the need is indicated. Standing committees will include those listed in the roles and responsibilities of the appointed Board members. Alternate nominees will be included on the ballot provided they have the endorsement of at least three active members and the Secretary has received a list of those nominees by the November meeting
2. The President shall appoint a nominating committee of three active members to propose a **group** of officers for election at the December meeting. This **group** shall be announced at the October meeting.

ARTICLE VIII - Dues and Assessments

1. The amount of the annual dues shall be determined by the Board of Directors based on the needs for the coming year. In the event that the dues are to be changed, notice of such change must be made at the November membership meeting.
2. The budget for the coming year will be presented to the membership for approval at the November membership meeting.
3. Members and applicants shall have until the February membership meeting to pay dues and assessments for the current year. After that date, members and applicants will be considered delinquent and dropped from the roll. Dues paid after November 1. shall be considered to have been paid for the following year. Members of the Board of Directors are exempt from dues.

ARTICLE VIII - Dues and Assessments (continued)

4. The Board of Directors shall propose assessments, if necessary, subject to approval by the membership.

ARTICLE IX - Obligations and Privileges of Members

1. All members are expected to display the utmost in good fellowship and sportsmanship at all times and under all circumstances.
2. All members are expected to support all Club programs to the best of their ability at all times and to indicate by their actions the willingness to comply with all Club rules, regulations, and decisions.
3. Membership may be suspended or revoked for any conduct contrary to the accepted standards of the Club. Incidents of misconduct or violation of the by-laws, field rules, town ordinances and regulations under which the Club is bound, must be submitted to the Board of Directors for disposition. The appropriate Board member will investigate the complaint and present findings and recommendations to the Board of Directors. The offender will be informed of the Board's findings and given ten days to appeal the recommended action to the Board.

ARTICLE X - By-laws Review

1. It shall be the duty of the Board of Directors to review the by-laws during the first quarter of each year and present to the membership any revisions they may deem advisable to keep the by-laws current.

ARTICLE XI - Amendments

1. These by-laws may be amended at any regular membership meeting by a two-thirds vote of the members voting, provided the proposed amendments are presented to the membership and the Board of directors in writing at the previous meeting.

INFORMATION FOR APPLICANTS

There are many aspects of radio control aircraft: fixed wing aircraft which are powered by piston engines (two stroke, and four stroke) and also electric power. Sailplanes primarily are winch powered, but also may be electric powered, and powered by small piston motors on power pods. A wide range of helicopters are available to the modeling members. These models vary in sizes from 2 to 3 Lbs up to as much as 55 Lbs.

Radio control aircraft can perform and exceed maneuvers that a full scale aircraft can perform. RC models should be considered as a real aircraft, with the pilot controlling remotely from the cockpit. This requires the pilot to learn to fly the aircraft in two directions, aircraft flying away from the pilot, and aircraft flying to the pilot. The performance of the model is based upon the building and flying skills of the modeler.

HOW TO GET STARTED

To join CCRCC you must first be a member of the Academy of Model Aeronautics (AMA). Applications to AMA may be obtained from the CCRCC secretary, most model shops, modeling magazines or on the web at www.modelaircraft.org. Your AMA membership provides limited liability insurance and the monthly magazine *Model Aviation*. AMA is the governing body of Model Aviation in the USA.

MODELING SUGGESTIONS

All power modelers will need a model (trainer), engine, radio (servos), glue, knives, sand paper, covering material (except for ARFS), field box (well equipped), fuel, glow plug igniter, starter, and battery. Some model kits will require additional materials to complete the kit.

THE COMPLETED MODEL

Before flying the new model, it must be thoroughly inspected to insure safe and proper operation. Any "Active" member may perform that inspection. Then the Applicant should work with the training coordinator using CCRCC established flight training program requirements leading to the final solo flight examination. Field rules and flight safety shall be stressed in these initial briefings.

MODEL INSPECTION AND GENERAL SAFETY

One of CCRCC's primary directives is to establish and maintain field and flight safety. Each member and applicant should become acquainted with the *AMA Safety Code*.

