



Northeast Philadelphia Radio Control Club, Inc.

*"Dedicated to the community in the help and instruction  
(EDUCATIONAL AND CONSTRUCTIVE FUN)  
of Radio Controlled Miniature Aircraft."*

**Welcome Packet**

***WWW.NEPRCC.COM***



# Table of contents

R/C Web Sites .....	4
Foreward.....	5
History .....	6
<i>Directions</i> .....	7
Contact Telephone Numbers .....	8
Benjamin Rush Field Regulations .....	9
Field Regulations .....	10
Basic Pin Board Guidelines.....	11
Field Etiquette and Safety .....	12
By - Laws.....	13-15
Members Privileges .....	16
Aircraft Inspection Check List .....	17
Field MAP & GPS Cordinates.....	18
<i>NEPRCC Application</i> .....	20
Release From Liability.....	21
Academy of Aeronautics Safety Code ....	22-23
Radio Controlled Model Aircraft Operation ....	24-26
Utilizing “First Person View” Systems	
Radio Controlled Model Aircraft Operation	
Utilizing Failsafe, Stabilization and Autopilot Systems ...	27-29

## **R/C Web Sites**

[www.modelaircraft.org](http://www.modelaircraft.org)

[www.fly-ima.org](http://www.fly-ima.org)

[www.rcuniverse.com](http://www.rcuniverse.com)

[www.towerhobbies.com](http://www.towerhobbies.com)

[www.horizonhobby.com](http://www.horizonhobby.com)

[www.rcbatteryclinic.com](http://www.rcbatteryclinic.com)

[www.eHobbies.com](http://www.eHobbies.com)

[www.rcdirectory.com](http://www.rcdirectory.com)

## **Local Hobby Shops links**

- <http://www.recreationdepot.com>
- <http://www.hobbyhut.com>
- <http://www.ultimaterchobbyshop.com>



## **Local R/C Clubs**

[www.mywebpages.comcast.net/millcreekr](http://www.mywebpages.comcast.net/millcreekr)

[www.members.aol.com/pegasusflyclub/home.html](http://www.members.aol.com/pegasusflyclub/home.html)

[www.levittownaerobugs.org/Default.php](http://www.levittownaerobugs.org/Default.php)

<http://www.njpinebarons.com>

<http://buckscountync.org>

<http://www.skypirates.org>

<http://dvrc.rchomepage.com>

<http://www.vfss.org>

<http://www.NEPRCC.com>

## *F*oreword

This package was developed to inform the member and enhance his/her radio control hobby experience. The rules and regulations in this packet have been developed through several years of testing and adjustments; not only do they help protect each and every member, they give guidance on how the club should function. Indeed, if it were not for our flying field regulations, we would have an unsafe flying field. As always, good sense prevails when it comes to safety. Remember that safety is no accident.

So, as you become acclimated to the information enclosed in this packet, keep in mind that every member is a good will safety ambassador for the club. So, speak highly of your club. If it were not for past and present members, continually giving (volunteering) their time to improve the club, it would not be where it stands today. An award winning, first class, AMA Leader Club.

Some of the awards the club has earned;

- AMA Gold Leader  
Outstanding leadership in the modeling community
- AMA Five Year Leader Club Award (2001)
  
- AMA Best Newsletter  
Outstanding newsletter
- AMA Flight Instruction  
Outstanding flight instruction
- Dept. of Conservation and Natural Resource (DCNR) Conservation Award  
For outstanding effort in keeping Benjamin Rush State park clean

Hope you enjoy your modeling experience, and most of all, we can't spell club without "U" in it.

## *History*

The Northeast Philadelphia Radio Controlled Miniature Aircraft Club, Inc. (NEPRCC) was started in 1987, as a Non-Profit organization to help maintain the enjoyment of the constructive hobby of Model Aviation. NEPRCC is located in Benjamin Rush State Park, which is leased to them by the Pennsylvania Department of Conservation and Natural Resources. NEPRCC consists of a diversity of members who share a common interest of flying model aircraft.

Each NEPRCC member must maintain membership in the Academy of Model Aeronautics (AMA) to fly at NEPRCC field. AMA's membership across the country has over 267,000 members and carries insurance for its members. AMA also coordinates all of the national events involved with this hobby. NEPRCC is chartered and recognized as an AMA Leader Club. In 1999 and 2000 we achieved Gold Leader Status, the highest level a club can achieve.

As the only state park in Philadelphia, Benjamin Rush State Park is an excellent place for this passive recreation. By choosing a state park as our home, as many clubs do across the country, we are centrally located yet sufficiently away from residential and commercial buildings. This also insures us a permanent address, which is vital to not only our own club functions but also our numerous community service events.

The flying field and the surrounding area within the park are maintained by NEPRCC own monies collected through yearly membership fee. Member's dues and donations are spent to maintain one of the best flying fields in the East Coast. Membership fees also help support functions such as picnics for abused children (Bethanna House of Phila.), Cub Scouts, Ronald McDonald Camp, Shriners Hospital for Crippled Children, Adopt\_A\_School program, etc.

In the inception stages, the area of the park leased to NEPRCC needed tremendous clean up, due to the illegal dumping. The members banded together with its neighbor, The Friends of Poquessing Watershed of Phila, (an Environmental Group formed to protect our waterways and parks) to take on this task. The Poquessing group and NEPRCC installed gates and signs to keep the dumpers out. With this effort continuing to this day, the State Park and flying field is a clean and beautiful site.

Therefore since 1987, without financial help from any government body, NEPRCC has contributed over 100,000 dollars to the beautification of its field and surrounding area. This ongoing effort to help maintain this beautiful site allows NEPRCC to provide the community with a valuable resource.

The following pages will contain just about all your answers to most of your questions, If not, please ask. Hope you enjoy your experience here at one of the finest flying clubs on the East Coast.

## ***Directions***

### **Club Meeting Hall:**

From Roosevelt Blvd go East on Southampton Road pass through light (McNulty St.) 1/4 mile on right-hand side, 2900 Southampton rd. Turn right into driveway, drive to back of complex, do not park on grass, meeting held in auditorium. Time: 2nd Thursday of the month at 8:00 pm

### **Flying Field:**

The field is located in Benjamin Rush State Park, which is located in the far Northeast section of Philadelphia.

If North of Philadelphia; from the Pennsylvania Turnpike take Exit 28, and take Route 1(Roosevelt Blvd) South approximately 1.6 miles. As you enter Philadelphia, stay in the inner left lane, at light at Southampton Road make Left onto Southampton Road the next left is the entrance to Delaware Valley Veterans Home make left onto this road the next Left is the entrance to Benjamin Rush State Park, follow Park road way all the way around the park staying left at the Gardeners area at the last intersection stay right and follow this road all the way to the Flying field parking lot.

If South of Philadelphia; as you enter Philadelphia, takes Route 1(Roosevelt Blvd) North towards Neshaminy Mall. Stay in outer right lane at light at Southampton Road make Right onto Southampton Road the next left is the entrance to Delaware Valley Veterans Home make left onto this road the next Left is the entrance to Benjamin Rush State Park, follow Park road way all the way around the park staying left at the Gardeners area at the last intersection stay right and follow this road all the way to the Flying field parking lot.

Access from I-95; determine what direction to take on I-95. If South of Philadelphia, take I-95 North, North of Philadelphia, take I-95 South, Until, Woodhaven road exit, Take Woodhaven road exit West until you reach Route1 (Roosevelt Blvd) , takes Route 1(Roosevelt Blvd) North towards Neshaminy Mall. Stay in outer right lane at light at Southampton Road make Right onto Southampton Road the next left is the entrance to Delaware Valley Veterans Home make left onto this road the next Left is the entrance to Benjamin Rush State Park, follow Park road way all the way around the park staying left at the Gardeners area at the last intersection stay right and follow this road all the way to the Flying field parking lot.

