

INDIANAPOLIS RADIO CONTROL MODELERS CLUB
(Indianapolis RC Modelers Inc)
CONSTITUTION
Updated January 2022

ARTICLE I -- Name

1.0 The name of this organization shall be the Indianapolis Radio Control Modelers Inc.

ARTICLE II -- Objectives

1.0 The objectives of this organization shall be to promote modeling and its associated educational and recreational activities.

ARTICLE III -- Policies

1.0 This organization shall be a nonprofit incorporated association.

2.0 Neither the name nor the activities of this club shall be associated with any outside organization or partisan activity not in the best interest of radio control modeling.

3.0 Activities of this organization shall be directed exclusively to plans and projects promoting the best interests of the club and its members.

ARTICLE IV -- Membership and Dues

1. Membership in this organization is open to all individuals interested in radio control modeling, subject to the conditions listed in the subsequent paragraphs of the Articles.
2. Membership is classed as ADULT, YOUTH, FAMILY and DEPENDENT. ADULT and YOUTH memberships are defined by the current regulations of the Academy of Model Aeronautics (AMA). FAMILY membership covers the ADULT member as well as any DEPENDENTS and the spouse of an ADULT member. A DEPENDENT member shall be defined as a dependent of an ADULT member and shall not have reached their 19th birthday as of July 1st of the year of membership.
3. Membership in the club shall include only individuals belonging to the Academy of Model Aeronautics.
4. Resignation - Any member in good standing may resign his/her membership by giving written notice to the Club.
5. Termination - If any member ceases to have the qualification necessary for membership in the AMA, his/her membership in the Club shall thereby terminate, subject to reinstatement upon restoration of eligibility
6. Expulsion - This section provides for enforcement of the Safety Rules that are related to flying activities or any other unacceptable behavior by an individual member or members. Any individual may be expelled from membership from the Club by a two-thirds (2/3) majority vote of the membership present at a club meeting (as defined in Article VIII) if in the officers' determination, such individual willfully commits any act or omission which is a violation of any of

the terms of these Bylaws, or the Rules of the AMA, or which is detrimental to the Club, the AMA, or to model aviation. As an example, if a member were to commit physical violence against another member, willfully and obviously damage another persons' or the club's property or willfully and purposely endanger other people with their actions this rule could be applied.

7. Reinstatement – Identical to 6. Expulsion, A two-thirds majority vote of the membership present at regular meeting is required for reinstatement to the club.
8. Club membership ends each year on December 31st regardless of the date a membership application is received.
 - 8.1. Late year membership is as follows: Those who join from October 1st through December 31st pay full next year's rate and receive membership for the following year plus whatever days membership remain in the year of application.
 - 8.2. The determination of the amount of club dues for all membership categories for the succeeding year shall be by the majority vote of the membership present at a club meeting upon the recommendation of the Executive Board, at a time no later than the September meeting of the current year.
 - 8.3. Full club dues shall be paid annually by ADULT, and FAMILY members
 - 8.4. Those renewing membership after the end of the February meeting shall pay a penalty. The amount of the penalty for the succeeding year shall be determined by the majority vote of the membership present at a club meeting upon the recommendation of the Executive Board, at a time no later than the September meeting of the current year.
 - 8.5. Club dues for YOUTH members shall be one-half the ADULT member fee.

ARTICLE V -- Officers and Elections

- 1.0 Any member in good standing for a period of at least six months is eligible to hold office.
- 2.0 Officers shall consist of a President, Vice President, Secretary and Treasurer. Officers shall serve a period of one year or until their successors are elected and installed.
- 3.0 Nominations for any office may be made from the floor at the October, November, and December club meetings. Members may also nominate themselves for any office. All nominees must be a member in good standing and shall consent to run for office prior to the elections in December.
- 4.0 When there is more than one person nominated for an office then election shall be by secret ballot at the December meeting each year. Election of an officer shall be based on the nominee that receives the most votes.
- 5.0 Newly elected officers shall assume office January 1, each year.
- 6.0 A Safety Coordinator shall be appointed by the president on a yearly basis. This individual will monitor and report on safety issues to the board and interface with AMA leadership as needed.

ARTICLE VI -- The Executive Board

1.0 The elected officers of the club are the Executive Board.

2.0 This board shall formulate the general policies of the organization and shall act on all necessary matters of the business in the interim period between meetings of the organization.

3.0 The Executive Board shall fill, by appointment, any vacancy of office of the organization until the next regular election.

4.0 This Board shall meet as needed during the year or whenever called by the President.

5.0 Three members of the Executive Board shall constitute a quorum for the transaction of business.

ARTICLE VII -- Duties of Officers

1.0 The **President** shall preside at all meetings, shall appoint each Special Committee as are necessary for the proper conduct of business of the organization, and shall serve as ex-officio of each.

2.0 The **Vice President** shall preside in the absence of the President and shall assume the duties of the office of President in such an event and shall be a member of the committees.