Furthermore, all new models should be subjected to a safety inspection *before* the first flight. This inspection should be done by someone other than the builder. The model may not be flown until it successfully passes a safety inspection. We recommend the following safety inspection:

1. Tug on each flying surface (elevator, rudder, ailerons) to make sure that they are secure and properly pinned in place.
2. All flying surfaces should move freely.
3. Jiggle the fin and stabilizer to make sure they are firmly attached.
4. Check the wing for warps.
5. Make sure that the engine is securely fastened to the motor mounts and that the muffler is securely attached to the engine.
6. The engine must have either a spinner or safety nut.
7. Check the propeller blade. There should be no nicks or cracks.
8. Look at the nose gear to make sure that it is properly aligned and at the correct height.
9. All pushrods must move freely, be free of warps, and be minimally flexible.

10. "Z" bends are recommended when attaching a pushrod to a servo wheel. In the absence of a "Z" bend, make sure that the fastener is tight. All clevises should be clamped with a piece of tubing or its equivalent. All control horns should be secure.
11. Check each servo to make sure that it is properly shock mounted and that all screws are tight.
12. The receiver and battery pack should be wrapped in foam and secured inside the fuselage so that they cannot move.
13. Make sure that the receiver antenna is fully extended and not frayed.
14. Ask the owner if the radio was charged for at least 12 hours immediately prior to the flight.
15. Work the controls to make sure that each transmitter command matches the proper corresponding flying surface movement.
16. Conduct a range check. With the antenna collapsed, walk about 100' away from the model and make sure that each flying surface responds.
17. If applicable, attach the wing with #64 rubber bands (one for each ¾ lb. of weight).
18. Check the center of gravity and add balancing weight, if necessary.

The safety of our members, applicants, and guests is of paramount importance. The best safety tip is to always use common sense. Nevertheless, the following remarks are noteworthy:

- When an engine is running, make all needle valve adjustments from behind the rotating propeller.
- Keep your body and face out of line with the propeller. If a blade breaks, it could be thrown like a knife.
- A radio-controlled model which is being operated in a reckless manner (intentionally or unintentionally), can be a dangerous projectile. If you are in trouble while flying, loudly alert everyone around you.
- Landings should be parallel to the runway.
- Young children should not be sent to retrieve models.

APPLICANT PROCEDURE

- 1) Every applicant should work with the training coordinator to get help in connecting with a CCRCC member to learn the fundamentals of model aviation. That member will be your guide and mentor through the initial stages of selecting, building/and checkout of your model aircraft. The Applicant is responsible for their conduct and following established procedures and rules of CCRCC. It is not the obligation of the club members or its officers to provide flight training. The applicant is the responsible party to become active by attending meetings, working with the training coordinator in establishing flying sessions with active CCRCC volunteer members.
- 2) You must have a current AMA member card at the time of your application. Your mentor must be a member in good standing of this club, and must be willing to assist you. An applicant is never to fly unsupervised. To do so will result in expulsion from the club and the forfeiture of your dues.
- 3) Your mentor will guide you through the skills necessary to pass a basic flight test. Your mentor has volunteered flying time to teach you, so please respect it.
- 4) Your aircraft should be able to pass a preflight safety inspection by an active member. This is for your protection as well as the preservation of your aircraft.
- 5) Basic flying skills procedures are in the training program in the next section and will need to be followed by you and signed off by your mentor active member as you learn and progress to pass your flight test.

CCRCC PHASED FIXED WING TRAINING PROGRAM

TRAINING PROGRAM PHASE ONE

ITEM	TRAINER	DATE
1. Pre Flight Inspection and Model Balance		
2. Frequency Control and Transmitter Impound		
3. Radio System Range Check		
4. Basic Aerodynamics and Flight Controls		
5. Proper Engine Start, Safety, Adjustment		
6. Understanding Clubs Flight Boundaries		

This Phase must be completed and Signed Off by an Active Member before moving to Phase Two.

TRAINING PROGRAM PHASE TWO

ITEM	TRAINER	DATE
1. Slow Speed Taxi on Runway w/ wing		
2. Sustained Straight and Level Flight		
3. Right and Left Turns, Circles		
4. Climb, Descend and Return to Level Flight		
5. Figure Eights While Maintaining Altitude		
6. Flights With Varying Throttle Settings		

This Phase must be completed and Signed Off by an active member before moving to Phase Three.