### **Medical Facility:**

Exit the Park and make right to light at Southampton Road, make left and travel south on US route 1 Roosevelt Blvd. to Woodhaven Road East route 63 east, drive approx. 2 mi to Knights Road exit and take ramp to Knights Road, make right at 1<sup>st</sup> light and take Knights Road south for Approx. 2.5 Miles to Frankford Torresdale ARIA Hospital on right, emergency room entrance is just past Red lion road light. On the right at next light.

(Alternate)

Exit the Park and make right to light at Southampton Road, make left and travel south on US route 1 Roosevelt Blvd., travel south approx. 4.5 miles to Penny pack Circle (Rite-Aid on right hand side) go around circle as if to turn left at Holme Ave. Go one block north east on Holme Ave. and turn left into Nazareth Hospital. The Emergency entrance is straight head on right hand side.

## Contact Telephone Numbers

### In case of medical emergency, call 911

Tell operator we are located at **Benjamin Rush State Park** 2701 Southampton Road.  
Send someone to meet them at the park entrance at 2701 Southampton Road

### Emergency Response

Philadelphia Police (8 <sup>th</sup> District)	(911)	<a href="http://www.phillypolice.com/districts/8th">www.phillypolice.com/districts/8th</a>
N.E. Phila. Airport (Tower)	(215) -685-0300	
N.E. Phila. Airport (general Operations)	(215)-937-7968	<a href="http://www.airnav.com/airport/KPNE">www.airnav.com/airport/KPNE</a>
<b>*** Use in case of model aircraft flyaway only ***</b>		
Nazareth Hospital	(215) -335-6000	
Frankford Hospital	(215) -612-4000	<a href="http://www.ariahealth.org">www.ariahealth.org</a>
Fort Washington State Park Office Manager: Eric Ihlein	(215)-595-6162	mailto: <a href="mailto:fortwashingtonsp@pa.gov">fortwashingtonsp@pa.gov</a>
Benjamin Rush State Park	(215)-591-5250	mailto: <a href="mailto:fortwashingtonsp@pa.gov">fortwashingtonsp@pa.gov</a>
Delaware Valley Veterans Home	(215) 856-2700	<a href="http://www.dvvh.state.pa.us">www.dvvh.state.pa.us</a>

### Club Officials 2013

<b>President-</b>	Angelo Tata	(215) -953-0150	<a href="mailto:torchtata@msn.com">torchtata@msn.com</a>
	Cell Phone #	(215)-208-8317	
	Day Time	(215)-785-7237	<a href="mailto:atata@dow.com">atata@dow.com</a>
<b>Vice-President-</b>	Alexsey Lomov	(267)-346-2615	<a href="mailto:lonely0911@gmail.com">lonely0911@gmail.com</a>
<b>Secretary-</b>	Kenneth Lenke	(215) -637-0549	<a href="mailto:Kamkazee@aol.com">Kamkazee@aol.com</a>
	Cell Phone #	(215) -704-4123	
<b>Treasurer-</b>	Phillip McFadden	(215)-359-6159	<a href="mailto:Mortarblaster@comcat.net">Mortarblaster@comcat.net</a>
<b>Chief Flight-Intro Pilot Instructors</b>	Angelo Tata	(215) -853-0150	<a href="mailto:torchtata@msn.com">torchtata@msn.com</a>
	Alexsey Lomov	(267)-346-2615	<a href="mailto:lonely0911@gmail.com">lonely0911@gmail.com</a>
	Kenneth Lenke	(215) -637-0549	<a href="mailto:Kamkazee@aol.com">Kamkazee@aol.com</a>
	Kolmetzky Texaco	(215)-495-9669	<a href="mailto:iflyrc8@aol.com">iflyrc8@aol.com</a>
	Loglisci Greg	(267)-431-5574	<a href="mailto:wardog5555@comcast.net">wardog5555@comcast.net</a>
	Cooper Michael	(215)-620-1362	<a href="mailto:MC3634@Gmail.com">MC3634@Gmail.com</a>
<b>Field Instructors</b>	Joeseeph Gray	(856)-786-8295	<a href="mailto:Joearly@aol.com">Joearly@aol.com</a>
	Joseph Lavanga	(215)- 301-0504	<a href="mailto:Joslvng@aol.com">Joslvng@aol.com</a>
	Serge Brotsky	(267)- 818 0346	<a href="mailto:serge_brotsky1@verizon.net">serge_brotsky1@verizon.net</a>
	Jimmie Tate	(215) 828-1604	<a href="mailto:Spiccolli99@Gmail.com">Spiccolli99@Gmail.com</a>
<b>Safety Officers-</b>	Loglisci Greg	(267)-431-5574	<a href="mailto:wardog5555@comcast.net">wardog5555@comcast.net</a>
<b>Field Marshall-</b>	Jerry Blaszczyk	(215) -639-1765	<a href="mailto:KJLB1930@aol.com">KJLB1930@aol.com</a>



# **North East Philadelphia Radio Control Club**

## **Benjamin Rush State Park Radio Control Regulations**

1. Use of the Flying Field is limited to current members of the Academy of Model Aeronautics (AMA). Members and non-members of the Northeast Philadelphia Radio Control Club (NEPRCC) are welcome, provided they are current card carrying AMA members. All persons must have their AMA license for ID.
2. No one is permitted to fly when anyone is working in or on our sector of the park, or a park visitor could be placed in jeopardy while they are in the fly zone of the park.
3. No one is permitted to fly unless their current AMA or Club membership card is on the frequency board in the appropriate frequency slot. All persons flying must have their AMA license for identification.
4. Only (5) five aircraft are permitted to fly on the main field at any given time.
5. All pilots/students are to fly from one of the (5) five designated flight stations preferably with a spotter.
6. No one is permitted to occupy any flight station for more than 20-minutes. Time adjustments for flight stations, at an event, will be made by a field official, if necessary.
7. Intentionally flying over or near the following is prohibited: Outside the designated flight perimeter, including Veteran's Nursing Home Site, Community Gardens, Walking Paths , or behind the Flight Line.
8. All aircraft must be carried or restrained in the pit area. No taxiing in the pit area. All aircraft are permitted to taxi to the flight stations from the taxi way, where they are required to stop. After coming to a complete stop the pilot shall determine if the runway is clear and that there are no aircraft on final approach before proceeding onto runway for taking off or landing sound off loud and clear your intentions.
9. All aircraft returning to the pit area must stop at the flight station where all engines and radio gear must be turned off. No Taxiing permitted in the pits.
10. Low altitude, high speed passes over the runway is prohibited. There is a (400') four hundred foot high restriction mandated by FAA. due to the clubs proximity to full-scale aircraft in the area.
11. All aircraft are to be in compliance with the noise abatement criteria established by the AMA and current OSHA requirements. No model aircraft may be operated which has a noise/sound reading of 95 decibels or greater at nine feet from the aircraft.
12. All transmitters must be impounded with the switch in the off position and the antenna down when sharing a frequency (72 MHz and 50 MHz only). Do not turn on any radio gear until an approved AMA or Club card is placed on the frequency board. When returning. transmitters to the impound area, make sure the switch is off. Check that all transmitters in the impound area are off.
13. All flying must be done in accordance with the current AMA Safety Code. Flying is permitted when park opens (dawn) to park closing (dusk) or when park rangers ask you to leave. Please respect any orders given by park rangers.
14. The flying field can be closed for special events, following normal Bureau procedures. Such closures shall be posted in advance of the date of the event.

