



Patuxent
Aeromodelers
Student
Handbook

Fly with the
best!!!

Second
Edition



2002

Student Information

Name: _____

Street Address: _____

City: _____ State: ___ Zip: _____

Home Phone #: _____

AMA Membership #: _____



Person to be contacted in case of an emergency:

Name: _____

Street Address: _____

City: _____ State: ___ Zip: _____

Phone #: _____

Introduction

Congratulations on your decision to enter the hobby of aeromodeling. The members of the Patuxent Aeromodelers are pleased to welcome you into their midst and are standing ready to assist you in your new adventure. We're confident that you will find the aeromodeling hobby exciting, challenging, and just plane fun (pun intended).

This handbook has been developed to help speed you on your way to becoming a soloed Radio Control (R/C) pilot. It is divided into two sections. The first section entitled "Reference Section" contains a variety of important information about the AMA Safety Code and Patuxent Aeromodelers Club. This section concerns the rules, maps and specific operating guidelines you need to know to safely and legally fly your airplane at a club airfield. The second section entitled "Pilot Qualification Section" is arranged in the format of qualification checklists. These checklists will help organize and document your efforts towards rapidly becoming a successful, soloed pilot.

Along with this handbook, you should have refer to the Beginner's Guide to R/C Flight by Bob McDaniel (club member). The booklet provides a complete treatment of R/C equipment basics important to your new undertaking. That's why we've included this as a reference. Check the club website, or contact Bob directly, to obtain a copy of his guide.

While the Patuxent Aeromodelers does not specifically endorse any particular manufacturer's product over another's frankly, we do recommend that you start off with a four channel **Futaba or JR FM** radio system. This is because most of our instructors possess a buddy box system which is only compatible with one or the other radio systems. Use of the buddy box system allows the instructor to "plug into" your radio system, enabling him to quickly regain control of your aircraft by simply releasing a "trainer" switch. This gives the instructor the freedom to allow you to fly your trainer well below the three-mistakes-high altitude. Down lower, you can see your aircraft better and see the effect your transmitter stick movements have on its attitude much better. This will greatly speed your learning process. Also, with the buddy box, your instructor can get you into the landing pattern a lot sooner than would otherwise be safely possible.

The basic philosophy of the Patuxent Aeromodelers towards new student pilots is simple: We are eager to assist student pilots in becoming safe, knowledgeable, responsible, soloed pilots in a timely manner. We have come to realize that most of the folks involved in the aeromodeling hobby are very independent individuals. We're also sure that you will soon find that we are a group, composed of very friendly and independent individuals; folks who are ready, willing and able to assist you in selecting, building and learning to fly your first aircraft.

However, we place the burden of responsibility squarely on your shoulders for seeking out, learning, and doing as much as you can on your own. Your progress in becoming a soloed pilot is tied to your own independent motivation and abilities. Learning to fly R/C is primarily a matter of developing the ability to “see” the aircraft and “respond”. To learn quickly requires that the student concentrate. This means an alert, conscious effort, exerted repeatedly, in as short of time span as possible. The secret is to fly often and think.

So seek us out. Just ask, and we’ll be there along the way to advise and help. When your ready for the assistance of a flight instructor, contact instructors is contained in the most recent issue of the club newsletter or via our web site (www.paxaero.com). Be sure and bring this handbook with you to the field so your progress may be documented.

Again, welcome aboard. Come join us in the air!

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Reference Section

Effective January 1, 2002
**2002 OFFICIAL AMA NATIONAL MODEL AIR-
CRAFT SAFETY CODE**

*Model Flying MUST be in accordance with this Code
in order for AMA Liability Protection to apply.*