TRAINING PROGRAM PHASE THREE

ITEM	TRAINER	DATE
1. Slow Speed Stall		
2. Steep Turns and Figure Eights		
3. Climbing and Descending Left & Right Turns		
4. Coordinated Turns (ailerons and rudder)		
5. Rudder Only Turns		
6. High Speed Taxi Without Wing (preparing for a take off)		

This Phase must be completed and Signed Off by an active member before moving to Phase Four

TRAINING PROGRAM PHASE FOUR

ITEM	TRAINER	DATE
1. Steady Take Offs with Good Control		
2. Flying a Steady Pattern		
3. Simulated Approaches		
4. Smooth Controlled Landings		
5. Touch and Goes		
6. Simulated Dead Stick		
Solo Status Achieved	Date:	Instructor:
Ready to take Club Flight Test	Date:	Instructor:

Phase Four must be completed and Signed Off by an active member before moving to Solo flight and Club Flight test

GENERAL PREFLIGHT INSPECTIONS

FIXED WING

The preflight and safety inspection is a necessary final inspection before flight to ensure the best possible chance for incident free flights. An active member will help you with this inspection and will make recommendations for additional work on the aircraft if needed before flight. Do not be discouraged by any delays. Your mentor is interested in the safety of you, your model, the club and the spectators.

WING REMOVED:

1. If aileron equipped, aileron servo is shock mounted and secure.
2. Aileron linkages & clevises secured & clamped closed with piece of tubing or equivalent.
3. Wing dowels not loose or cracked.
4. Check for wing warping. (Explain to applicant how to remove warping)

FUSELAGE AND ENGINE:

1. All engine and motor mounts are tight.
2. Muffler installed and secure.
3. Propeller tips not nicked and propeller blades not cracked.
4. Spinner, safety nut, or prop nut securely tightened. (AMA requires safety nut w/o spinner)
5. Fuel tank hoses not punctured or pinched and connected properly.
6. Klunk moves freely.
7. Fuel tank compartment fuel proofed, (fuel proofing is strongly recommended)
8. Servos shock mounted and securely fastened.
9. Push rods & control surfaces move freely, clevises closed and secured (fuel tubing or equiv.)
10. Servo plugs clean and plugged into correct receiver channel.
11. Switch assembly properly secured. (If possible check soldering)
12. Fully charged NICADS, or new Dry Cells. (If possible check with ESV.)
13. Receiver and battery pack wrapped in foam and secured in place.
14. Receiver antenna not broken and fully extended in a safe manner.
15. Control surface hinges pinned and secured.
16. Wheel collars tight and wheels should rotate freely.
17. Nose gear aligned and at proper height.

REINSTALL WING:

1. Aileron servo plugged into correct receiver channel.
2. Wing hold down screws tight, or rubber bands per model requirements. Typically #64 size with one per side for each 3/4 LB of model weight. Two crossed bands for security of bands.
3. CENTER OF GRAVITY falls within model limits.

RADIO CHECK:

1. Place your frequency pin on the proper post position. Then you can activate your TX.
2. Fully test all control surfaces for proper motion to TX commands.
3. Range check: With antenna collapsed walk about 100 feet towards the parking lot. Check control motions, noise or jitter, during the walk. This is done with the engine off.

CCRCC PHASED HELICOPTER TRAINING PROGRAM

PHASE ONE – Solo Hovering

ITEM	TRAINER	DATE
1. Pre Flight Inspection and Model Balance		
2. Frequency Control and Transmitter Impound		
3. Radio System Range Check		
4. Basic Aerodynamics and Flight Controls		
5. Proper Engine Start, Safety, Adjustment		
6. Understanding Clubs Flight Boundaries		
7. Stationary Hovering with Training Gear		

This Phase must be completed and Signed Off by an Active Member before moving to Phase Two. Student may hover solo after sign-off.

PHASE TWO – Forward Flight Training Readiness

ITEM (Advanced Hovering)	TRAINER	DATE
1. Stationary Hovering, Idle up, Hold Awareness		
2. Basic Hover: Ascend, Hold Altitude, Descend, Land		
3. Basic Hover: Forward, Backward, Sideways, Hold Position		
4. Figure H Maneuvers		
5. Nose In 1,2,3,4		
6. Left, Right Attitude 1,2,3,4		

This Phase must be completed and Signed Off by an active member before moving to Phase Three.