## **Model Aircraft Field Regulations**

1. Use of the Flying Field is limited to current members of the Academy of Model Aeronautics (AMA). Members and non-members of the Northeast Philadelphia Radio Control Club (NEPRCC) are welcome, provided they are current card carrying AMA members. All persons must have their AMA license for ID.
2. No one is permitted to fly when anyone is working in or on our sector of the park, or a park visitor could be placed in jeopardy while they are in the fly zone of the park.
3. No one is permitted to fly unless their current AMA or Club membership card is on the frequency board in the appropriate frequency slot. All persons flying must have their AMA license for identification.
4. Only (5) five aircraft are permitted to fly on the main field at any given time.
5. All pilots/students are to fly from one of the (5) five designated flight stations preferably with a spotter.
6. No one is permitted to occupy any flight station for more than 20-minutes. Time adjustments for flight stations, at an event, will be made by a field official, if necessary.
7. Intentionally flying over or near the following is prohibited: Outside the designated flight perimeter, including Veteran's Nursing Home Site, Community Gardens, Walking Paths , or behind the Flight Line.
8. All aircraft must be carried or restrained in the pit area. No taxiing in the pit area. All aircraft are permitted to taxi to the flight stations from the taxi way, where they are required to stop. After coming to a complete stop the pilot shall determine if the runway is clear and that there are no aircraft on final approach before proceeding onto runway for taking off or landing sound off loud and clear your intentions.
9. All aircraft returning to the pit area must stop at the flight station where all engines and radio gear must be turned off. No Taxiing permitted in the pits.
10. Low altitude, high speed passes over the runway is prohibited. There is a (400') four hundred foot high restriction mandated by FAA. due to the clubs proximity to full-scale aircraft in the area.
11. All aircraft are to be in compliance with the noise abatement criteria established by the AMA and current OSHA requirements. No model aircraft may be operated which has a noise/sound reading of 95 decibels or greater at nine feet from the aircraft.
12. All transmitters must be impounded with the switch in the off position and the antenna down when sharing a frequency (72 MHz and 50 MHz only). Do not turn on any radio gear until an approved AMA or Club card is placed on the frequency board. When returning. transmitters to the impound area, make sure the switch is off. Check that all transmitters in the impound area are off.
13. All flying must be done in accordance with the current AMA Safety Code. Flying is permitted when park opens (dawn) to park closing (dusk) or when park rangers ask you to leave. Please respect any orders given by park rangers.
14. The flying field can be closed for special events, following normal Bureau procedures. Such closures shall be posted in advance of the date of the event.

## *Basic Pin Board Guidelines*

These are basic guidelines for each of us to follow. They are here so that there will be no misunderstanding of how this pin board system should be used.

1. A club card or AMA card must be put in the frequency slot before turning on any transmitter.
2. You may keep your transmitter at your flight station as long as you are the only one on that channel. All 2.4 Ghz. transmitters shall use the 61-80 numbered 2.4 Ghz frequency slots.
3. Find out if anyone else is on your channel before you put your card up and let them know you share channels. Make sure to contact them when you impound your radio so they can take the slot.
4. You may leave your card in the slot as long as there is no one else on that channel. If someone is on the same channel, you must remove your card when you are done flying and impound your transmitter. Let them know you are finished and give them the opportunity to fly or work on their plane. Show a little courtesy if you must work on your plane. Do not monopolize a channel. Give the other guy a chance.
5. AT FUN FLIES ALL TRANSMITTERS MUST BE IMPOUNDED AND CARDS REMOVED FROM THE PIN BOARD! ALL 2.4 GHZ TRANSMITTERS MUST USE 61-80 NUMBERED FREQ SLOT FOR FLIGHT STATION CONTROL
6. Do not touch or move anyone else's card without their permission and knowledge.
7. Please have your channel number on your transmitter so that other pilots will know what channel you are on. These numbers came with your transmitter or a set can be purchased from 'Dubro'.
8. At fun flies the pin board will be managed by a club official and all pilots must register and sign in.
9. Any pilot flying on 2,4 Ghz. Spread Spectrum or F.A.S.T Systems must put a card on the 61-80 numbered 2.4 Ghz. slots for identification purposes.

## *Field Etiquette and Safety*

1. No one is permitted to fly without a valid AMA card on their person.
2. All AMA and Park regulations must be followed.
3. Pin board guidelines should be followed.
4. All planes should adhere to the AMA sound guidelines and carry identification on board.
5. A pattern should be established at the beginning of the flying session.  
This pattern should be followed when there is more than one plane in the air.
6. A pilot should look up and down the field and before taking off.  
This is to prevent taking off with someone on the field or in the process of landing.  
Sound of loud and clear when taking off, landing, dead stick or in trouble.
7. There should be no intentional flying behind the flight line, over gardens.
8. Keep your plane inside the tree lines. Do not fly over the gardens. or out of boundary limits.
9. There should be no flying above 400 feet as per AMA rules close to an airport.
10. No spectator's should go past the pit area safety fence. Spotters are permitted and encouraged.
11. Children must be restrained from running in the pits and on the field.
12. Please do not taxi your plane past the flight station fence after landing.
13. A pilot landing should be given the right of way unless an emergency is called on the field.
14. Students are encouraged to use a buddy box.
15. Airplane restraint use is encouraged if a stooge is not used please have person hold plane.
16. No flying should be done while someone is working on the field or enters the flight boundary.
17. Helicopters are welcome to use the field, but must fly in the same pattern as fixed wing aircraft when there are planes in the air. A hovering helicopter must yield to a plane landing.
18. Please check non members for a valid AMA card. They must have one with them and produce it when asked. You are putting all of us at financial risk if you don't have one and intentionally fly your model.
19. At fun fly's all pilots must sign in at the impound area and show Valid AMA card to officials there..
20. At fun fly's all transmitters must be impounded and tagged for identification , 2.4 ghz must sign in.
21. Above all be courteous to other fliers. Treat them as you would want to be treated.
22. Remember that this is supposed to be fun and safe sport flying.
23. Spotters are recommended and must be used at fun flies due to increased traffic in the air and on the ground.
24. When recovering airplanes lost in the fields you must walk to recover your aircraft, the use of vehicles on state property is strictly prohibited.

## **By - Laws**

### **ARTICLE I - NAME and PURPOSE**

- Section 1:** The name of the club shall be the North East Philadelphia Radio Control Club (NEPRCC).
- Section 2:** The purpose of the club shall be to promote the sport and hobby of building and flying radio controlled miniature model aircraft for the enjoyment and recreation of its members, and to provide and maintain a flying site for that purpose.
- Section 3:** The club shall be chartered annually with the Academy of Model Aeronautics (AMA) as Charter # 1632.

### **ARTICLE II - MEMBERSHIP**

- Section 1:** Membership in the club shall be open to any person who is a bona-fide member of the Academy of Model Aeronautics; and has a member of good standing endorsement; and has completed his/her three-month probationary (90 days) period.
- Section 2:** The club shall maintain an open membership. This policy does not apply to individuals that have had past or present action taken against them by a general membership vote, via **ARTICLE VI- SECTION 3 & 4** of these BY-LAWS
- Section 3:** Any person applying for membership in the NEPRCC must present written proof of his/her current membership in the AMA prior to being accepted. An initiation fee of \$25.00, together with appropriate dues must be submitted at the time of application to the club.
- Section 4:** Current members must pay yearly dues adjustable by the executive board, voted and accepted by membership, based on projected expenses of the current year. Payment should be made by the last day of the fiscal year.
- Section 5:** Any member who for any reason ceases to be a member of the AMA automatically ceases to be a member of the NEPRCC. Upon reinstatement of AMA, he or she will have to re-apply to NEPRCC with payment of full current yearly club dues. The one time initiation fee is excluded.
- Section 5-A:** Any past member in good standing re-applying to the club only pays current yearly dues.
- Section 6:** Anyone applying to NEPRCC under the age of Eighteen years old will be considered as Junior Member. Junior membership fee will be determined by the executive board, voted and accepted by the membership for the current year. Junior members must have a parent or guardian over eighteen years of age, as a current member of the NEPRCC, and this person is responsible for all actions made by the junior member.

