HANDBOOK
Of
The Charles River Radio Controllers

2020

CLUB INFORMATION

FIELD LOCATIONS

RULES

THE CHARLES RIVER RADIO CONTROLLERS, INC

AMA Charter 339

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Welcome to the Charles River Radio Controllers, Inc. As a member, you are entitled to a membership card, access to CRRC flying fields, and a monthly newsletter. Latest information on club activities is available on our web page at: http://www.charlesriverrc.org/

MONTHLY MEETINGS

Monthly club meetings are held at the **Goodnow Library in Sudbury** generally on the **THIRD WEDNESDAY** of every month at 7:30 pm from September through April but can vary depending on availability. Summer meetings from May through August are held the Saturday morning following the third Wednesday and are held at Davis Field at 9:30 am. Check the meeting announcement in the monthly newsletter. A map to the Goodnow meeting site is shown below. We hope to see you at these meetings to share your ideas and building projects. We always have a featured topic or speaker at each meeting. Business matters that arise at the general meeting are reviewed at the Board of Directors meeting, held on the TUESDAY following the general meeting. These meetings are held on Skype and phone and start at 8:30 pm.

As club members, there are a number of rules to which we must adhere to ensure safety, preserve our flying fields, and make this wonderful hobby enjoyable to all. Just remember **SAFETY** and **COURTESY** to others, and the rules are common sense.

A BRIEF HISTORY OF CRRC

The CRRC, Inc. was founded late in November 1964 in a basement in Newton. For several months, the original thirteen met in various cellars throughout the area. In those days there were only about 35 RC clubs registered with The Academy of Model Aeronautics (AMA) and less than 12,000 AMA members.

By 1965, CRRC had come out of the underground to start meeting at the Newton YMCA. Membership climbed to 17! In these early years, there were no officers, only a chairperson. The newsletter was a postcard announcing the next meeting. No one knew how to fly an RC model except, perhaps, that Arizona transplant Bob Fish.

We flew, sort of, at the Wayland High School soccer field. RC gliders hadn't yet been imported to New England and proportional radio was a new kid on the block. People used to fly with radio systems called reeds and galloping ghost. The big names in radio were Citizenship, Bonner, Orbit, F&M, and ACE.

By 1966, CRRC had grown to 25 members, the AMA to 16,000 members, and some of them could actually control a landing! Monokote was just being invented. We flew all year long, on skis, in snowstorms, off the ice, in rain, below freezing, but it didn't help very much.

In 1967 we had a contest. The New England Radio Controllers Meet at Orange was one of the biggest RC events in the country. Phil Kraft, Ed Izzo, Jim Martin, Tony Bonetti, and Ernie Huber, all of the greats, flew. Bob Fish began to win the New England All Events RC Championship.

By 1970, CRRC sponsored and ran the New England Championship with Bob Fish as CD. In 1972, we exceeded 100 members for the first time. We got a real flying field, dedicated to RC, later named Callahan State Park. In 1773 we ran 4 AMA sanctioned contests: Scale, H-Ray racing, a fun-fly, and a soaring contest.

CRRC, incorporated in the State in the late 70's, is now one of the oldest New England RC clubs. Our strength has been the ability to find and maintain good flying fields, help new RC enthusiasts to learn, and to have interesting club meetings and events. CRRC now enjoys the use of separate AMA sanctioned fields for flying gas power-planes and gliders. Trips are organized to slope soar on Cape Cod, and several indoor athletic facilities are booked during the winter months for flying r/c out of the snow and ice. We are in constant search for new fields to continue to enjoy the hobby we love.

2020 CRRC OFFICERS

The club officers for 2011 are listed below. For general issues concerning the running of the club, contact Tony. If you want to put on a demonstration at one of the meetings, or have a suggestion for a topic, contact Howard. If you need to pay money or get a check, call Istvan. Ray will make sure that you have all of your registration materials. If you have material for the Newsletter or Web site, contact Tom.