PHASE THREE – Forward Flight Training

ITEM	TRAINER	DATE
1. Transition to forward flight		
2. FFF Circuit (Both directions)		
3. Slow (Hovering) circuit (Both directions)		
4. Use of rudder in turns		
5. Transition to hover		
6. Situational awareness (other aircraft)		
7. Autorotation		

This Phase must be completed and Signed Off by an active member before moving to Phase Four

Flight Testing

Flight testing should take into consideration all of the aspects outlined in the phased training. The pilot needs to demonstrate the following:

- Aircraft inspection, safety, situational awareness and field etiquette.
- Startup and shutdown
- Hovering – tail in & nose in
- Transition to and from forward flight
- Slow and fast forward flight
- Autorotation

GENERAL PREFLIGHT INSPECTIONS HELICOPTER

The preflight and safety inspection is a necessary final inspection before flight to ensure the best possible chance for incident free flights. An active member will help you with this inspection and will make recommendations for additional work on the aircraft if needed before flight. Do not be discouraged by any delays. Your mentor is interested in the safety of you, your model, the club and the spectators.

BASIC:

1. TX and RX batteries are properly and fully charged..
2. Fuel lines, tank and clunk are in good condition.
3. Main and tail rotor bolts are tightened correctly.
4. Main and tail blades are free from damage.
5. Power transmission components (belts, gears) are set correctly and in good shape.
6. Electronics are secure to the frame.

RADIO CHECK:

1. Place your frequency pin on the proper post position. Then you can activate your TX.
2. Fully test all control surfaces for proper motion to TX commands.
3. Range check: With antenna collapsed walk about 100 feet towards the parking lot. Check control motions, noise or jitter, during the walk. This is done with the engine off.

FLIGHT CONTROLS:

1. Swashplate moves in appropriate direction for a given setup.
2. Tail rotor responds in correct direction
3. Gyro moves tail rotor in correct direction
4. Throttle responds to stick correctly
5. Hold button sets throttle to idle position in all flight modes
6. Pitch curves set correctly for all flight modes
7. Throttle curves set correctly for all flight modes
8. Governor setup correctly and responds to Hold

BEFORE STARTUP:

1. Flight mode switch in normal
2. Hold switch is off.
3. Collective is full down.
4. Throttle is closed (idle).

MODELING SAFETY

One of the CCRCC's primary requirements is to establish and maintain field and flight safety to insure the model is properly built and SAFE to fly. When the model is complete, the mentor will check the applicant's modeling skills. All active club members can instruct. Not all instructors teach the same way. By following the Training Program Phases the applicant and mentor can assist him or her through the instruction and learning experience. It is suggested that the applicant log his or her flights and request the mentor to sign and comment on the instructions as given. This log will assist the applicants and mentors to maintain a steady learning process. SAFETY is vitally important. Radio Control models are large and can be fast. Handled unsafely, the model can do a cause damage and injury. Remember that safety must be considered on the ground as well as the air. The applicant should be sure to consult with their mentor on the equipment best suited to him or her. Come to the field and to the meetings and get to know the members. Ask questions and don't be afraid to ask for help, every member is willing to assist.

SAFETY TIPS

You should read and become familiar with the full AMA safety code. The following is a short list of safety tips that you should keep in mind whenever you are operating an R/C model.

1. Observe all field and safety rules. Failure to do so will result in loss of club flying privileges and could lead to expulsion from the club.
2. When the engine is running, make all needle valve adjustments from behind a rotating prop.
3. Keep face and body out of line with the propeller arc. If a propeller blade were to break off it could be thrown like a KNIFE. THINK OF A PROPELLER AS A RIP SAW BLADE.
4. An R/C airplane when operated out of control or in a reckless fashion, can be very dangerous. If you are in trouble in the air, call out for help to alert your mentor and others around you immediately.
5. Do not fly your aircraft in any area from the runway safety fence to the town road including over the pit area, spectators area or parking lot.
6. The first turn after take-off must be away from the pits and spectators.
7. Landings shall be parallel to the pit area or angularly away from the pits.
8. There should be only one retriever per plane. Notify out loud to all pilots "man" on the field. Young children are not to be sent to retrieve airplanes without adult supervision.
9. Excessive running of a motor for tune up or carburetor adjustments is not allowed in the pits and should not infringe on another persons flight time. Motors that require significant run times should be run on the hover pad next to the pit area. These engine runs should follow flag control rules similar to a normal flight sequence.
10. Please communicate loudly when in the flight pits. Notification of takeoffs, landings, emergencies, man on the field, etc. must be communicated to all pilots who are flying. Whenever possible, use another member or friend as an observer.