### **ARTICLE III - OFFICERS**

- Section 1:** The officers of the club shall be: a President, a Vice President, a Secretary, and a Treasurer. All officers of the club must be members of the club.
- Section 2:** The President shall preside at all club meetings, shall have general and active management of the club, and shall ensure that these BY-LAWS and all Regulations of the club are enforced. The President shall be ex-officio a member of all club committees.
- Section 3:** The Vice President shall act in all cases for an "As-the-President" in the latter's absence or incapacity and shall become acting President for the balance of any term in which the office of president becomes vacant. He will perform other such duties as requested by the President.
- Section 4:** The Secretary shall maintain an accurate record of the name, address, and phone number, date of birth, AMA number, flight status, and frequencies used of each club member. This information will be kept in a membership listing maintained for the purpose of club business only. The membership listing will be printed once a year for the membership. The Secretary, or his designee, shall attend all meetings of the club and make and maintain an accurate record of the minutes of each meeting including a record of all votes on club business and motions. The Secretary, or his designee, shall give club members notice of the date, time and place of all meetings. The Secretary is responsible for keeping copies of all club records.

- Section 5:** The Treasurer shall have custody of the club funds and shall keep full and accurate accounts of all receipts and disbursements in the books and records belonging to the club. All moneys of the club shall be deposited in a saving account or money market account and a checking account of a federally insured bank to the credit of the club. All disbursements of club funds shall be made by check. The Treasurer, or his designee, shall make a statement of the account at the monthly meeting of club members. The Treasurer is the only officer to collect all dues and/or contribution to the club.
- Section 5-A:** The Treasurer will determine and set the fiscal year start and end.
- Section 5-B:** The NEPRCC Financial Books and Records will be reviewed every two years or when the Treasurer resigns from his office whichever comes first. The Term of Office for treasurer shall be two years.
- Section 5-C:** The Treasurer will deposit all monies in the bank within (5) business days after receiving them.
- Section 5-D:** Maintain the check register, keeping a current balance, and reconcile it against the monthly bank statement.
- Section 5-E:** Keep a list of all monies received (dues, initiation fees, etc.) showing who paid, date paid, amount and method of payment.
- Section 5-F:** Keep records of all disbursements, assigning each to the appropriate budget category and maintaining a current balance in each budget category.
- Section 5-G:** Publish a monthly Treasurer's Report, including:
- List of monies received that month
  - List of disbursements and bank fees
  - List of outstanding checks
  - Current checking account balance
  - Current balance in each budget category
- Section 5-H:** Bring the financial records to club meetings, where they will be available to interested club members.
- Section 6:** The President of the club shall be solely responsible for re-chartering the club each year with the Academy of Model Aeronautics in accordance with their renewal policies.
- Section 7:** Club officers shall not be compensated and will serve pro-bono.
- Section 8:** Club officers shall serve one year terms except the Treasurer, who will serve a two (2) year term beginning and ending on the first day of the current club charter date.
- Section 9:** Club officers shall be elected at the regular monthly meeting in March proceeding their term. Nominations for club officers shall be made from the floor at the regular January monthly meeting. Nominees must be present for the meeting in which they are nominated to accept. No nominee may be nominated that is not a member in good standing for the year of his term. The names of those members nominated shall be published in the notice for the February meeting.
- Section 10:** Voting for club officers will take place in March's meeting. Members, who have paid their dues for the incoming year, will be issued a ballot. Proxies shall not be allowed, no write-in nomination ballots. The Secretary will be responsible for creating and handing out numbered ballots with nominees' names on them. To insure only paid up members receive a ballot, the Secretary, at his or her option, will use a current membership list, or ask to see a current membership card. Junior members do not vote. The ballots will be collected and tallied at the meeting, and the results published.
- Section 11:** Vacancies in the office of Vice President, Secretary or Treasurer shall be filled for the balance of the term by appointment of a club member by the President with the approval of the members attending that club meeting following the vacancy.
- Section 12:** Those elected to the offices of President, Vice President, Secretary and Treasurer is expected, to the best of their ability, to attend all regularly scheduled monthly meetings of the membership of the Club. In the event, an elected officer is absent from a total of four (4) such monthly meetings within one calendar year or less, that office will be deemed vacant. At the monthly club meeting following the fourth absence, the vacancy will be filled pursuant to Sections 3 and 11 of this Article.

#### **ARTICLE IV - MEETINGS**

- Section 1:** The club shall meet regularly on the evening of the second Friday of each month at a convenient location to be designated by the President.
- Section 2:** The President, of the club membership, and/or club officers and committee chairperson, may call special meetings.
- Section 3:** Notice of each club membership meeting must be sent to each member by the club Secretary, or his designee, which may be in a club newsletter, E-mail notice, or Web Page notice.
- Section 4:** QUORUM - Official club business may not be conducted at any club meeting unless at least 20% of the current members attend.

#### **ARTICLE V - COMMITTEES**

- Section 1:** The club shall have the following committees and such other ad hoc committees as the President may appoint:
- (a) News Letter Committee
  - (b) Field Maintenance Committee
  - (c) Field Safety Committee
  - (d) Chief Instructor & Committee
  - (e) Public Relations Committee
  - (f) Events Committee
  - (g) Fund Raising Committee
  - (h) Web Page Committee
- Section 2:** The president shall appoint a Chairman for each committee and the Chairman of each committee may appoint club members to serve on each committee.

#### **ARTICLE VI - FIELD REGULATIONS**

- Section 1:** In addition to these by-laws the club has adopted Field & Safety Regulations governing flying site activities within the Benjamin Rush State Park, pertaining to safety, sound, hours of operation, members' behavior, etc.
- Section 2:** The beginning Field & Safety Regulations are attached hereto and made part hereof, and a copy of it and any amendments thereto, shall be maintained at the flying site.
- Section 3:** Violation of any Field Regulation will be cause for immediate suspension and/or expulsion from the club by action of the club membership upon due notice to the violator.
- Section 4:** Any field regulation affecting members' rights to participate in club activities must be properly moved and seconded at a regular club monthly meeting. Then advertised in the notice of the following regular club monthly meeting and approved by a majority of the members attending said meeting to be binding.

#### **ARTICLE VII - AMENDMENTS TO BY-LAWS**

- Section 1:** Any proposed amendment to these by-laws must be properly moved and seconded at a regular monthly club meeting and advertised in the notice of the following regular club monthly meeting and approved by a two-thirds vote of the members attending said meeting to be binding and effective.