President	Scott Ritter	president(at)charlesriverrc.org
Vice President	Jake McGowen	vicepresident(at)charlesriverrc.org
Treasurer	David Marshall	treasurer(at)charlesriverrc.org
Recording Secretary	Daniel Sullivan	
Membership Secretary	John Eppling	membership(at)charlesriverrc.org
Newsletter Editor/	Adam Smith	newsletter(at)charlesriverrc.org
Webmaster	Adam Smith	webmaster(at)charlesriverrc.org
Safety Coordinator	David Spielman	safety(at)charlesriverrc.org
Chief Instructor	Dick Williamson	chiefinstructor(at)charlesriverrc.org
Raffle Chairman	David Spielman	exofficio(at)chartlesriverrc.org

CRRC is a chartered club of the Academy of Aeronautics (AMA). We try to follow all of the AMA safety rules. These rules as well as specific CRRC field rules are printed on the following pages. If you witness a safety incident or have any questions about flying safely, please contact Brian Rickman.

BOARD OF DIRECTORS

CRRC holds a Board of Directors meeting typically on the Tuesday night following the general club meeting. These meetings discuss the business operations of the club including upcoming contests and events, raffle prizes, speakers for the next meeting and any issues brought up at the general meeting. In addition to the club officers, two volunteer members-at-large serve on the board for rotating two-month stints. The Board of Directors meeting is open to all members and guests who wish to be involved in the running of the club.

CRRC INSTRUCTOR PROGRAM

So you are interested in learning how to fly an R/C model! It doesn't matter whether you are fascinated with large power airplanes, thermal gliders, helicopters or small electrics, CRRC has a large number of volunteer flight instructors who can make sure you get in the air quickly and safely.

So what are the steps involved? How do you get started? First, choose an R/C model to learn on. Some of the best choices are a 40-size power trainer, a sailplane or an electric-powered park flyer. These are available as ARFs, or almost-ready-to-fly, with only a small amount of assembly required. This allows you to get in the air as fast as possible with the minimum amount of time and money invested. Check out the CRRC web page for a number of good articles on choosing your first airplane. Or call the Chief Instructor listed below (and on our web site) for a suggestion. There are many good choices available at your local hobby shop or by mail.

Ok, now that you have your plane ready and your AMA and CRRC memberships in place, you just show up at the field, right? Wrong! The next step is to get your plane checked out by a building or flying instructor. Again, call or email the Chief Instructor to set up an appointment with one of our building instructors at his or her home. We have recently seen a couple of first flight failures in ARFs and now require that ALL planes, whether kit built or ARF, be inspected prior to their first flights. Even if you know your plane is solid, chances are there will be something minor that must be done to your airplane before its first flight and our instructors want to spend the precious time at the field teaching students to fly, not trying to fix something without all the proper tools. Another good idea is to bring your pride and joy to the next month's CRRC meeting where everyone will be glad to give you advice.

In general, flying instruction is by appointment only. The Chief Instructor will help you find a flight instructor who is familiar with the type of plane you want to learn on. You must then contact your instructor to schedule an appointment. Please understand that instructors can't teach every weekend and typically can only handle one or two students each.

We often schedule a special "Instructor Night" on Wednesday evenings during the summer (except club meeting nights, weather permitting) at Medfield from 4:30 or 5:00 until dusk. This night gives new students an additional opportunity for instruction.

Well that's about all there is to it. Depending on weather, schedule and your innate flying ability, the time between your first flight and your successful solo flight can be anywhere from a few weeks to a few months. While not a substitute for live instruction, time on a simulator is extremely useful and noticeably speeds up the learning process.

Please note: New pilots **must** have powered aircraft or helicopters inspected by one of our instructors in a workshop setting **before** the first flight of the aircraft at one of our fields. We perform this step to prevent flight

problems and maximize safety. **Please understand that in order to ensure quality and safety we do not perform pre-flight inspections of powered aircraft at the field.** Simply contact the Chief Instructor listed below to arrange a pre-flight inspection.

Dick Williamson is our current Chief Instructor. You may contact him via email chiefinstructor@charlesriverrc.org or telephone 978-618-5475.

You can find more information about our instruction program on our website: http://charlesriverrc.org/instructor_program.htm .

BUDDY BOX PROGRAM

CRRC has a **FREE** Spektrum brand buddy box program to support flight instruction for our members, and we urge beginners to take advantage of it. Crashes can often be avoided if the instructor and student have a transmitter and buddy box hooked together. This way, the instructor can instantaneously take control when the situation warrants. In order to encourage the use of buddy boxes, the club will do the following:

- CRRC will support the student pilot by assigning an instructor with a Spektrum brand radio that can be linked to the student's Spektrum Radio.
- CRRC prefers to train glider pilots with the student's radio by simply handing off the radio. Gliders fly slow enough to control like this.
- CRRC can also provide buddy box training and the instructor will have a cable and appropriate master or slave transmitter.