FLIGHT TEST PROGRAM INTRODUCTION

Required Materials: 1. Club Badge 2. AMACard 3. Suitable equipment.

Knowledge: 1. Field rules 2. Basic flight aerodynamics 3. Airplane parts and operation 4. Safety rules and etiquette.

Safety: 1. Suitable equipment 2. Preflight inspection 3. Proper frequency control 3. Safe starting procedures 4. Calls out intentions on flight line.

Development of practical skills: The development of practical skills never ends in flying. This required activity is the primary reason why people get into RC modeling. Some people attempt to fly without instruction, and almost always end up with piles of wreckage. The concept of qualified members who have passed a qualification flight test, and the applicant who will train to meet the requirements, is the primary purpose of the CCRCC organization. The practical skills test demonstrates the applicants ability to maintain adequate control of the aircraft at all times, in any direction. The flight maneuvers are intended to prove the applicants ability to make the aircraft to go in an INTENDED direction, not as a test of precision flying ability. The applicant must exhibit proper safety and field etiquette procedures. The examiner must note unsatisfactory performance and provide a written record to be used by the applicant and instructor for further training. All the practical skills are intended to develop the capability to fully fly the pattern, through the KEY POINT in both directions. The KEY POINT is 10 to 15 feet above the runway and is located at the end of the runway as a plane descends for its landing. The plane should glide through the KEY POINT to establish the proper touch down point for the landing.

Figure from Model Airplane News Tech Tip?

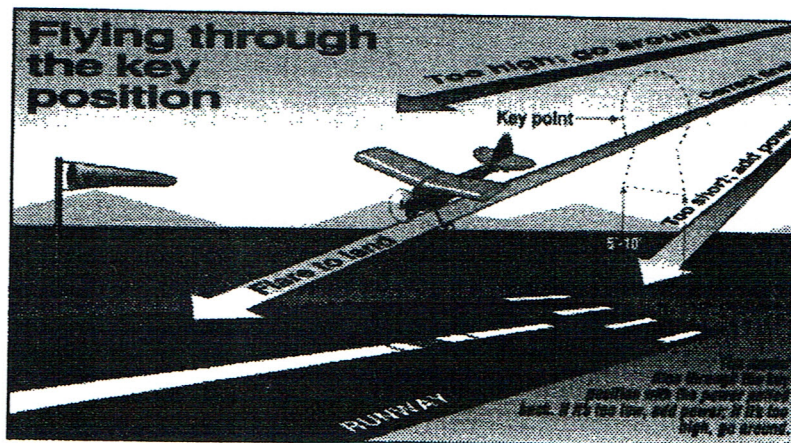


Figure from Model Airplane News Tech Tips

PFW FLIGHT TESTING MANEUVERS

FLYING THE PATTERN

The pattern contains all the necessary maneuvers to make the landings in a consistent manner that all pilots follow as a standard. Your instructor is interested to develop your skills and capabilities to fly the pattern

with relative ease. Please review the pattern as shown below to learn the location of the **FLIGHT LINE**, the **SPOT**, and the **KEY POINT**. The **FLIGHT LINE** is located along the pilots edge of the runway. We are to be trained never to fly through or over this line. The **SPOT** is located in front of the pilot (about 200 feet) and 50 to 100 feet high in altitude. On a downwind leg the **SPOT** represents the location to reduce power and descend into the landing pattern into the base leg and final approach to the **KEY POINT**. This maneuver will

require a lot of practice, but forms the basis of becoming a good pilot. As you develop your approach skills you will also learn to adjust the aircraft rate of descent through the **KEY POINT**. This trending of the rate of descent and accuracy of flying through the **KEY POINT** will provide the real clean landings that all pilots love to achieve.