3.0 The **Secretary** shall keep the minutes of all meetings, shall notify all Chairmen of their appointments, and shall conduct such correspondence as may be delegated to the office.

4.0 The **Treasurer** shall be custodian of all funds and shall maintain such funds and make such payments as are authorized by the organization, and shall keep accurate records of receipts, and expenditures, and shall submit a monthly report to the membership showing all transactions by the club and the current state of the budget in light of these transactions. This monthly reporting shall include a final yearly summary at the end of the fiscal year. Fiscal year to run from October 1st to September 31st of each calendar year. At the October club meeting the Treasurer shall present a summary of the previous year club expenses. This summary along with any anticipated expenses for the following year shall be used as a draft budget for the coming year.

ARTICLE VIII -- Meeting of the Organization

1. The Organization shall hold regular meetings on the first Monday of each month and at other times as called by the Executive Board.

2. *Twenty* percent of the members in good standing shall constitute a quorum necessary for the conduct of business.

3. Robert's Rule of Order, Revised, when not in conflict with this Constitution, shall govern the proceedings of the Organization.

4. The duration of the club shall be perpetual. The club may be dissolved with the approval of two-thirds vote of the membership.

ARTICLE IX -- By Laws

1.0 The Executive Board and three club members appointed by the President shall serve as a Standing Committee to formulate and propose By Laws governing club activities. Proposals shall be enacted by the affirmative vote of two-thirds of the members present at a regular monthly

club meeting.

ARTICLE X -- Amendments

1.0 This Constitution may be amended by a two-thirds majority vote of the club members at any regular meeting of the organization, provided notice of intent to amend has been given at a previous meeting.

ARTICLE XI -- Grievance Procedure (Flight and Safety Rules).

1. The grievance procedure provides a mechanism to enforce existing safety rules by providing a progressive disciplinary system when needed. Although most complaints can be resolved informally, if a complaint is serious or cannot be resolved informally, the matter should be referred to the Board for its consideration by means of a Grievance Form to be filled out and turned into the Safety Coordinator. At least one witness is required to sign the Grievance Form. The Board shall use its judgment in carrying out action on the following:
 - a. A grievance form will be filled out and turned into the Safety Coordinator. At least one witness is required.
 - b. **FIRST VIOLATION** - Viewpoints of both complainants and accused will be considered. Complainant's name will be disclosed. A verbal reprimand will be given to the accused by the Club Safety Coordinator/Board, and this will be recorded in the Club records.
 - c. **SECOND VIOLATION** - Complainant's name will be disclosed. The accused has the right to a written rebuttal, to be reviewed by the Club Safety Officer/Board. If the Board so decides, the flying privileges of the accused will be suspended for thirty (30) days. Written notice of this shall be issued and a copy published in the Club newsletter.
 - d. **THIRD VIOLATION** - Safety Coordinator/Board will notify the accused in writing and the Club members via the Club newsletter that the Club will vote on the expulsion of the accused at the next meeting. Said expulsion will last for a one-year minimum. A member may be expelled from the Club only upon a two-thirds (2/3) majority vote of the membership present at the meeting. Voting will be by secret ballot at a regular monthly meeting. The expelled member may reapply for membership after the expiration of the expulsion time period.
 - e. The three actions will not be enforced unless they are accumulated within a two-year period of time.
 - f. Any member receiving a Grievance, who directs any retaliation action against the person filing said grievance, will be subject to immediate expulsion from the Club. This is to include threats, intimidation, physical harm, intentional equipment damage, or any other action deemed to be retaliatory by the Club Officers.

Indianapolis RC Modelers Club Grievance Form

Date: ____ / ____ / ____

Time: _____

Nature of Violation:

Signature: _____

Witness: _____

INDIANAPOLIS RADIO CONTROL MODELERS CLUB

BYLAWS

AIRPORT REGULATIONS

Updated November 2021

Everyone has joined this club to have fun flying radio control aircraft. Each member has the right to maximum enjoyment of their hobby, and each member has the responsibility of helping others pursue the same objective. These airport regulations, based on common sense and safety, have therefore been enacted in order that each member may obtain maximum benefit from the flying site.

In order to more easily understand the regulations included here a diagram of the layout of the field, as well as a diagram showing the “no fly” zones around the field are included in appendix B of this document. Please reference these as needed.

A. **GROUND CONTROL**

1. Automobiles must be parked in assigned areas to avoid congestion and blocking runways.
2. Engine run-in is restricted to the far north or south end of the pit fence.
3. Spectators are welcome at the flying site and should be shown the courtesy their interest warrants.
 - (a) Spectators should remain in assigned areas unless invited into the pit or flying area by a member.
 - (b) All children must be accompanied by, and under direct supervision, of an adult.

B. **FIELD RULES**

These are the rules for safe operating practices at the Indianapolis Radio Control Modelers Field. These rules are to be followed every time you are at the field, whether it be alone or with other persons present!