Academy of Model Aeronautics National Model Aircraft Safety Code

Effective January 1, 2018

A model aircraft is a non-human-carrying device capable of sustained flight within visual line of sight of the pilot or spotter(s). It may not exceed limitations of this code and is intended exclusively for sport, recreation, education and/or competition. All model flights must be conducted in accordance with this safety code and related AMA guidelines, any additional rules specific to the flying site, as well as all applicable laws and regulations.

As an AMA member I agree:

- I will not fly a model aircraft in a careless or reckless manner.
- I will not interfere with and will yield the right of way to all human-carrying aircraft using AMAs See and Avoid Guidance and a spotter when appropriate.
- I will not operate any model aircraft while I am under the influence of alcohol or any drug that could adversely affect my ability to safely control the model.
- I will avoid flying directly over unprotected people, moving vehicles, and occupied structures.
- I will fly Free Flight (FF) and Control Line (CL) models in compliance with AMA's safety programming.
- I will maintain visual contact of an RC model aircraft without enhancement other than corrective lenses prescribed to me. When using an advanced flight system, such as an autopilot, or flying First-Person View (FPV) I will comply with AMA's Advanced Flight System programming.
- I will only fly models weighing more than 55 pounds, including fuel, if certified through AMA's Large Model Airplane Program.
- I will only fly a turbine-powered model aircraft in compliance with AMA's Gas Turbine Program.
- I will not fly a powered model outdoors closer than 25 feet to any individual, except for myself or my helper(s) located at the flight line, unless I am taking off and landing, or as otherwise provided in AMA's Competition Regulation.
- I will use an established safety line to separate all model aircraft operations from spectators and bystanders.

For a complete copy of AMA's Safety Handbook please visit:
www.modelaircraft.org/files/100.pdf

GENERAL CRRC FIELD RULES

The CRRC field rules are based on a concern for safety and common courtesy.

1. All flyers must be active AMA members and carry their membership cards with them when flying at CRRC fields.
2. Frequency pins must be used if you are transmitting in the 72mhz and more than three planes are at the field at any one time.
3. Any new, crashed, or repaired aircraft must be inspected to determine its airworthiness before takeoff.
4. All powered aircraft must be equipped with a spinner or AMA approved prop nut.
5. All internal combustion engines must be equipped with mufflers that meet the CRRC noise criteria.
6. All engine-powered planes must be positively restrained while the engine is running and plane is in the pits.
7. A fuel recovery system should be used when fueling your plane.
8. Flying over pits and /or parking areas is prohibited.
9. All non-flyers must remain behind the pit area.
10. Respect the field and neighbors. Pick up litter, do not fly low over the neighbor's homes, do not cut down trees to retrieve your plane.
11. Deer hunting season is in the fall from September through December weekdays and Saturdays. Avoid disturbing wildlife in the woods surrounding the neighboring farmers fields on these days.
12. Use a tree climber to retrieve your plane if you cannot safely retrieve it with retrieval equipment. We maintain a list of excellent tree climbers on our web page and newsletter. Cost of a tree climber is less than you would expect and far less than a plane or trip to the emergency room.
13. Violation of safety rules, flying codes, etc. should be referred to the Safety Officer and/or the Board of Directors of CRRC. Violation of the CRRC rules can result in loss of flying privileges.