Figure from Model Airplane news Tech Tips

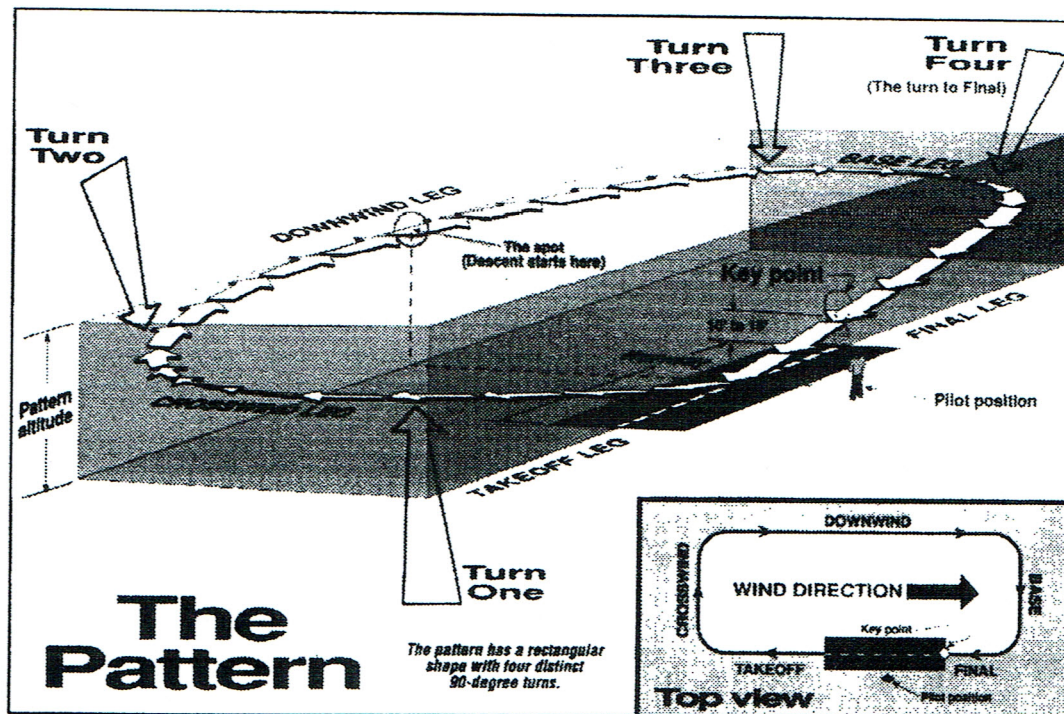
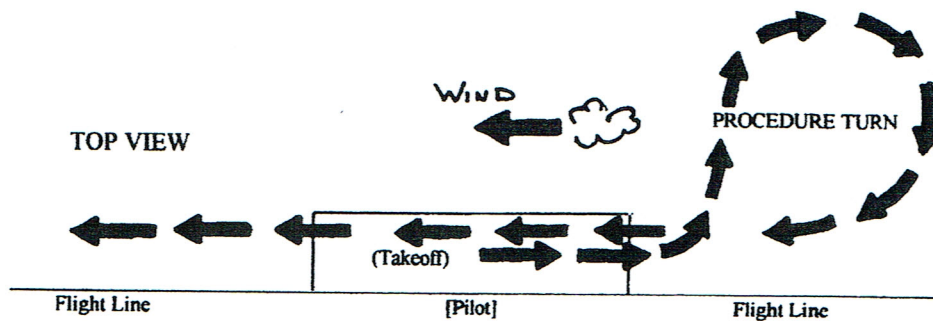


Figure from Model Airplane news Tech Tips

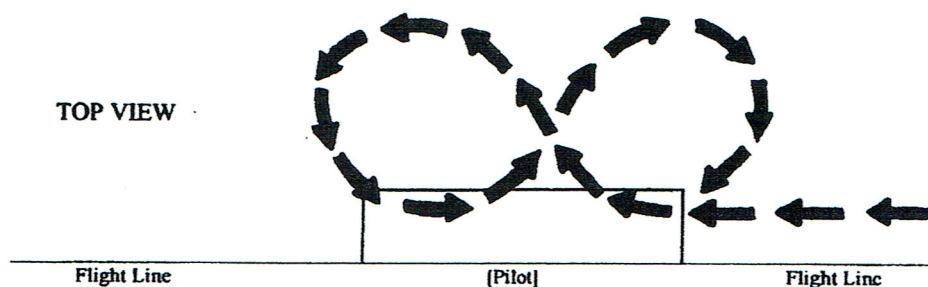
PFW FLIGHT TESTING MANEUVERS

The following maneuvers are considered to be essential to an applicants ability to fly in a safe controlled manner at the flying field. Remember, we are not establishing precision maneuvers but are establishing the proper procedures and intended safe maneuvers.