1. Only 2.4 GHz Spread Spectrum R/C Systems may be used at the field. All other systems are not allowed to be used
 - (a) All transmitters and receivers **must** meet all current AMA and FCC regulations. (Reference the **document “Operation of RC Flying Sites”, Document 928 on the AMA website.**
2. All members shall post their club card on the “Membership Board” when they are flying. Guests shall post their AMA card in the “Membership Board” when they are flying. This is required to verify that everyone flying has current AMA membership and insurance. Posting is not required at AMA sanctioned events held at the club field.
3. We reserve the right to sound test any aircraft that we feel jeopardizes the use of our

field. If in the opinion of 3 (three) club members to a possible sound issue, the pilot could be asked to land and will not fly said aircraft until such time as it can be sound tested by the following guideline(s):

The aircraft is to be positioned on the ground and the engine run at full throttle. Sound Meter set to the "A" scale, slow response, windscreen on. The meter will be positioned twenty-five feet from the model, downwind, abeam the prop arc, set at twenty-four inches in height. The meter will point directly at the prop arc. The maximum sound levels (measured per the above listed measurement standard) are 96 decibels measured on grass (98 on hard surface).

4. Any run-in of engines must be done in the designated area. The engines being run-in must meet the requirements of paragraph B.2. above.
5. No engine/motor operation is allowed in the spectator area (areas west of the pit fence). Any operation of motor(s)/engine(s) must be done east of the fence, preferably on the flight stands.

6. Taxi Procedures

- (a) Do not let your airplane get any farther than an arm's reach from you while taxiing to the runway and avoid taxiing behind other pilots when possible. Note: Helicopters typically cannot "taxi" in the classical sense and should therefore be carried to and from the runway. A "hover taxi" is considered flying and as such should not occur behind the pilot stations at any time.
 - (b) When returning your aircraft to the pit area, the aircraft should taxi on the runway until it is back within an arm's reach of the pilot. As soon as the aircraft enters the pit area (i.e. is behind the line of the pilot stations) the engine must be shut down and the airplane carried or towed back to the pit area. Electric aircraft must have their source of motor power disconnected or arming switch set to off such that the airplane cannot throttle up. This "safe" state should also be maintained at all times when the aircraft is behind/West of the safety fence.
7. First pilot to the runway designates the active runway.
- (a) This person shall determine the active runway by the following: The runway AGAINST the prevailing wind or closest to it.
 - (b) Pilots that encounter an emergency such as radio interference, dead stick, etc., and wish to land, must state their situation to obtain priority for landing.
 - (c) Determination of which runway is active will be done by those currently in the air, or by the 1st person to takeoff when no other person is flying.
 - (d) Direction of active runway may be changed by a unanimous agreement of all fliers currently in the air during a change in wind direction.
8. All pilots with aircraft in the air must position themselves at one of the flight stations. A maximum of 5 planes are allowed in the air at one time. Additional pilots can join in if agreed upon by all pilots currently flying or for special events.
9. All flight is to be restricted to an area South of the tree line that runs parallel to the road to the North of the club property and East of the flight line. There will be **NO** low

passes toward the pits. Be aware of low flying full-scale aircraft. If a full scale aircraft approaches the field all model aircraft must immediately drop below the height of the surrounding trees.

10. The field is to be used for radio controlled models only. All model types are required to follow all field rules, both stated and implied.
11. No one flies without AMA membership! NO EXCEPTIONS! You must have your club membership card in the "Membership Board" before turning on your transmitter. Students being trained by a club "Intro Pilot" under the AMA program are covered under AMA insurance but do not have an AMA card.
12. Members may invite guests to fly at the club field. Each guest may fly no more than 3 days per year (*does not include club AMA sanctioned events*). Any other circumstances must have the consent of the Standing Committee. The member is fully responsible for the actions their guests.

Violations of rules by guests will be considered as violations by the member.

13. Visitors and spectators are not allowed in the pit area without escort of a club member. All pets (dogs, cats, etc.) brought to the field must be kept in the vehicle or on a leash and restrained by the owner when outside the vehicle.
14. Pilots must not consume alcoholic beverages or **be** under the influence of any substance that impairs cognitive functions prior to, nor during, participation in any model operations.
15. Any person that flies solo must have an instructor present or have passed LEVEL 2 requirement of the Achievement Program with the following exceptions.
 - (a) Any member who has joined the club and possesses a Park Pilot AMA membership may fly aircraft that meet the Park Pilot criteria as defined by AMA (aircraft weighing 2 pounds or less AND that fly below 60 mph) regardless of their Achievement LEVEL. Such pilots are expected to know and abide by all applicable AMA and IRCM club rules (particularly with emphasis on safety) while taking advantage of this privilege. A brief check flight to prove that a pilot has the minimal skills necessary to avoid flying behind the flight line and a review of applicable AMA and club rules with any club officer or instructor is required before the member first flies at the field.
 - (b) All other members can likewise fly aircraft that meet the Park Pilot criteria as defined by AMA in addition to their other flight privileges. For LEVEL 1 members seeking to attain LEVEL 2 privileges this means that they may fly such aircraft while simultaneously working toward their LEVEL 2 attainment after a check flight and rules review as described above.
16. Gliders using a "High start" may only be used when powered aircraft are not present.
17. All aircraft must be pitted within 10 feet of the safety fence (on the runway side of the fence) and when starting engines
18. All aircraft shall be flown in accordance with AMA safety requirements including the requirement for owner's AMA number or name and address attached to the aircraft.