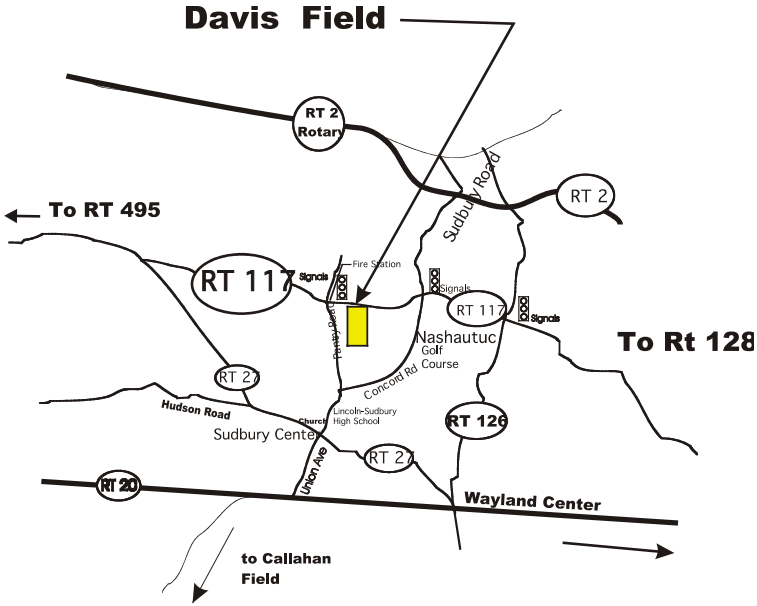
CRRC FLYING FIELDS

CRRC is blessed with two main flying fields, one for gas power and one for electric and gliders. Gas Power is flown exclusively at the Bill Martin field in Medfield and gliders/electrics are flown at Davis Farm in Sudbury. Rules applying to individual fields are listed with the information about those fields.

While not used regularly, we also have part-time access to an additional flying field for glider/electrics: The school street field in Acton can be used when Acton sports programs are not on the field. Acton does have a 400-foot altitude limit required by the town.

DAVIS FIELD IN SUDBURY

⇒ Gliders and Electric powered planes only



CRRC Flying Field Davis Farm

Guidelines for Flying at Davis Field

* Think SAFETY - be aware, notice what others are doing and where they are. Watch out for the other users of the field - dog walkers, rocketeers, guests, etc.

* Frequency Control 72Mhz- BEFORE turning on any 72Mhz transmitter, check the frequency board for your channel number. If it is free, place your frequency pin on that space and only then turn on. If others have the same channel, communicate and work with them to insure control and fair use of time.

* Frequency Control Video (FPV)- BEFORE turning on any video transmitter, check the frequency and coordinate with other FPV pilots. If the frequency is free, only then turn on your video transmitter. If others have the same channel in use, communicate and work with them to insure control and fair use of time.

* Launching Planes and multi-rotors (electric or gliders) - Yell out a notice "LAUNCHING", then wait a bit in case there is a problem. Never launch towards someone nearby (they should be at least 100 feet away).

* Electric Plane Launching - if at all possible (wind conditions, etc.) launch towards the South-East (the bowl), away from the field and launch from an area near the edge of the tall grass. Don't launch in the pit area.

* Landing - before your approach, Yell out a notice "LANDING" to ensure others are aware.

* Avoid flying directly over the head of another pilot when at low altitude. Avoid flying at low altitude over the winch line. Do not fly low over the pits or parking area. This applies to electrics, multi-rotors and gliders.

* Glider Winch Line - if at all possible (wind conditions, etc.) run the winch North-South and along the West side of the field.

* Glider Landing Spots - assuming the winch line is running along the West side of the field, locate the landing tape on the East side (at least 50 feet from the winch line) and down the field away from the electric launch area. Do NOT land in the pit area. If a pop off forces an immediate landing, land in the tall grass off the West side of the field.

* Pilot Stations - Electric pilots should stand in the North-East corner (or optionally at the South-East corner) of the field along the tall grass line. Glider pilots should move past this area and down (to the South) to the landing tape area. Hand launch pilots should stand near the landing tapes.

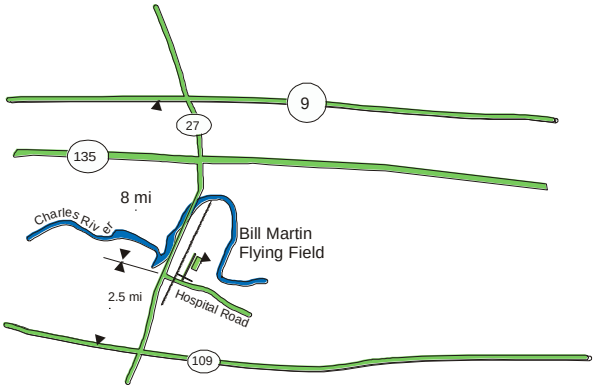
* Multi-rotors – Be aware the multi-rotors are more maneuverable than gliders and planes and may need to clear the way for a plane. A glider has the right of way as it is unpowered and may not be able to move out of the way of a multi-rotor. Coordinate your multi-rotor flights with planes.