## ***Privileges***

As a member of the Northeast Philadelphia Radio Control Club, Inc., in good standing you have the following privileges;

- ✓ *To participate in all club activities, unless not qualified or unsafe.*
- ✓ *To utilize all available club resources, such as flying facility, web page, tape library, and email, unless used in a detrimental fashion towards the club and/or club member.*
- ✓ *To receive all publications released by the club, e.g. bylaws, newsletter*
- ✓ *To have a clean and safe environment to fly model planes*
- ✓ *To have the opportunity to receive the best flight instruction available*
- ✓ *To help develop programs that ultimately will improve the club/hobby*
- ✓ *To have his/her opinion heard in an orderly fashion through open club forum in the general membership meeting.*
- ✓ *To have their point of view printed in the club newsletter, unless the article is defamatory in nature, at which time, the board of directors will review and inform the opposing individual(s) of such writing to allow that club member(s) time to develop a rebuttal letter to be printed at the same time (side by side)*
- ✓ *To have a grievance heard and resolved by the grievance officer in a timely fashion*

A member of the Northeast Philadelphia Radio Control Club, Inc. is expected to abide by the following;

- *To follow all rules and regulations of NEPRCC and Benjamin Rush State Park*
- *To keep your radio equipment and model in airworthy condition*
- *To point out unsafe acts or conditions caused by a member, to the safety officer or the board of directors, in a timely fashion*
- *Students are to make every effort to contact the chief flight instructors to utilize our instructional program to become a certified pilot*
- *To maintain the flying facility cleanliness by picking up your own trash, broken props, rubber bands, etc.*
- *To help out with yearly clean up of flying facility*
- *To represent your organization in a positive manner with the public and members*
- *To help promote the hobby through good will*
- *To keep the entrance gate closed at all times when using the facility*
- *To inform the board of directors when an individual is using the facility without displaying his or her current AMA card*
- *Support as many club functions as possible to help maintain a positive community outlook*
- *Most important, to HAVE FUN!*



# ***Aircraft Inspection Check List***

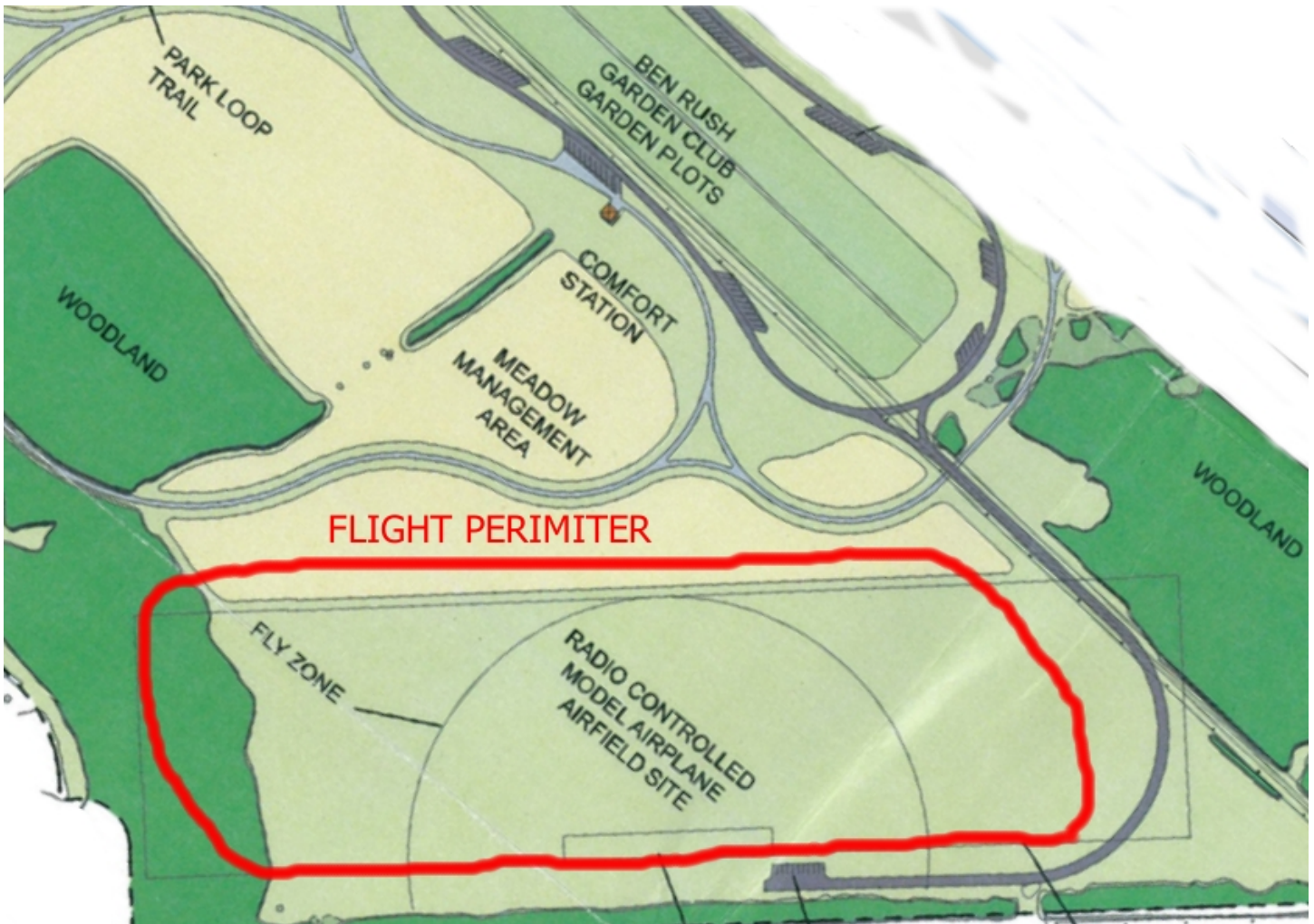
1. All aircraft should be checked for obvious construction and or structural flaws.
2. All control surfaces must be checked for proper hinging.
3. Pressure should be applied to the control surfaces to make sure that the surfaces can withstand the stress caused by flight.
4. Radio installation should be checked for proper mounting of servos and push rod connection use of quick connectors for major flight surface is prohibited steering and engine only allowed all others Z bend or captured links.
5. Servo direction should be checked along with throw for each servo.
6. Receiver must be wrapped in foam to reduce vibration. Identification of owner should be applied in this area as well showing Name, AMA number, address, and phone number.
7. Wing should be inspected for flaws the same as the fuselage with particular attention paid to the center section to make sure the wing are strong enough for flight.
8. Test wing mounting devices for strength, use minimum 12 rubber bands.
9. The Engine installation should be tested by applying pressure on the engine to insure that the engine won't loosen and fall out all screws must be used to bolt motors to mounts.
10. Assemble the airplane and check the center of gravity with the fuel tanks empty. If the C.G. is not correct, do not fly the airplane until it is corrected and retested.
11. Start up the engine; make sure the needle valve is set slightly rich so the engine does not stall on takeoff, to test this run engine with plane held nose up for 5 seconds.
12. Question the owner of the aircraft about the charging of the batteries. If there are any doubts about the batteries or their capacity, do not fly the aircraft until voltage checked and verified.
13. If the batteries are OK, range check the radio by lowering the transmitter antenna and walk away from the plane. If this test is OK then start the engine and taxi the plane to the far end corner of the field with the antenna down. If no problems are encountered, extend the antenna and fly. If flying 2.4 GHz please follow radios low signal test as stated in owner manual.
14. If all conditions are met, take off and get altitude to do whatever trimming is necessary. No strenuous maneuvers should be done with the plane during this 1<sup>st</sup> flight until landed and rechecked as sound aircraft..
15. Land the plane and do a visual test and then mechanically trim whatever is necessary.

## Field Perimeter Site Map

The map below shows our location and proximity within the Benjamin Rush State Park, the red outline shows our area of over flight within this area. Please remember that we are not allowed to exceed the maximum flight altitude of 400 feet as to our close proximity to N.E. Airport. All model aircraft must be below this height and yield below 200 feet of any full scale aircraft flying low or over our flight perimeter. Flying low or over pedestrians of the park is prohibited.

### Flying Site GPS Coordinates

N 40 deg. 06.851'  
W 074 deg. 58.395'





## *N.E.P.R.C.C. 2014 Membership Application*

**MEMBERSHIP APPLICATION:** *please print or type all information.*

Provide the following items; a copy of current AMA / IMAA card(s), a check or money order Payable to NEPRCC (No Cash Please), a self addressed stamped #10 envelope, and a copy of this signed completed application. New club members must present applications at a regular club meeting. Rejoining members please mail items to, NEPRCC. P.O. Box 52436, Philadelphia, PA 19115. Please keep a copy for your records.