GENERAL

- 1) I will not fly my model aircraft in sanctioned events, air shows, or model flying demonstrations until it has been proven to be airworthy by having been previously, successfully flight tested.
- 2) I will not fly my model higher than approximately 400 feet within 3 miles of an airport without notifying the airport operator. I will give right-of-way and avoid flying in the proximity of full-scale aircraft. Where necessary, an observer shall be utilized to supervise flying to avoid having models fly in the proximity of full-scale aircraft.
- 3) Where established, I will abide by the safety rules for the flying site I use, and I will not willfully and deliberately fly my models in a careless, reckless and/or dangerous manner.
- 4) At all flying sites a straight or curved line (s) must be established in front of which all flying takes place with the other side for spectators. Only personnel involved with flying the aircraft are allowed in front of the flight line. Flying over the spectator side of the line is prohibited, unless beyond the control of the pilot (s). In any case, the maximum permissible takeoff weight of the models with fuel is 55 pounds.
- 5) At air shows or model flying demonstrations a single straight line must be established, one side of which is for flying, with the other side for spectators. Only those persons accredited by the contest director or other appropriate official as necessary for flight operations or as having duties or functions relating to the conduct of the show or demonstration are to be permitted on the flying side of the line. The only exceptions which may be permitted to the single straight line requirements, under special circumstances involving consideration of site conditions and model size, weight, speed, and power, must be jointly approved by the AMA President and the Executive Director.
- 6) Under all circumstances, if my model weighs over 20 pounds, I will fly it in accordance with paragraph 5 of this section of the AMA Safety Code.
- 7) I will not fly my model unless it is identified with my name and address or AMA number, on or in the model. Note: This does not apply to models while being flown indoors.
- 8) I will not operate models with metal-bladed propellers or with gaseous boosts, in which gases other than air enter their internal combustion engine (s); nor will I operate models with extremely hazardous fuels such as those containing tetranitromethane or hydrazine.
- 9) I will not operate models with pyrotechnics (any device that explodes, burns, or propels a projectile of any kind) including, but not limited to, rockets, explosive bombs dropped from models, smoke bombs, all explosive gases (such

as hydrogen filled balloons), ground mounted devices launching a projectile. The only exceptions permitted are rockets flown in accordance with the National Model Rocketry Safety Code or those permanently attached (as per JATO use); also those items authorized for Air Show Team use as defined by AST Advisory Committee (document available from AMA HQ). In any case, models using rocket motors as a primary means of propulsion are limited to a maximum weight of 3.3 pounds and a G series motor. Note: A model aircraft is defined as an aircraft with or without engine, not able to carry a human being.

- 10) I will not consume alcoholic beverages prior to, nor during, participation in any model operations.

RADIO CONTROL

- 1) I will have completed a successful radio equipment ground range check before the first flight of a new or repaired model.
- 2) I will not fly my model aircraft in the presence of spectators until I become a qualified flier, unless assisted by an experienced helper.
- 3) I will perform my initial turn after takeoff away from the pit or spectator areas, and I will not thereafter fly over pit or spectator areas, unless beyond my control.
- 4) I will operate my model using only radio control frequencies currently allowed by the Federal Communications Commission. (Only properly licensed Amateurs are authorized to operate equipment on Amateur Band frequencies.)
- 5) Separation of less than three miles between flying sites is only acceptable if testing has been accomplished to determine that no interference potential exists or a frequency sharing arrangement between the clubs and/or individuals involved is developed. Written confirmation of either of these two alternatives, signed by a club officer of both clubs, or individual AMA members from both clubs shall be provided to AMA Headquarters.
- 6) For Combat, distance between flight line and spectator line will be 500 feet per cubic inch of engine displacement. (Example: .40 engine = 200 feet.)
Organized RC Racing Event
- 7) An RC racing event, whether or not an AMA Rule Book event, is one in which model aircraft compete in flight over a prescribed course with the objective of finishing the course faster to determine the winner.
 - A. In every organized racing event in which contestants, callers and officials are on the course:
 1. All officials, callers and contestants must properly wear helmets which are OSHA, DOT, ANSI, SNELL or NOCSAE approved or comparable standard while on the race course.
 2. All officials will be off the course except for the starter and their assistant.
 3. "On the course" is defined to mean any area beyond the pilot/staging area where actual flying takes place.
 - B. I will not fly my model aircraft in any organized racing event which does not comply with paragraph A above or which allows models over 20 pounds unless that competition event is AMA sanctioned.
 - C. Distance from the pylon to the nearest spectator (line) will be in accordance with the current Competition Regulations under the RC Pylon Racing section for the specific event pending two or

three pylon course layout.

FREE FLIGHT

- 1) I will not launch my model aircraft unless at least 100 feet downwind of spectators and automobile parking.
- 2) I will not fly my model unless the launch area is clear of all persons except my mechanic and officials.
- 3) I will employ the use of an adequate device in flight to extinguish any fuses on the model after it has completed its function.