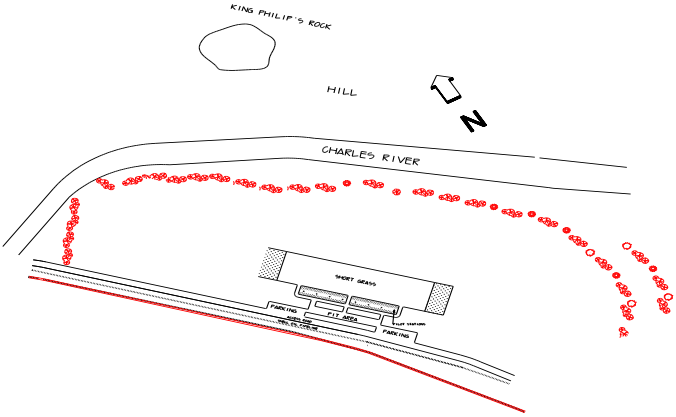
* Exceptions - when wind conditions or other causes make the standard layout impossible, the pilots should discuss and agree on an alternative layout. Arriving pilots need to be informed of the changes.

BILL MARTIN FLYING FIELD IN MEDFIELD

⇒ Power Flying (Internal combustion engines allowed)

⇒ Helicopters, Electrics and gliders also





The Bill Martin Field is a shared field operated jointly by CRRC and the Millis Model Aircraft Club (MMAC).

BILL MARTIN FIELD RULES

POWER FLYING HOURS: ***9:00 AM - Dusk, seven days a week.***

1. Gate must be CLOSED and the lock secured to the gate at all times while pilot(s) are on the field. This allows assess for emergency vehicles and keeps unauthorized vehicles from entering.
2. Gate must be CLOSED and locked when you leave the field. If someone has parked on the field and you must leave, DO NOT lock the vehicle in. Contact your club president and he will coordinate with police to have the vehicle removed and gate locked.
3. You must be a member of CRRC or MMAC to have keys to the gate. The lock is changed each winter (in late February or early March) and new keys are required each year.
4. All flyers must have active AMA membership and show I.D. if requested to do so.
5. Novice and student pilots will not fly their aircraft alone at the field until they have soloed in the presence of a club instructor.
6. No more than four aircraft (glow, gas or electric, including helicopters) may be flown at one time.
7. All non-glider pilots **MUST** use pilot stations when flying.
8. Pilots will stay off runway except during take off or to retrieve a stalled aircraft.
9. Pilots may not fly for more than 15 minutes when other pilots are waiting to fly.
10. All takeoffs and landings will be made along runway direction. Takeoffs or landings may not go directly across the runway.
11. After completing a flight, pilots must turn off engines and radios and carry their planes to the pit area.
12. Do not fly over the pit, parking area, or any area behind the pilot stations.
13. No pilot will taxi, take off, or land in the pit or parking areas.
14. Spectators must stay off runway at *ALL* times. Spectators must stay out of pit area unless invited by a club member.
15. No engine adjustments or repairs may be made on the runways.
16. In general, when the field is busy (more than 2 aircraft in the air) all aircraft including helicopters and electrics should follow an agreed upon racetrack flight pattern.
17. No internal combustion engine shall be started or flown before 9 AM. Quiet electrics and gliders may be flown before 9AM.

18. Club Safety coordinators of CRRC and/or MMAC are in charge while at the field.

19. The club is responsible for reporting incidents at the field to the field owner, State of MASS, using the incident reporting form. A copy of the form can be found in the storage shed and with the club safety coordinator. Contact a board member before sending in the incident report form so that CRRC and MMAC has an accurate record of the incident.

GENERAL SAFETY

1. No model aircraft may be flown in a dangerous or careless manner.

2. Any club member may request a safety inspection of any aircraft. If judged unsafe, the aircraft may not be flown until defects are corrected.

3. All pilots must range check their radio equipment before first flight of the day.

RIGHTS OF WAY

1. All model aircraft must give right of way to full-scale aircraft.

2. Aircraft with engine out has right of way when pilot declares "DEAD STICK". The pilot will do his best to land the aircraft in a prompt, safe manner.

3. Aircraft on final approach has right of way over aircraft waiting to take off.

4. A pilot retrieving his stalled aircraft on the runway has right of way over all aircraft. He must make his intentions known and proceed only when it is safe to do so. The stalled aircraft does not have right of way.