19. All new/repared aircraft shall be preflight inspected to the criteria of the Preflight Checklist (appendix A) prior to flight.
20. The president shall appoint a Safety Coordinator. The Safety Coordinator is responsible for monitoring the member's conformance to the airport regulations however, all members are responsible to insure members and guests follow the rules.
21. A collection overflow device shall be used when fueling aircraft to minimize spillage of fuel on the ground.
22. For safety reasons No flying is allowed while the runway and pits are being mowed.
23. No trash of any kind will be left at the field. If you brought it with you – take it home.
24. Allowed flying times are as follows:

For electric powered or glider aircraft – 8:00AM to midnight every day. For all other aircraft – 9:00AM to dusk Monday through Saturday, 12:00pm (noon) to dusk on Sunday.
25. Last club member leaving the field for the day must make sure the flag has been lowered and put away and the buildings and equipment lockers are secure and lock the gate.

Any type of flying that endangers people or property at the field will not be tolerated. It is the responsibility of every member to follow and enforce these rules. Don't be afraid to remind any violator of their obligation to follow the above rules.

C. ACHIEVEMENT PROGRAM

The initial intention of the achievement program is to provide the student pilot with adequate instruction to enable him or her to build and fly a radio controlled aircraft in a safe and controlled manner.

GENERAL:

1. The Achievement Program is mandatory ONLY through Level 2. Level 3 and above are provided only as an option for those wishing to enhance their flying skills.
2. A Student pilot must have an instructor's assistance to fly. Only members with a Level 2 or higher rating will be allowed to fly solo.
3. It will be the airplane owners' responsibility to assure that the aircraft is in good flying condition.

NOTES:

1. Flyers upgrading to Level 2 must pass that level as judged by an instructor and another observer of Level 2 or above.
2. Flyers upgrading to Levels 3 or 4 must pass that grade level as judged by three flyers that are at least Level 2 and have a working knowledge of the requirements. At least two of the three judges must agree that each maneuver is performed satisfactorily for the Level to be passed. Certification flights may take place on different days however; the entire sequence must be flown and witnessed by each judge during one flight.
3. An instructor is not financially responsible for a student's aircraft in case of damage or a crash.
4. Pilots advancing to any Level must exhibit self-control during any emergency or accident.

LEVEL 2 PILOT To attain the pilot rating, a student pilot must be able to:

1. **Know and exhibit proper field behavior concerning flying boundaries and courtesy, pilot conduct and use of the frequency board.** The student should check the frequency board and insure his/her card is in the correct slot before activating their radio. They should also observe proper communication and observe no fly boundaries during the entire flight. Student Pilot should understand and abide by all AMA and club safety regulations.

2. **Perform a preflight check of aircraft and radio equipment.** This should include, but is not limited to a check of battery condition, proper control surface movement and a standard range check. If the equipment is capable, the student pilot should demonstrate both a throttle cut functionality as well as a loss of signal "fail safe".

3. **Prepare aircraft for flight and start/tune engine.** The student should fuel and start aircraft without assistance while maintaining safe operating procedure.

4. **Perform 2 unassisted takeoffs.** One in each direction. The student should take off and land (see item 6) in a direction approximately parallel to the center line of the runway in each direction. The student should exhibit reasonable control during the taxi and takeoff roll such that safety is

maintained.

5. **Exhibit controlled flight by a series of left and right turns.** The student should fly a standard 4 cornered race track pattern or something similar to prove their control over the aircraft.
6. **Perform 2 controlled landings.** The student should land as described in item 4. After landing the student should taxi back to the pilot station area or the pits as they wish. Killing the engine on landing via a prop strike on the ground is NOT necessarily grounds for a failing grade but should be discouraged as this is typically a sign that the student needs more practice.
6. **Exhibit controlled flight during a simulated dead stick landing approach.** (Instructor has student pilot bring engine to idle and Student Pilot must make a safe approach to runway – power can be applied before a landing is made) This landing may vary somewhat from a perfect parallel approach from the runway center line but should NOT be made directly in the direction of the spectators, parking lot or pits. Student pilots should recognize that safety is the paramount issue, not recovery of their airplane. Landing in the long grass or field areas is acceptable.
7. **All of the above must be performed without the use of any self righting or automatic return to home or landing functionality.** I.E. No use of “Safe” or “Panic mode” etc...

Note: It is recommended that all new Level 2 pilots use an observer during the first 30 days following certification.

LEVEL 3 EXPERIENCED To achieve Level 3, a pilot must:

1. Have knowledge of all transmitter stick modes. The pilot should be able to explain the control layout of a 4 channel radio using modes I and II, including which control surfaces are affected by which stick movements.