TAXI ,TAKE-OFF AND PROCEDURE TURN: Taxi and takeoff requires the development of skills to hold a straight line into the wind. The ability to hold a straight line is greatly influenced by the aircraft and its wheel alignments. This is true for both the tricycle, and tail draggers. The aircraft should be checked frequently for wheel alignments. Remember to check the wind prior to takeoff. Trainer type aircraft with flat wings need to be carefully controlled in crosswinds. If you turn from the flight line too early (before getting good air speed) the crosswind can push up the wing and cause a wing over crash. Get some altitude and airspeed before initiating the procedure turn. This turn starts with the initial turn away from the pits or flight line (90 degrees) then a turn at constant altitude which will cover 270 degrees back to the runway with heading adjustments to be made on the return. (See figure below.)

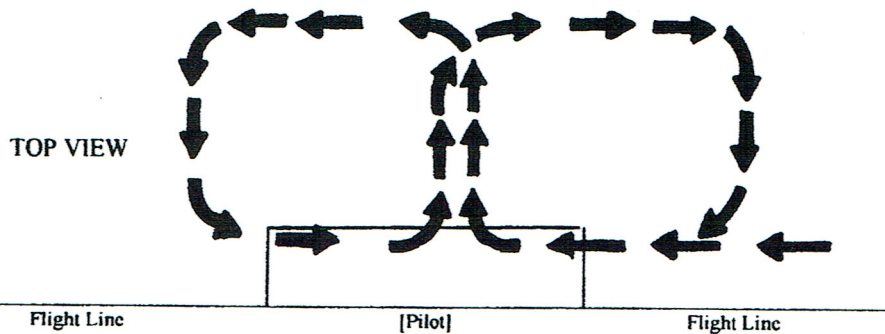


HORIZONTAL FIGURE EIGHT: To demonstrate aircraft maneuvering skills, the horizontal figure eight provides all the turns required in pattern flight. This maneuver should be conducted at about 100 feet of altitude, with the crossover point 200 to 250 feet in front of the pilot. Maintaining altitude is one of the measurement parameters in the horizontal level.

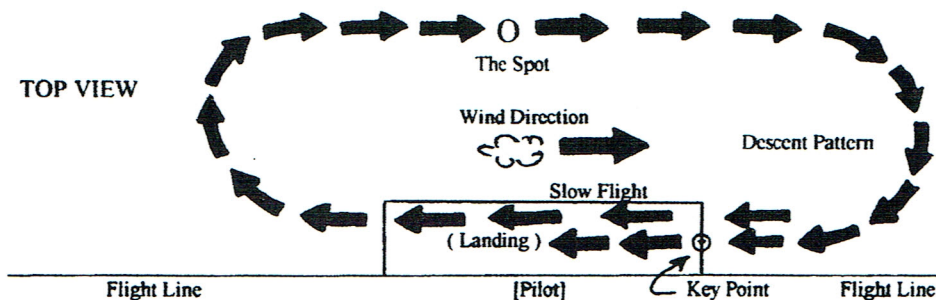


PFW FLIGHT TESTING MANEUVERS

SQUARE FIGURE EIGHT: The square figure eight is conducted the same as the horizontal figure eight except that the turns are squared in all of the maneuver. This maneuvering enables the instructor to see some precision in flying skills while maintaining a constant altitude in the horizontal level.



SLOW FLIGHT AND LANDING: This maneuver demonstrates the flyer's ability to fly near stall speed at 20 to 30 feet of altitude the full length of the runway. This speed is obtained by setting the throttle at the $\frac{1}{4}$ to $\frac{1}{3}$ setting. This maneuver should be flown into the wind for safety reasons and the pilot should be aware of the flight line, maintain a straight line, and hold a constant altitude. The ability to land an aircraft, in most cases, is the most challenging part of learning to fly. Learning to fly the pattern, turning capabilities, maneuvering, slow speed flight, and awareness of the FLIGHT LINE, SPOT, and KEY POINT are all important elements of the model pilot's expertise. All experienced pilots will tell you that the most important maneuver in flying is practice, practice, practice, ... etc.