**Applicant:** (Eighteen (18) Yrs. or older, Parent or Legal Guardian)

Last Name \_\_\_\_\_ First Name \_\_\_\_\_ MI \_\_\_\_\_

Street Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_

Home Phone \_\_\_\_\_ Cell Phone \_\_\_\_\_ DOB \_\_\_\_\_

AMA Number \_\_\_\_\_, IMAA Number \_\_\_\_\_, E-mail Address: \_\_\_\_\_

Emergency Contact / Phone # \_\_\_\_\_

**Junior Members:** (under the age of eighteen (18) added to AMA membership as family member.)

Name \_\_\_\_\_ DOB \_\_\_/\_\_\_/\_\_\_ AMA NO. \_\_\_\_\_

Name \_\_\_\_\_ DOB \_\_\_/\_\_\_/\_\_\_ AMA NO. \_\_\_\_\_

Have you flown R/C previously? YES / NO

Have you in the past or do you now presently belong to any other R/C clubs? YES / NO

If so, what clubs and how long? \_\_\_\_\_

Please list frequency's used. \_\_\_\_\_

NEPRCC Sponsor's name \_\_\_\_\_ AMA # \_\_\_\_\_

NEPRCC Sponsor's signature \_\_\_\_\_ Date: \_\_\_/\_\_\_/\_\_\_

<b>FEES:</b> New Member Initiation Fee (one time)	\$25.00
Annual Membership (Rejoining Past members)	<b>\$50.00</b>
Junior Membership (Parent or Guardian Must be a Member)	<u>\$ 0.00</u>
Total Amount due (payable to NEPRCC)	_____
	_____ Initials _____

**No prorating or refunds of Dues!**

Student pilots **MUST** complete a comprehensive flight training and safety program offered by NEPRCC and required by DCNR. By signing below, the applicant understands the National AMA safety code and will become familiar with NEPRCC Field Regulations and Bylaws. Applicant also acknowledges that membership is a privilege and is contingent upon compliance with the club's Bylaws and any associated documents. Please be advised that there is a 90 day probationary period before membership in the club is official, and all new applicants require sponsorship from a NEPRCC member in good standing. The club reserves the right to use any and all information on this form for official club business.

Applicant's Signature \_\_\_\_\_ Date: \_\_\_/\_\_\_/\_\_\_

***NORTHWESTERN WOODHAVEN CENTER***  
**2900 SOUTHAMPTON ROAD**  
**PHILADELPHIA, PA 19154**  
**215-671-5003**

Northeast Philadelphia Radio Control Club, in consideration of the permission by Northwestern Woodhaven Center Inc., (2900 Southampton Road, Philadelphia, PA. 19154) to share the use of the Auditorium on The second Thursday of each month at 7:30 P.M. from January 2014 thru December 2014.

I hereby release The Northwestern Corporation, The Northwestern Woodhaven, Inc., the Department of Public Welfare and the Commonwealth from any and all claims arising out of participation in the recreational activities at Woodhaven Center, 2900 Southampton Road, Philadelphia, Pennsylvania. The undersigned, intending to be legally bound, does hereby release and forever discharge The Northwestern Corporation, The Northwestern Woodhaven Center, Inc., the Commonwealth, and The Department of Public Welfare, its employees, officers, successors, heirs, executors and administrators, of actions and cause of action, suits debts, dues, accounts, bonds, covenants, contracts, agreements, judgments, claims and demands whatsoever in law or equity, including attorney's fees regarding such activity. I release The Northwestern Corporation, The Northwestern Woodhaven Center Inc., the Commonwealth and the Department of Public Welfare from claims arising out of any incidents involving personal injury to me including, but not limited to, injury in any way related to any recreational activity at Woodhaven Center which I have ever had, or which my heirs, executors, administrators, successors or assigns have ever had, prior to the date of this agreement.

*It is agreed and understood that permission to share the premises may be revoked, at the discretion of the Directors of Woodhaven Center with or without notice.*

---

Signature of Participant

---

Signature of Parent/Guardian if  
Participant is a Minor

---

Print Name

---

Date

---

Date

---

Witness

---

Witness

# ***Academy of Model Aeronautics National Model Aircraft Safety Code***

## **Effective January 1, 2014**

A. **GENERAL:** A model aircraft is a non-human-carrying aircraft capable of sustained flight in the atmosphere. 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 any additional rules specific to the flying site.

1. Model aircraft will not be flown:

- (a) In a careless or reckless manner.
- (b) At a location where model aircraft activities are prohibited.

2. Model aircraft pilots will:

- (a) Yield the right of way to all human-carrying aircraft.
- (b) See and avoid all aircraft and a spotter must be used when appropriate. (AMA Document #540-D.)
- (c) Not fly higher than approximately 400 feet above ground level within three (3) miles of an airport without notifying the airport operator.
- (d) Not interfere with operations and traffic patterns at any airport, heliport or seaplane base except where there is a mixed use agreement.
- (e) Not exceed a takeoff weight, including fuel, of 55 pounds unless in compliance with the AMA Large Model Airplane program. (AMA Document 520-A.)
- (f) Ensure the aircraft is identified with the name and address or AMA number of the owner on the inside or affixed to the outside of the model aircraft. (This does not apply to model aircraft flown indoors.)
- (g) Not operate aircraft with metal-blade propellers or with gaseous boosts except for helicopters operated under the provisions of AMA Document #555.
- (h) Not operate model aircraft while under the influence of alcohol or while using any drug that could adversely affect the pilot's ability to safely control the model.
- (i) Not operate model aircraft carrying pyrotechnic devices that explode or burn, or any device which propels a projectile or drops any object that creates a hazard to persons or property.

Exceptions:

- Free Flight fuses or devices that burn producing smoke and are securely attached to the model aircraft during flight.
- Rocket motors (using solid propellant) up to a G-series size may be used provided they remain attached to the model during flight. Model rockets may be flown in accordance with the National Model Rocketry Safety Code but may not be launched from model aircraft.
- Officially designated AMA Air Show Teams (AST) are authorized to use devices and practices as defined within the Team AMA Program Document. (AMA Document #718.)
- (j) Not operate a turbine-powered aircraft, unless in compliance with the AMA turbine regulations. (AMA Document #510-A.)

3. Model aircraft will not be flown in AMA sanctioned events, air shows or model demonstrations unless:

- (a) The aircraft, control system and pilot skills have successfully demonstrated all maneuvers intended or anticipated prior to the specific event.
- (b) An inexperienced pilot is assisted by an experienced pilot.

4. When and where required by rule, helmets must be properly worn and fastened. They must be OSHA, DOT, ANSI, SNELL or NOCSAE approved or comply with comparable standards.