2. Perform the following maneuvers during one flight/consecutive flights:

a. **Takeoff with turnout both left and right traffic patterns.** This should include taxiing from the pits to the runway, exhibiting safety and control of the aircraft at all times.

b. **Sustained inverted flight** including left and right turns for the length of the runway. This would best be exhibited by either a complete “lap” around the pattern or horizontal figure 8 around the field while inverted.

c. **Three consecutive inside loops.** Inside loops are loops where the canopy or top of the aircraft faces the inside of the circle drawn. They may be entered from either upright or inverted at the pilot's option. Loops should exhibit control not simply “full up”. The loops should have a constant radius, i.e. look round, and should not have flat spots. Ideally the entry and exit point to the loops should be constant in both distances from the pilot as well as altitude above the ground.

d. **Three consecutive outside loops.** Outside loops are loops where the wheels or bottom of the aircraft faces the inside of the circle drawn. They can be entered either upright or inverted at the pilot's option and should be judged similarly to the inside loops above.

e. **Three consecutive rolls,** left or right. The pilot will perform 3 consecutive aileron rolls in whichever direction the pilot decides. The rolls should be one constant maneuver, i.e. no pauses between rolls. The pilot should enter the maneuver from a straight and level heading (i.e. no pitching up into the maneuver). The pilot should enter and exit the maneuver at the same altitude and heading on which he entered.

f. **Landing patterns both left and right** with a touch and go on the first. The pilot should fly a complete, rectangular landing pattern, complete with four distinct turns and lines. On the first (either downwind or upwind as the pilot wishes) the aircraft should touch at least its main landing gear on the ground and then throttle up and continue the flight, i.e. "touch and go". The second approach should be done in the opposite direction and should result in a safe landing and taxi off of the runway.

g. **A Three turn spin**, at a safe altitude, left or right. The pilot should enter from a straight and level attitude and should stall the aircraft on entry. The aircraft should be continuing on heading and without altitude change up the entry to the spin. Ideally the nose should drop as the wing drops to one side, indicating proper spin entry. The pilot should complete the three spins with the nose of the airplane straight down or nearly so and should stop rotation and continue to fly straight down for a short distance to show control. The pilot should then pull out back to level flight in the same direction as the plane was flying upon entry. A spin has not been executed if the aircraft appears to fly into a nose down attitude or if the plane makes a significant amount of wing rotation before the nose drops. This is considered a forced entry and is not acceptable.

LEVEL 4 EXPERT To Achieve Level 4, a Level 3 pilot must:

1. **Exhibit self control during any emergency or minor accident to lesser experienced fliers.** This is not really a measurable parameter but it is important that a pilot at this level be willing and able to help less experienced pilots in the case of any event involving safety of members and spectators. Pilots at this level are expected to be more vigilant in this regard and are encouraged to keep safety first, even if that means landing in the corn rather than trying to guide a partially out of control model back onto the field where it might endanger others; or perhaps NOT flying if there is any doubt as to the flight worthiness of a model aircraft.

2. **Perform the following maneuvers during one flight/consecutive flights:**

a. **Double Immelman** The pilot should enter the maneuver from straight and level flight and should draw a line parallel to the flight line and at a constant altitude. The aircraft should pull a half loop (which should be one continuous radius without flat spots and with wings remaining level). Immediately upon reaching level inverted flight the pilot should execute a half roll to upright. The pilot should then draw another line as before but now flying in the opposite direction. The pilot should then push an outside half loop (again constant radius and wings level) immediately followed by a roll to upright. The pilot should then fly the final line of the maneuver in the same direction as the original entry line, once again straight, level and parallel to the flight line. The two half loops should be of equal radii with the result that the aircraft enters and exits the maneuver at the same altitude.

b. **Humpty Bump** To perform a Humpty Bump the pilot starts straight and level parallel to the flight line and then pulls up into a vertical up line. The pull up should be one continuous radius without flat spots during which the wings remain level. After establishing the up line, the pilot then pulls a half loop into a vertical down line. This half loop should again be one continuous pull with the aircraft ending in a direct downward path. The aircraft then should establish a down line before pulling once again back to straight and level. Finally a straight and level exit line should be established. This final $\frac{1}{4}$ loop is judged similarly to all of the previous partial loops. The initial (entry) $\frac{1}{4}$ loop and the final exit $\frac{1}{4}$ loop should be of equal radius however the top $\frac{1}{2}$ loop does not have to be of equal size, nor does the entry and exit altitude have to be similar.

c. **Avalanche** An Avalanche is simply a loop with a full positive snap roll at the top of the loop. In order to do this correctly the pilot should perform the following. The pilot should enter

the maneuver from straight and level flight. The pilot will pull up into a half loop then complete a positive snap roll centered on the top of the loop and then complete the other half of the loop. The complete loop should appear circular to the observers and should be completed at the same point where it began both in respect to altitude and distance from the flight line.