CONTROL LINE

- 1) I will subject my complete control system (including safety thong, where applicable) to an inspection and pull test prior to flying. Pull test will be in accordance with the current Competition Regulations for applicable model category. Models not fitting a specific category as detailed, shall use those pull test requirements for Control Line Precision Aerobatics.
- 2) I will assure that my flying area is safely clear of all utility wires or poles.
- 3) I will assure that my flying area is safely clear of all non-essential participants and spectators before permitting my engine to be started. 4) I will not fly a model closer than 50 feet to any electrical power line.

GAS TURBINE

- 1) I will not operate any turbo jet engine (axial or centrifugal flow) unless I have obtained a special waiver for such specific operations.
- 2) I will fly my model in compliance with all requirements specified in AMA Safety Regulations for Model Aircraft Gas Turbines, Document Number 513*, at all times.

GIANT SCALE RACING

- 1) I will fly my model in compliance with all requirements specified in AMA Required Safety Standards for Giant Scale Racing, Document Number 535*, at all times.

Separate Code (s) available from AMA Headquarters for boats, cars, and rockets.
ACADEMY OF MODEL AERONAUTICS, 5161 EAST MEMORIAL DRIVE,
MUNCIE, INDIANA 47302-9252

* Document Numbers refer to the AMA Web site Document Number

**THE FOLLOWING IS PROVIDED FOR
REFERENCE ONLY. THE OFFICAL
CONSTITUTION CAN BE FOUND ON
THE CLUB WEB SITE**

Patuxent Aeromodelers Constitution

ARTICLE I - PURPOSE AND NAME

SECTION 1

The name of this club shall be:
"PATUXENT AEROMODELERS".

SECTION 2

The **PATUXENT AEROMODELERS** is formed to foster and advance the operation of radio controlled model aircraft in a setting where informality and safety of operations prevail. The purpose of this club is to promote the building, study, engineering, and flying of all types of model aircraft; to establish an organization dedicated to the encouragement of aeromodeling interests to individuals of all ages; and to promote safety and responsible operation of flying model aircraft.

ARTICLE 2 – MEMBERSHIP

SECTION 1

Membership in the **PATUXENT AEROMODELERS** shall be open to all military, military dependents, base employed civilians, base employee's dependents, and authorized civilians. Any individual who indicates an interest in model aircraft or in furthering the objectives of the club may apply for membership. Membership shall not be limited because of sex, race, age, creed, color, religious affiliation, mental or physical handicap, national origin, ancestry or marital status.

SECTION 2

Membership shall be divided into the following categories:

A) Regular Members are those members, nineteen years of age or older as

of July 1st of the year of application for membership. They shall have full voting privileges, be eligible to hold any club office, and be eligible to serve as committee members.

B) Family Members are those members consisting of one Regular Member and all those that reside in the same household as the Regular Member. The Regular Member and all Family Members shall constitute a Family Membership.

C) Junior Members are those members who have not attained their nineteenth birthday by July 1 of the year of application for membership. They will not be eligible to hold club office, but shall have full voting privileges and be able to serve as committee members.

D) Associate Members are those members of any age who wish to participate in the sport of aeromodeling and further the objectives of the **PATUXENT AEROMODELERS**, but do not wish to engage in actual flying operations. They will not be eligible to hold club office, or hold voting privileges, but shall be eligible to serve as committee members. No more than one quarter of the total club membership shall be Associate Members. An associate member may change their status to full membership at any time by paying the difference in membership dues.

E) Officer Members are those members elected by simple majority to serve in an office of the Patuxent Aeromodelers for the term of one year.

SECTION 3

Club membership ends each year on December 31, regardless of the date a membership application is accepted. Renewal of membership shall be at the full current rate regardless of date of renewal, and shall be due at the first regularly scheduled meeting of the new year. If a member has not renewed by the end of the first scheduled meeting, their newsletter will be withheld and their membership considered no longer valid. Dues for new members, including previous members who have allowed their membership to lapse, shall be assessed at the same rate as for membership renewal plus an initiation fee. For members applying after September 1, dues will be assessed at 1/3 the annual rate for the membership category being applied for plus the full initiation fee.