## **B. RADIO CONTROL (RC)**

1. All pilots shall avoid flying directly over unprotected people, vessels, vehicles or structures and shall avoid endangerment of life and property of others.
2. A successful radio equipment ground-range check in accordance with manufacturer's recommendations will be completed before the first flight of a new or repaired model aircraft.
3. At all flying sites a safety line(s) must be established in front of which all flying takes place. (AMA Document #706.)
  - (a) Only personnel associated with flying the model aircraft are allowed at or in front of the safety line.
  - (b) At air shows or demonstrations, a straight safety line must be established.
  - (c) An area away from the safety line must be maintained for spectators.
  - (d) Intentional flying behind the safety line is prohibited.
4. RC model aircraft must use the radio-control frequencies currently allowed by the Federal Communications Commission (FCC). Only individuals properly licensed by the FCC are authorized to operate equipment on Amateur Band frequencies.
5. RC model aircraft will not knowingly operate within three (3) miles of any pre-existing flying site without a frequency-management agreement. (AMA Documents #922 and #923.)
6. With the exception of events flown under official AMA Competition Regulations, excluding takeoff and landing, no powered model may be flown outdoors closer than 25 feet to any individual, except for the pilot and the pilot's helper(s) located at the flightline.
7. Under no circumstances may a pilot or other person touch an outdoor model aircraft in flight while it is still under power, except to divert it from striking an individual.
8. RC night flying requires a lighting system providing the pilot with a clear view of the model's attitude and orientation at all times. Hand-held illumination systems are inadequate for night flying operations.
9. The pilot of an RC model aircraft shall:
  - (a) Maintain control during the entire flight, maintaining visual contact without enhancement other than by corrective lenses prescribed for the pilot.
  - (b) Fly using the assistance of a camera or First-Person View (FPV) only in accordance with the procedures outlined in AMA Document #550.
  - (c) Fly using the assistance of autopilot or stabilization system only in accordance with the procedures outlined in AMA Document #560.

## **C. FREE FLIGHT**

1. Must be at least 100 feet downwind of spectators and automobile parking when the model aircraft is launched.
2. Launch area must be clear of all individuals except mechanics, officials, and other fliers.
3. An effective device will be used to extinguish any fuse on the model aircraft after the fuse has completed its function.

## **D. CONTROL LINE**

1. The complete control system (including the safety thong where applicable) must have an inspection and pull test prior to flying.
2. The pull test will be in accordance with the current Competition Regulations for the applicable model aircraft category.
3. Model aircraft not fitting a specific category shall use those pull-test requirements as indicated for Control Line Precision Aerobatics.
4. The flying area must be clear of all utility wires or poles and a model aircraft will not be flown closer than 50 feet to any above-ground electric utility lines.
5. The flying area must be clear of all nonessential participants and spectators before the engine is started.

# Radio Controlled Model Aircraft Operation Utilizing “First Person View” Systems

## 1. DEFINITION OF TERMS:

Please refer to Page 5 section 7 which contains an alphabetical listing of the definitions of the terms in italics that are used in this document.

## 2. GENERAL:

*FPV* flying of radio control model aircraft by AMA members is allowed only for noncommercial purposes as a hobby/recreational and/or competition activity and must be conducted in accordance with AMA's current National Model Aircraft Safety Code and any additional rules specific to a flying site/location.

## 3. OPERATIONS – REQUIREMENTS – LIMITATIONS:

- a) *FPV novice pilots* undergoing training at low altitude must use a buddy-box system with an *FPV spotter*, or must go to a safer altitude if no buddy-box system is used.
- b) All *FPV* flights require an AMA *FPV pilot* to have an AMA *FPV spotter* next to him/her maintaining *VLOS* with the *FPV aircraft* throughout its flight.
- c) The *FPV pilot* must brief the *FPV spotter* on the *FPV spotter's* duties, communications and hand-over control procedures before *FPV flight*.
- d) The AMA *FPV spotter* must communicate with the *FPV pilot* to ensure the *FPV aircraft* remains within *VLOS*, warning the *FPV pilot* of approaching aircraft, and when avoidance techniques are necessary.
- e) During an *FPV* flight, the *FPV spotter* must be prepared to acquire the transmitter/control from the *FPV pilot* and assume *VLOS* control of the model aircraft at any time safe operation of the flight is in question.
- f) If an *FPV pilot* experiences a safety issue that does not appear to be a brief glitch, they must abandon *FPV* mode and fly *VLOS*.
- g) Before the initial *FPV* flight of an *FPV model aircraft* and/or after any changes or repairs to *essential flight systems*, the *FPV model aircraft* must have an *R/C test flight* by conventional *VLOS*.
- h) *FPV model aircraft* must use frequencies approved by the FCC for both the RC system and the wireless video system. Pilots must meet applicable FCC licensing requirements if they choose to operate the RC flight control system or the wireless video system on Amateur Band frequencies.
- i) AMA *FPV pilots* must first be capable of flying their *FPV* model aircraft manually before utilizing *FPV* flight.



#### **4. RANGE – ALTITUDE – WEIGHT – SPEED:**

**a)** One of the requirements in Federal Law (Public Law 112-95 Sec 336 (c) (2) February 14, 2012) for model aircraft to be excluded from FAA regulations is that model aircraft must be flown within VLOS of the operator.

**b)** Model aircraft flown using FPV must remain at or below 400 feet AGL when within 3 miles of an airport as specified in the AMA Safety Code.

**c)** Model aircraft flown FPV are limited to a weight (including fuel, batteries, and onboard FPV equipment) of 15lbs. and a speed of 70mph.

#### **5. RECOMMENDATIONS & INFORMATION:**

**a)** AMA FPV novice pilots should consider using a cockpit view flight simulator to become accustomed to FPV flight.

**b)** AMA FPV pilots should consider using a programmable autopilot (AMA Document #560) with a failsafe “return to launch” (RTL) feature that will maintain control of the aircraft in the event of signal loss.

**c)** When purchasing FPV operational systems, always try to select quality equipment, verify its compatibility, install components for interference rejection, and determine that signal range is adequate for maximum VLOS range.

#### **6. PRIVACY PROTECTION SAFEGUARDS:**

The use of imaging technology for aerial surveillance with radio control model aircraft having the capability of obtaining high-resolution photographs and/or video, or using any types of sensors, for the collection, retention, or dissemination of surveillance data information on individuals, homes, businesses, or property at locations where there is a reasonable expectation of privacy is strictly prohibited by the AMA unless written expressed permission is obtained from the individual property owners or managers.

#### **7. DEFINITIONS OF TERMS:**

**AMA FPV Pilot** is an AMA member who is capable of maintaining stable flight of a model aircraft within its intended flight envelope when flown FPV without losing control or having a collision.

**Buddy-Box System** is a system that has one transmitter operating as the master controller, while a second transmitter is linked/slaved to it allowing dual control of an aircraft. The operator of the master transmitter allows one or the other transmitter to control the aircraft through the use of a spring-loaded switch. The switch provides instantaneous transfer of control from one transmitter to the other. The buddy-box system is an efficient and effective means of achieving a position transfer of control from one pilot to another. Although this system is commonly used for training novice fliers, it is also useful in situations where an experienced pilot may have an increased likelihood of needing a second pilot's assistance in maintaining control of the aircraft. The use of the buddy-box may be helpful in assisting pilots with physical limitations, flying in congested environments, during times of reduced visibility, or anytime during FPV when a timely transfer of control may be beneficial.

**Essential Flight Systems** are any systems or components necessary to maintain stable flight within a model aircraft's flight envelope. (This includes primary radio control systems and any stabilization or gyros required to maintain stability and heading in certain types of model aircraft that would be uncontrollable/unstable without their use).

**First Person View (FPV)** refers to the operation of a radio controlled (R/C) model aircraft using an onboard camera's cockpit view to orient and control the aircraft.

**Flight Envelope** is defined as the range of airspeeds, attitudes, and flight maneuvers which a model aircraft can safely perform/operate for its intended use.

**FPV Aircraft** is an RC model aircraft equipped with a video transmitter to send realtime video images from an onboard camera to a ground based receiver for display on a pilot's video monitor/goggles. (*FPV model aircraft* types include: Fixed Wing, Rotary Wing, and Multi-Rotor Platforms).

**FPV Novice Pilot** is an AMA member learning to fly *FPV* utilizing a buddy-box system with an experienced AMA *RC pilot* operating the master transmitter and serving as the *FPV spotter*.