d. **Inverted Spin** - three turns The pilot should enter from a straight and level inverted flight and should stall the aircraft on entry. The aircraft should be continuing on heading and without altitude change up to the entry to the spin. Ideally the nose should drop as the wing drops on one side, indicating proper spin entry. The pilot should complete the three spins with the nose of the airplane straight down or nearly so and should stop rotation and continue to fly straight down for a short distance to show control. The pilot should then push back to level inverted flight in the same direction as the plane was flying upon entry. A spin has not been executed if the aircraft appears to fly into a nose down attitude or if the plane makes a significant amount of wing rotation before the nose drops. This is considered a forced entry and is not acceptable.

e. **Slow Roll** The aircraft should enter from straight and level on a path parallel to the runway then execute a 360-degree roll. During the entire roll the aircraft should maintain altitude and heading. As in all maneuvers the roll should be smooth and continuous without noticeable pauses or changes in speed. The roll should end back at straight and level and on the same heading as the maneuver began and should be performed at a point centered in front of the pilot. The rate of roll should be approximately one roll per 3 seconds or slower.

f. **Vertical Up line with 2 point roll** The pilot should begin straight and level and pull into a vertical up line in one smooth continuous pull. After establishing an up line the aircraft should perform a two-point roll by rolling 180 degrees then pausing before performing another 180 degree rolls in the same direction. The rolls should be smooth and continuous with a constant roll rate throughout each and similarly between the two $\frac{1}{2}$ rolls. After finishing the rolls, the aircraft should continue the up line far enough that the roll maneuver is centered on the up line. Once reaching the top of the maneuver the aircraft should push to level flight on the same heading as the maneuver started.

g. **Four point roll** The pilot should begin as always from straight and level flight and should finish with wings level and heading as well as altitude unchanged. The aircraft should roll at a constant rate between each of the roll "points" and should pause only briefly (long enough for the observer to note the pause) at each point. There should be 90 degrees of rotation between each point. Each 90 degrees of roll should take the same elapsed time to complete. The roll can be in either direction of rotation at the pilot's discretion.

h. **Knife Edge pass** The pilot should enter from straight and level then roll 90 degrees to an attitude where the wings of the aircraft are perpendicular (90 degrees) to the horizon. The aircraft should hold this attitude and its altitude for approximately the length of the runway. The aircraft should then roll back to level flight. As in all maneuvers the rolls into and out of the knife edge pass should be smooth and continuous. The aircraft should (ideally) trace a straight line parallel to the runway and maintain altitude and heading throughout the maneuver.

i. **Reverse Cuban eight** The pilot should once again begin this maneuver from a straight and level path parallel to the runway then pull into a 45° up line. Midway up this line the aircraft should roll to inverted. At the top the aircraft will perform a $\frac{3}{4}$ inside loop ending in a 45 degree up line in a direction opposite the initial heading on entry. Midway up this line the pilot should once again roll to inverted. At the top of this line, the aircraft will pull a $\frac{5}{8}$ ths loop to a wings level exit on the same heading which the maneuver started. All of the loop elements (entry $\frac{1}{8}$ th loop, $\frac{3}{4}$ loop and $\frac{5}{8}$ th loop to exit) should be a constant radius and the wings should remain level. The

result should be that the aircraft enters and exits at the same altitude.

Appendix A

Preflight Checklist

(For new or repaired gas and glow powered aircraft)

PRELIMINARY INSPECTION

- Batteries have been charged - both transmitter and receiver.
- Radio installation
 - Receiver properly installed with foam and secured in place
 - Battery pack properly installed with foam and secured in place
 - Switch properly installed and move freely
 - Servos and servo mount installed securely
 - Servo arms installed with screws
 - Control rod connections are tight and correct
 - No interference between servos when actuated
 - Servo arms and controls are tight
- Engine installation
 - Engine is tight on mount
 - Mount is tight on firewall
 - Throttle linkage tight and properly adjusted
 - Propeller properly installed
 - Nut tight
 - Spinner installed properly
 - Sharp edges removed from prop
 - Propeller balanced
 - Muffler properly installed and screws are tight
 - All screws and bolts on engine tight
- Fuel tank installation
 - Tank is at proper height
 - Tank is packed in foam
 - Fuel line properly routed

FINAL INSPECTION

- Assemble wing to aircraft (if using rubber bands ensure adequate number used)
- Check center of gravity with tank empty
- Check control surface hinges for security
- Check control horns and push rod attachments for security
- Check wheels and wheel collars for security
- Radio check
 - Range check radio in accordance with radio manufacturers recommendations
 - Move all control surfaces and ensure movement is in correct direction
 - Move all control surfaces and look and listen for binding
 - Ensure nose wheel turns in proper direction with respect to rudder
 - Ensure all switches including dual rates are in the proper position
 - Ensure throttle cut is working correctly
 - Ensure Failsafe is working correctly
- Start Engine
 - Ensure proper engine operation
 - Idle
 - Mid-range
 - High speed
 - Acceleration
 - Raise and lower nose to ensure engine is not too lean or rich
- Run up engine and watch control surfaces to ensure proper movement