POWERED FIXED WING QUALIFICATION FLIGHT TEST

The practical skills qualification test will be conducted by the club designated qualified flight test examiner.

The applicant must pass (6 or Higher) all six elements and will be graded as follows:

1.0 TAXI: & TAKEOFF (Includes hand launch).....[10 9 8 7 6][5 4 3 2 1 0]

- a) Selects proper wind direction.
- b) Adequate directional control.
- c) Makes first turn away from flight line.
- d) Safety and etiquette (announces intentions, yields to other traffic, etc.)

2.0 PROCEDURE TURN: [10 9 8 7 6][5 4 3 2 1 0]

- a) Adequate directional, and altitude control. Avoids flight line.
- b) Exhibits stall awareness.
- c) Safety and etiquette (announces intentions, etc.).

3.0 SLOW LOW FLIGHT:..... [10 9 8 7 6][5 4 3 2 1 0]

- a) Adequate directional, and altitude control. Avoids flight line.
- b) Exhibits stall awareness.
- c) Safety and etiquette (announces intention, etc.).

4.0 HORIZONTAL EIGHT:..... [10 9 8 7 6][5 4 3 2 1 0]

- a) Adequate directional and altitude control (to and from flight line).
- b) Avoids crossing flight line.
- c) Safety and etiquette (announces intention, etc.).

5.0 SQUARE EIGHT:..... [10 9 8 7 6][5 4 3 2 1 0]

- a) Adequate directional, and altitude control (to and from flight line).
- b) Avoids crossing flight line.
- c) Safety and etiquette (announces intention, etc.).

6.0 LANDING:..... [10 9 8 7 6][5 4 3 2 1 0]

- a) Adequate directional control, exhibits stall awareness.
- b) Avoids flight line.
- c) Safety and etiquette (announces intentions, yields to other traffic, etc.).

FLIGHT TEST RESULTS: Applicant _____ Pass () Fail ()

Examiner: _____ Test Date _____

Comments: _____

POWERED HELICOPTER QUALIFICATION FLIGHT TEST

The practical skills qualification test will be conducted by the club designated qualified flight test examiner.

The applicant must pass (6 or Higher) all six elements and will be graded as follows:

1.0 HOVER & TAKEOFF [10 9 8 7 6][5 4 3 2 1 0]

- a) Stationary hovering, idle up, hold awareness.
- b) Basic hover: ascend, hold altitude, descend.
- c) Basic hover forward, backward, sideways, hold position.
- d) Hovering – nose - in at 12,3,6& 9 o'clock directions.
- e) Hovering – tail - in at 12,3,6& 9 o'clock directions.
- f) Safety and etiquette (announces intentions, yields to other traffic, etc.)

2.0 FORWARD FLIGHT: [10 9 8 7 6][5 4 3 2 1 0]

- a) Control transition to and from forward flight.
- b) Makes first turn away from flight line.
- c) Fly FastForwardFlight circuit in both directions
- d) Adequate directional, and altitude control. Avoids flight line.
- e) Exhibits situational awareness.
- f) Safety and etiquette (announces intentions, etc.).

3.0 SLOW LOW HOVERING CIRCUIT:..... [10 9 8 7 6][5 4 3 2 1 0]

- a) Adequate directional, and altitude control in both directions. Avoids flight line.
- b) Exhibits situational awareness.
- c) Safety and etiquette (announces intention, etc.).

4.0 FIGURE EIGHT MANEUVERS:..... [10 9 8 7 6][5 4 3 2 1 0]

- a) Adequate directional and altitude control (to and from flight line).
- b) Avoids crossing flight line.
- c) Safety and etiquette (announces intention, etc.).

5.0 PIROUETTE AND AUTOROTATION:..... [10 9 8 7 6][5 4 3 2 1 0]

- a) Adequate directional, and altitude control (to and from flight line).
- b) Avoids crossing flight line.
- c) Safety and etiquette (announces intention, etc.).

6.0 FLARE AND LANDING:..... [10 9 8 7 6][5 4 3 2 1 0]

- a) Adequate directional control, settling with power.
- b) Avoids flight line.
- c) Safety and etiquette (announces intentions, yields to other traffic, etc.).

FLIGHT TEST RESULTS: Applicant _____ Pass () Fail ()
Examiner: _____ Test Date _____
Comments: _____