SECTION 4

Membership in the club shall be by application and approved by a club officer.

SECTION 5

Termination of membership for any reason other than resignation shall require the approval of two-thirds of the members present at a regularly scheduled meeting of the **PATUXENT AEROMODELERS**, and in general will follow the procedures set forth in **ARTICLE V** of the **BY-LAWS OF THE ACADEMY OF MODEL AERONAUTICS, INC.** Notice of any such intended action shall be published in the newsletter prior to that meeting. Any member who is expelled from membership may be reinstated to membership only by a two-thirds approval of members present at a regularly scheduled club meeting.

SECTION 6

By reasons of club insurance and liability coverage, and provisions stipulated in the club land lease with the State of Maryland, it is required that all members of the **PATUXENT AEROMODELERS** who engage in actual flight operations, be members in good standing of the **ACADEMY OF MODEL AERONAUTICS**. This requirement is not intended to prevent or discourage any qualified member from participating or assisting in the conduct or judging of any event or contest.

ARTICLE III - OFFICERS

SECTION 1

The Officers of this organization shall consist of a President, a Vice President, a Secretary, a Treasurer, a Safety Officer, and a Newsletter Editor.

SECTION 2

All Officers shall be elected by ballot, and shall hold office for a period of one year. In the case of filling a vacated office, he shall hold office for the remainder of the period, until the next scheduled election.

SECTION 3

A majority of a quorum of votes shall be necessary for the election of any Officer.

SECTION 4

Vacancies in any office shall be filled by special election.

SECTION 5

A term limit of two years shall exist for all club officers. Waiver

of this term limit may be approved on a case by case basis by a two-thirds vote of the members present at a regularly scheduled club meeting.

SECTION 6

Any Officer of the club may be impeached and removed from office for good cause. Such action shall require the approval of two-thirds of the members present at a regularly scheduled meeting of the **PATUX-ENT AEROMODELERS**. Notice of any such action shall be published in the newsletter prior to that meeting.

ARTICLE IV - A QUORUM

SECTION 1

Three officers and fifteen members, or 20% of the total club membership, whichever is less, shall constitute a quorum. A quorum must be present before an official club vote can be taken.

ARTICLE V - FINANCIAL RESPONSIBILITY

SECTION 1

The club shall be self-supporting from membership dues and other fund raising activities.

SECTION 2

As a special interest group, no financial support from any military or governmental organization will be solicited.

SECTION 3

In the event of the liquidation of this club, priority shall first be given to paying off all debts incurred by this club, after which all remaining funds will be disposed of as approved by a two-thirds vote of the members present at a regularly scheduled or special club meeting.

ARTICLE VI – MEETINGS

SECTION 1

Regular meetings of the **PATUXENT AEROMODELERS** shall be held on the first Thursday of each month. This date may be altered, as directed by the President, to avoid conflicts and ensure maximum opportunity for the membership to attend.

SECTION 2

Special meetings may be called at anytime by the President or, in his absence, by the Vice President.

ARTICLE VII - AUTHORITY IN PARLIAMENTARY LAW

SECTION 1

This organization shall be governed by the rules of parliamentary law as set forth in "Robert's Rules of Order".

ARTICLE VIII – AMENDMENTS

SECTION 1

This constitution may be amended at any regular meeting, provided that the amendment shall have been submitted at the previous regular meeting and published prior to the meeting at which it will be voted upon.

SECTION 2

Adoption of an amendment shall require approval of two-thirds of the members present at a regularly scheduled meeting of the club.

Revised February 7th, 2002

**THE FOLLOWING IS PROVIDED FOR
REFERENCE ONLY. THE OFFICAL
CLUB BYLAWS CAN BE FOUND ON THE
CLUB WEB SITE**

Patuxent Aeromodelers Bylaws

ARTICLE I – DUES

SECTION 1

Dues and initiation fee will be assessed based on approval of two-thirds of the members present at a regularly scheduled club meeting.

SECTION 2

The amount of the membership dues shall be reviewed on an annual basis and adjusted as required to meet the financial needs of the club.