GO FLY AND HAVE FUN

PREFLIGHT CHECKLIST

(For new or repaired electric powered aircraft)

PRELIMINARY INSPECTION

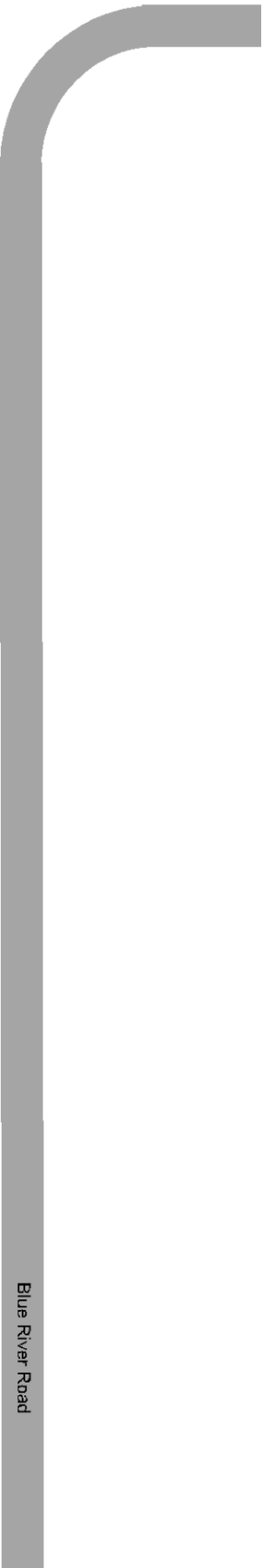
- Batteries have been charged - both transmitter and flight pack.
- Radio installation
 - Receiver properly installed and secured in place
 - Servos and servo mount installed securely
 - Servo arms installed with screws
 - Control rod connections are tight and correct
 - No interference between servos when actuated
 - Aileron servo(s) in wing is secure and servo arm and controls are tight
- Engine installation
 - Motor is tight on mount
 - Mount is tight on firewall
 - Propeller properly installed
 - Nut tight
 - Spinner installed properly
 - Sharp edges removed from prop
 - Propeller balanced

FINAL INSPECTION

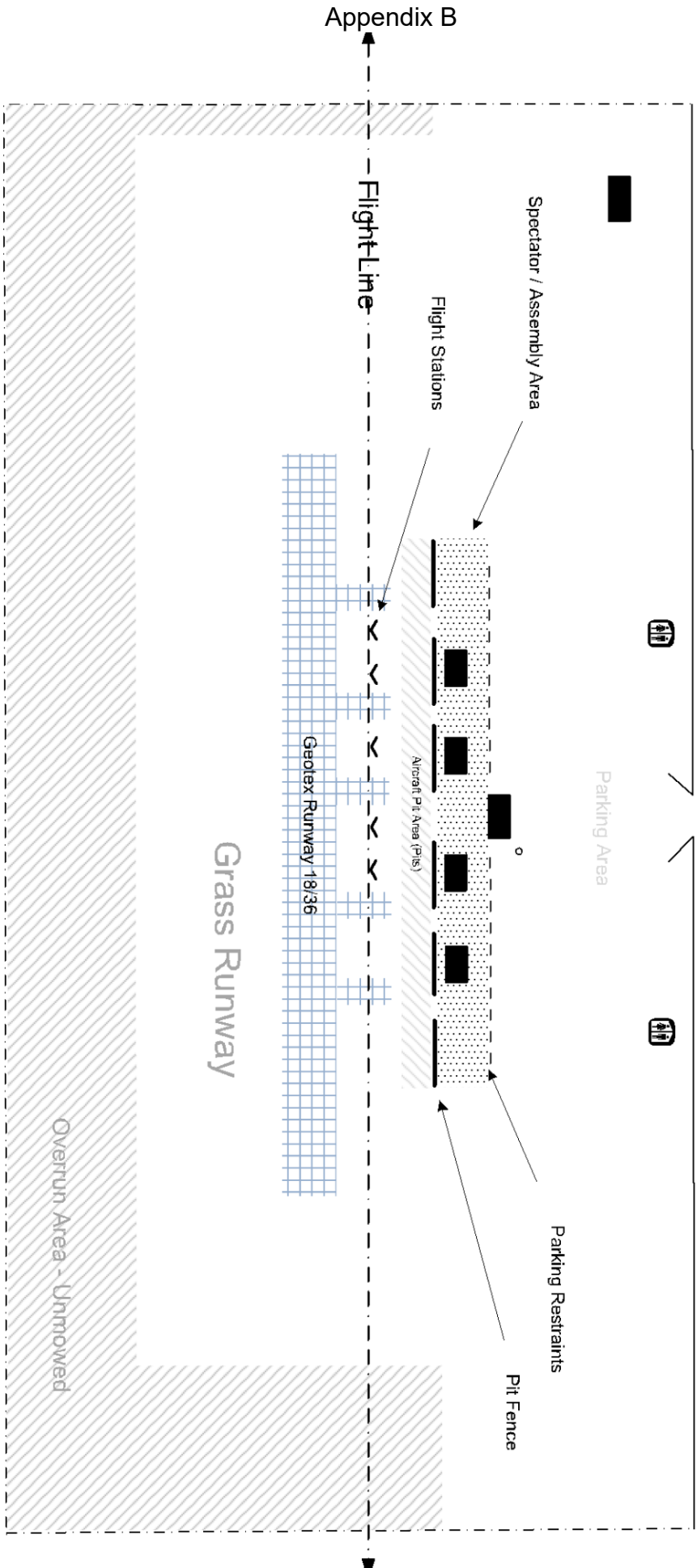
- Assemble wing to aircraft (if using rubber bands ensure adequate number used)
- Check center of gravity with battery installed
- Check control surface hinges for security
- Check control horns and push rod attachments for security
- Check wheels and wheel collars for security
- Radio check
 - Place club card in frequency board
 - Range check radio in accordance with radio manufacturers recommendations
 - Move all control surfaces and ensure movement is in correct direction
 - Move all control surfaces and look and listen for binding
 - Ensure nose wheel turns in proper direction with respect to rudder
 - Ensure throttle cut is working correctly
 - Ensure Fail safe is set correctly
 - Ensure all switches including dual rates are in the proper position