ANNOUNCED INTENTIONS

1. No unannounced high or low speed passes will be made over the runway at an altitude of less than fifty (50) feet. This includes landings and take-off. (For dead-stick landings see right of way.)

2. All spectators and flyers must be alerted of all maiden flights of both new and repaired aircraft.

3. Helicopter or fixed-wing hovering or any other 3-D maneuver over the runway shall be announced and shall not be performed without the approval of the other pilots flying at the time.

4. Un-sportsmanlike conduct and abusive language will not be allowed. Violators will be required to leave.

FREQUENCY CONTROL

1. All 72mhz transmitters must be kept in the impound area when not in use.

2. 72mhz Frequency pins must be attached to frequency board at ALL TIMES the 72mhz transmitter is on. No 72mhz transmitter may be turned on without its corresponding pin on the frequency board.

3. 72mhz transmitters may not be removed from impound unless frequency is clear, or to remove transmitter from the field.

4. Pilots on 72mhz must not occupy a frequency for more than fifteen (15) minutes if more than one transmitter is on that given frequency and the other pilot is waiting to fly.

5. When there are more than 4 pilots at the field, the 72mhz pin queue bar must be used. While waiting for your next flight, your pin is placed on the queue bar to the right of the other pins in the queue. Pins move from right to left. When your pin reaches the leftmost end of the queue bar, you are next up.

6. Pilots working on a plane should attach their pin to the frequency board with the pin reversed. This signifies that you are not in the air or at a pilot station but the frequency is in use.

7. There should be no more active pins (not reversed) on the frequency board than pilots flying.

8. 2.7Ghz transmitters are not requires to follow the frequency board rules since there is no frequency conflicts.

EQUIPMENT

1. All transmitters used at the field must be gold stickered or manufactured after 1992 and on aircraft frequencies.

2. All receivers must be on the 1991 AMA approved list of those meeting 20 kHz narrow band specifications (see Model Aviation)

3. All radios on Ham frequencies must be operated by LICENSED AMATEURS.

4. All aircraft will be labeled with owner's AMA number, name, address, and telephone number.

5. All internal combustion engines must be properly muffled to meet AMA standards.

GENERAL POLICIES

1. No alcoholic beverages or illegal drugs are allowed at the field.

2. No animals are allowed in the pit area, taxiway, or runway. Owners must restrain their animals.

3. Each member or guest is responsible for his/her own litter and must remove such when leaving the field.

4. New members of CRRC or MMAC are eligible for field keys but are not allowed to fly until they have been checked out by an approved member, or, in the case of a new pilot, soloed with an approved instructor.

5. Both CRRC and MMAC members have equal jurisdiction at the field and equal responsibilities. All pilots must obey the rulings of either club's safety coordinator.

6. VIOLATION OF SAFETY RULES OR FIELD REGULATIONS MAY RESULT IN LOSS OF CLUB MEMBERSHIP

IF THE TOTAL NUMBER OF RULES SEEM DAUNTING,
JUST REMEMBER THAT SAFETY + COURTESY = FUN

CRRC NEW POWER PLANE CHECKOUT LIST

AIRFRAME

- ❑ Visual check for airworthiness of construction, any loose glue joints
- ❑ Check incidence, alignment, washin/washout, any warps
- ❑ Landing gear properly placed and mounted
- ❑ Wheels rotate freely, wheel collars tight
- ❑ Control surfaces properly secured
- ❑ Control surface gaps as small as possible or sealed
- ❑ Wing center joint glued with epoxy and wrapped with fiberglass
- ❑ Linkages free from binding and slop
- ❑ Clevises properly fastened and secured, with clevis retainers
- ❑ Fore/aft balance correct
- ❑ Name, address, and AMA number on/in plane

ENGINE/MOTOR

- ❑ Engine/motor suitable size for airframe
- ❑ Engine/motor properly fastened to plane with proper thrust line
- ❑ Propeller proper size for engine/motor, undamaged
- ❑ Glow or gas fuel tank proper location with proper plumbing
- ❑ Motor battery secured in airframe
- ❑ Spinner or rounded prop nut
- ❑ Acceptable muffler for glow/gas engine
- ❑ Throttle travel from full to off