SECTION 3

Annual dues shall be divided into the following categories and assessed as follows:

- A) Regular Member.....Full current rate.
- B) Family Membership.....1 1/2 (one and one half) the current Regular Member rate.
- C) Junior Member.....1/2 (one half) the current Regular Member rate.
- D) Associate Member.....\$5.00.
- E) Officer Members.....Annual membership dues are waived for elected Officers. However, should an elected Officer also have a Family Membership, the Officer/Family Membership shall be 1/2 the Regular Membership rate.

ARTICLE II - MEMBERSHIP IDENTIFICATION

SECTION 1

A membership card shall be issued to all members upon the acceptance of their application. This card will be dated to expire at the end of each calendar year. Proof of membership must be in hand to fly at Helwig Field in accordance with club rules and provisions of the land lease with the State of Maryland.

SECTION 2

Club insignias or sew on patches can be provided from the club or Academy of Model Aeronautics to all members at their own expense. Members are encouraged to purchase and conspicuously display these.

ARTICLE III - DUTIES OF THE OFFICERS

SECTION 1

The President shall be responsible to the membership for the enforcement of all provisions of the Constitution, By-Laws, and other officially promulgated rules, regulations, directives, and guidelines of the club, and for fostering its purposes and objectives. He shall conduct the day-to-day business of the club subject to the advice, control and approval of the membership. The President shall preside at all meetings that he is present at. He shall appoint the chairman of all committees, standing and special. He shall not have any vote on any matter brought before the membership, except to resolve a tie vote. He shall also be responsible for club coordination with the Commanding Officer, NAS Patuxent River, CO/XO NESEA or his representative.

SECTION 2

The Vice President shall be the chairman of the Committee on Administration, Public Relations, and Recreational Activities. In the event of the absence, disability, or inability of the President to perform the duties of that office, the Vice President shall be responsible for executing all of the duties of the President until the President can resume those duties, or a new President is elected by the membership.

SECTION 3

The Secretary shall keep an accurate record all meetings, attend to all correspondence given to him, and take care of materials to be used by the club. Minutes from club meetings shall be prepared and provided to the Newsletter Editor for publication in the monthly newsletter. The Secretary shall also maintain a historical file of all significant club correspondence, publicity, and previous newsletters.

SECTION 4

The Treasurer shall keep an up-to-date membership list, and keep a faithful account of all receipts and disbursements. He shall keep his books up-to-date and be ready to report at any time. A financial statement shall be prepared on a monthly basis and provided to the Newsletter Editor

for publication in the monthly newsletter.

SECTION 5

The Safety Officer will be responsible for the safe operation of all flight activities and ensure that all model flying is in accordance with Article VIII, Section 1 of these By-Laws. He shall serve as chairman of the Committee on Safety. He shall keep a current copy of the field regulations and safety rules as defined by the club membership. The Safety Officer shall have final authority to enforce all safety regulations when present and in his absence the responsibility will be transferred to the Contest Director (CD).

SECTION 6

The Newsletter Editor will be responsible for compiling information from the various club officers and membership for publication in the monthly newsletter. The newsletter shall be used to foster the club purpose. The Newsletter Editor shall publish the monthly newsletter and have full authority concerning its contents.

ARTICLE IV - COMMITTEES

SECTION 1

When warranted, there shall be three standing committees:

- 1) Committee on Administration, Public Relations, and Recreational Activities.
- 2) Committee on Safety.
- 3) Committee on Training.

SECTION 2

The Committee on Administration, Public Relations and Recreational Activities shall attend to all matters concerning publicity, awards, contests and flight demonstrations.

SECTION 3

The Committee on Safety shall attend to all matters regarding compliance with safety standards set forth by the club, NAS regulations and Academy of Model Aeronautics regulations.

SECTION 4

The Committee on Training shall attend to all matters relative to the proper instruction to those desiring assistance. This Committee shall from time to time be called on to deliver a technical presentation to the membership. Members of this Committee will be composed of the designated club instructors. The Committee on Training shall be responsible for developing and maintaining a standard approach to training new pilots and approval of all new club instructors.