GO FLY AND HAVE FUN

Updated 1 July 2020



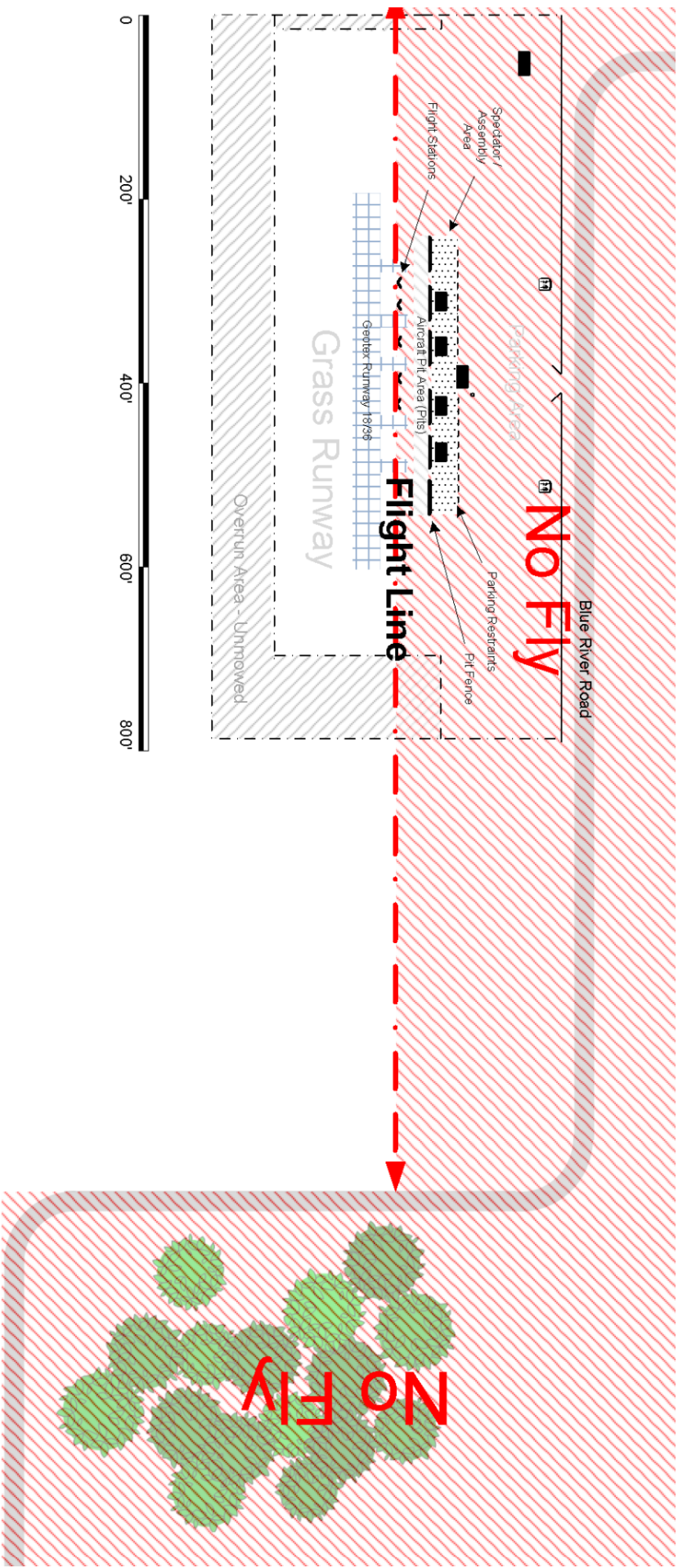
Blue River Road



Appendix B

IRC Field Layout





IRCM Field Boundaries