**FPV Spotter** is an experienced AMA *RC pilot* who has been briefed by the *FPV pilot* on the tasks, responsibilities and procedures involved in being a spotter; is capable and mature enough to perform the duties and is able to assume conventional *VLOS* control of the aircraft.

**Non-Essential Flight Systems** are any systems or components that are not necessary to maintain stable flight within the model aircraft's *flight envelope*. (This includes *autopilot* or *stabilization systems* that can be activated and deactivated in flight by the pilot without affecting stable flight).

**R/C Test Flight** requires an *AMA Pilot* to manually operate an R/C transmitter to control a model aircraft's flight path and determine if the aircraft is capable of maintaining stable flight within its *flight envelope*.

**Visual Line Of Sight (VLOS)** is the distance at which the pilot is able to maintain visual contact with the aircraft and determine its orientation without enhancements other than corrective lenses.

## **Academy of Model Aeronautics AMA Document #550**

"AMA Advanced Flight Systems Committee"

amaflightsystems@gmail.com

# Radio Controlled Model Aircraft Operation Utilizing Failsafe, Stabilization and Autopilot Systems

## 1. DEFINITION OF TERMS:

Please refer to Page 3, section 7 which contains an alphabetical listing of the definitions of the terms in italics that are used in this document.

## 2. GENERAL:

All model aircraft flights utilizing *stabilization* and *autopilot* control systems must be conducted in accordance with AMA's current National Model Aircraft Safety Code and any additional rules specific to a flying site/location.

## 3. OPERATIONS – REQUIREMENTS – LIMITATIONS:

**a)** AMA members flying radio controlled model aircraft equipped with flight *stabilization* and *autopilot* systems must maintain *VLOS* with the aircraft at all times including programmed autopilot waypoint flight.

**b)** *AMA Pilots* must be able to instantaneously deactivate programmed flight of *autopilot systems* at any time during flight and resume manual control of the model aircraft.

**c)** *AMA Pilots* must perform an *R/C Test Flight* of a model aircraft before activating a newly installed *autopilot* or *stabilization system* and/or after any repairs or replacement of model aircraft *essential flight systems*.

**d)** Model aircraft exceeding 15lbs and/or 70mph may only use an *autopilot* for a programmed "return to launch" (RTL) flight and not for programmed waypoint flying of a predetermined course.

### **e) STABILIZATION & AUTOPILOT SYSTEMS MAY BE USED FOR/TO:**

- Stabilization/automatically stabilize aircraft to level flight when control sticks are centered.
- Recovery/activate TRX switch to recover an out of control aircraft to level flight.
- Heading/activate TRX switch to hold a model aircraft's heading for precision flight path.
- Altitude/activate TRX switch to maintain fixed aircraft altitude while allowing directional control.
- Return GPS/activate TRX switch to return aircraft via GPS to launch point.
- Return FSS/failsafe activated from radio signal loss to return aircraft via GPS to launch point.
- Fixed circle/activate TRX switch to circle aircraft at point of activation at fixed altitude.
- Waypoint/activate TRX switch to initiate an autopilot programmed flight path via waypoints.
- Fencing/autopilot programmed to display site unique boundaries on video monitor/goggles.

#### **4. RANGE – ALTITUDE – WEIGHT – SPEED:**

- a)** One of the requirements in Federal Law (Public Law 112-95 Sec 336 (c) (2) February 14, 2012) for model aircraft to be excluded from FAA regulations is that model aircraft be flown within VLOS of the operator.
- b)** Model aircraft must be flown at or below 400 feet AGL when within 3 miles of an airport as stated in the AMA Safety Code.
- c)** Model aircraft utilizing an *autopilot* for waypoint flying are limited to a maximum weight (including fuel, batteries, and onboard *autopilot systems*) of 15lbs and a speed of 70mph.

#### **5. RECOMMENDATIONS & INFORMATION:**

- a)** If your radio system lacks *failsafe* capability, consider using programmable digital servos or auxiliary *failsafe* modules. In the event of a radio signal failure these components will activate desired safe servo settings or an *autopilot* for return to base/launch (RTL).
- b)** When using an *autopilot system* the “return to launch” (RTL) feature should be programmed to return the aircraft to a safe location and safely terminate the flight should manual control of the aircraft be lost. When using RTL, pay particular attention to the manufacturer’s throttle recommendations to prevent stalling.
- c)** The use of *stabilization systems* is recommended when flying FPV to improve flight stability and video quality.
- d)** Pilots usually choose to incorporate *stabilization* and *autopilot systems* for model aircraft flying to enhance flight performance, correct bad tendencies of the model aircraft, maintain stability in windy weather, establish precision heading holds for takeoffs/landings, flight training for novice pilots, create a steady flight platform for cameras, and generally just to make an airplane easier and safer to fly.
- e)** When purchasing *stabilization* and *autopilot systems*, always try to select quality equipment from reputable dealers, ensure for compatibility with other onboard systems, and install components according to manufacturers’ instructions.

#### **6. PRIVACY PROTECTION SAFEGUARDS:**

The use of imaging technology for aerial surveillance with radio control model aircraft having the capability of obtaining high-resolution photographs and/or video, or using any types of sensors, for the collection, retention, or dissemination of surveillance data or information on individuals, homes, businesses, or property at locations where there is a reasonable expectation of privacy is strictly prohibited by the AMA unless written expressed permission is obtained from the individual property owners or managers.

## 7. DEFINITIONS OF TERMS:

**AMA Pilot** is an AMA member who is capable of manually operating an R/C transmitter to control a model aircraft's flight path within its safe intended *flight envelope* without losing control or having a collision.

**Autopilot Systems** incorporate programmable flight *stabilization* with an altitude sensor and a GPS receiver for accurate positioning and to navigate/control a radio controlled model aircraft's flight path. Advanced systems offer software for entering navigable waypoints. The flight data waypoints may be saved to autopilot's/GPS memory for programmed flight.

**Essential Flight Systems** are any systems or components necessary to maintain stable flight within a model aircraft's *flight envelope*. (This includes primary R/C systems and any *stabilization* or gyros required to maintain stability and heading in certain types of model aircraft that would be uncontrollable/unstable without their use).

**Failsafe Systems** are designed to minimize or prevent damage and safely terminate a flight when a radio controlled model aircraft loses radio signal. Modern radio systems can be programmed to position servos to a desired control setting in the event of radio signal failure.

**First Person View (FPV)** refers to the operation of a radio controlled (R/C) model aircraft using an onboard camera's cockpit view to orient and control the aircraft. (AMA Document #550).

**Flight Envelope** is defined as the range of airspeeds, attitudes and flight maneuvers which a model aircraft can safely perform/operate for its intended use.

**Non-Essential Flight Systems** are any systems or components that are not necessary to maintain stable flight within the model aircraft's intended flight envelope. (This includes *autopilot* or *stabilization systems* that can be activated and deactivated in flight by the pilot without affecting manually controlled stable flight).

**R/C Test Flight** requires an AMA Pilot to manually operate an R/C transmitter to control a model aircraft's flight path and determine if the aircraft is capable of maintaining stable flight within its safe intended *flight envelope*.

**Stabilization Systems** are designed to maintain intended model aircraft flight attitudes. The pilot can install, program and/or activate a system to stabilize yaw, pitch, or roll or any one attitude or combination of attitudes. Systems are often based on rate/heading hold gyros or inertial motion sensors utilizing multi-axis gyros and accelerometers for attitude stabilization.

**Visual Line of Sight (VLOS)** is the distance at which the pilot is able to maintain visual contact with the aircraft and determine its orientation and attitude without enhancements other than corrective lenses.

**Academy of Model Aeronautics AMA Document #560**  
"AMA Advanced Flight Systems Committee"  
amaflightsystems@gmail.com