RADIO INSTALLATION

- ❑ Frequency flag with PROPER CHANNEL on transmitter
- ❑ Frequency pin created with Name, AMA number and channel number
- ❑ Receiver (and receiver battery pack) wrapped in foam and properly installed
- ❑ Servo grommets installed with correct orientation, not too tight, all screws in
- ❑ Servo arms screwed in
- ❑ Push rods secured and properly working
- ❑ Antenna properly mounted, fully extended

AFTER FREQUENCY IS CLEARED

- ❑ Proper control movement with no binding
- ❑ Control surfaces correspond to stick direction
- ❑ Control surfaces in neutral position with trims at NEUTRAL
- ❑ Radio range checked with engine/motor on at idle and at full throttle
- ❑ Engine/motor idle setting checked

GENERAL

- ❑ Frequency control understood, proper frequency pin made
- ❑ Field rules understood
- ❑ Safety issues understood

AIRCRAFT INSPECTED_____

PILOT/OWNER_____ AMA No._____

INSPECTOR _____ DATE_____

COMMENTS_____

CRRC POWER PLANE DAILY PREFLIGHT CHECKLIST

AIRFRAME

- ❑ Visual check for damage, wrinkled covering indicating hidden damage
- ❑ Check firewall by rocking engine/motor
- ❑ Landing gear straight and mounting hardware tight
- ❑ Wheels rotate freely, wheel collars tight
- ❑ Check hinges by tugging on all control surfaces
- ❑ Control horns and clevises secure
- ❑ Wing bolts tight
- ❑ Enough rubber bands, in good condition, not fuel soaked

ENGINE/MOTOR

- ❑ Engine/motor mounting hardware still there and tight
- ❑ Propeller undamaged with no nicks or chips, prop nut tight
- ❑ Spinner securely fasten and not cracked
- ❑ High speed not too lean (glow engines) and idle speed correct
- ❑ Muffler header and center screw tight
- ❑ Motor battery fully charged

RADIO

- ❑ Frequency is clear and pin is on frequency board
- ❑ If multiple flyers on same frequency, other flyer's transmitter off and in impound
- ❑ Transmitter and receiver batteries fully charged

AFTER FREQUENCY IS CLEARED

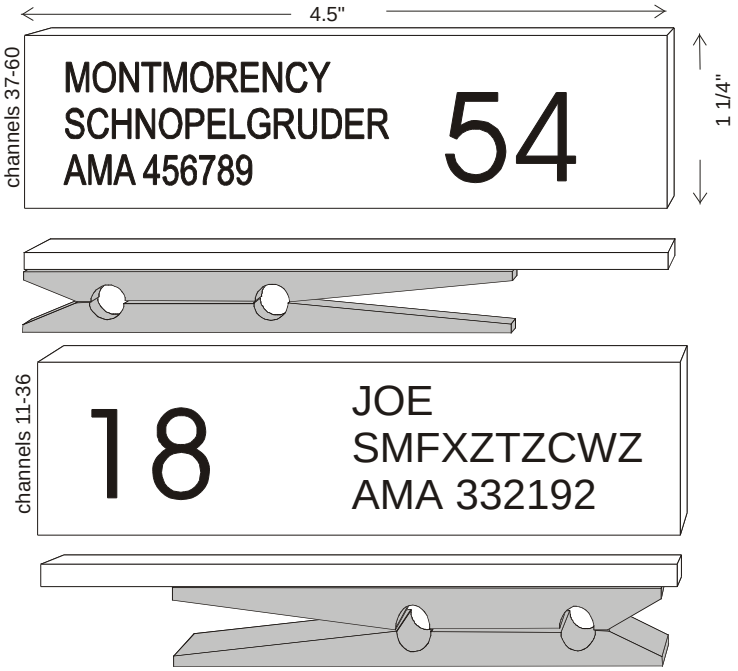
- ❑ Proper control movement with no binding
- ❑ Control surfaces correspond to stick direction
- ❑ Dual rates checked and in proper setting for takeoff
- ❑ Radio range checked with engine/motor off
- ❑ Plane restrained

72MHZ FREQUENCY CONTROL

CRRC PIN-BOARD

11	37
12	38
13	39
14	40
15	41
16	42
17	43
18	44
19	45
22	46
23	47
23	48
25	49
26	50
27	51
28	52
29	53
30	54
31	55
32	56
33	57
34	58
35	59
36	60
27M	6M

CRRC FREQUENCY PIN:



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