ARTICLE V - ORDER OF BUSINESS

SECTION 1

The order of business for all regular meetings shall be as follows:

- A) Call to order
- B) Reading of minutes
- C) Report of treasurer
- D) Committee Reports
- E) Unfinished business
- F) New business
- G) Programs
- H) Adjournment

ARTICLE VI - FINANCE

SECTION 1

A checking account will be maintained in the club name. The Treasurer shall be responsible for payment of all approved obligations incurred by the club and held accountable for all club funds. The signature of the Treasurer shall be required to validate all checks. In his absence the signature of the President shall be required to validate the check.

SECTION 2

All unbudgeted expenditures of club funds exceeding \$50.00 shall require the approval of two-thirds of the members present at a regularly scheduled club meeting. The Treasurer is authorized to commit to budgeted expenditures up to, but not exceeding, the annual budget amount approved by the club members.

SECTION 3

The President shall appoint an audit board on an annual basis to conduct an audit of the club's account. The board shall consist of at least one elected officer and one member at large. This audit should be con-

ducted prior to the first scheduled meeting of each year and the results reported to the membership at that meeting. Publication of a financial report in the monthly newsletter is considered a sufficient substitute for the annual audit of the club's account.

ARTICLE VII - MONTHLY NEWSLETTER

SECTION 1

A newsletter shall be published on a monthly basis and one copy provided to each membership household.

ARTICLE VIII - MODEL AIRCRAFT OPERATIONS

SECTION 1

One of the purposes of this club is to provide safe, enjoyable group field activities for the membership and their families. Model aircraft operation, as with many other hobbies, requires a certain amount of control to ensure safe operation. Therefore, adherence to the following rules is mandatory for all members:

- A) All model flying shall conform to all current and standing NAS, NESEA, and MWR instructions when using the NAS Patuxent River or NESEA facilities.
- B) All model aircraft flying shall conform to all Academy of Model Aeronautics and field regulations approved by the membership and on file with the Safety Officer.

Revised February 7th, 2002

Field Rules

The objective is to extend the privilege of enjoying the aeromodeling hobby at the Patuxent Aeromodelers club fields to all members and authorized requests, with maximum emphasis on safety of operations. While this guide sets forth club rules for this objective, nothing herein should overrule common sense, personal responsibility and courtesy.

GENERAL ITEMS:

1. All model aircraft operations shall be in accordance with the Official Academy of Model Aeronautics (AMA) Safety Code and these field rules.
2. All pilots shall be current members of the Academy of Model Aeronautics (AMA) and members in good standing of the Patuxent Aeromodelers club fields. Membership and AMA cards must be on hand for verification when flying at club fields. Pilots visiting from outside the local geographical area must be current AMA members but are not required to be a member of the Patuxent Aeromodelers in order to engage in flight operations.
3. All members shall, by actions and attitude, keep safety paramount during ground and flight operations.
4. Aircraft engine operations are permitted only within the hours of 8:30 am to dusk Monday through Saturday and 12:00 pm to dusk Sundays.
5. A minimum of two people are required to be present when flying at the NESEA flying area. This allows an extra set of eyes to watch for full scale aircraft that may need to use the field and provides an added measure of personal safety. This practice is greatly encouraged for Helwig Field as well.
6. Alcoholic beverages and/or controlled substances are prohibited at flying sites at all times. Pilots shall not engage in flying activities following alcoholic beverage consumption that day regardless of time/quantity consumed.
7. Sponsoring members are responsible for the conduct of their guests.

8. All members shall ensure that spectators are aware of restricted areas.
9. All members shall leash their pets, supervise their children, and keep off the field

SAFETY ITEMS:

1. Only pilots, helpers, and selected, escorted spectators are permitted in the pit area.
2. Safety hubs or spinners are required on all aircraft.
3. All flights shall be controlled from the designated flight stations only.
4. All newly built or just repaired aircraft shall be given a radio range check prior to flight.
5. Only persons essential to aircraft retrieval are allowed on the runway area of the flying field only after ensuring other pilots engaged in flight are aware of their movement onto and of the field.
6. Deliberate flying behind the flight line (over the pit, spectator, pilot, or parking areas) is prohibited.
7. Engines shall be started with the nose of the aircraft pointed towards the runway.
8. Pilots will be careful not to direct prop blast at nearby people or equipment in the pit area.
9. All aircraft in the pits will be under physical control whenever the engine is being started or is running. Use of a helper or a stooge during engine starting is strongly recommended. Taxing in the pit is prohibited.
10. R/C engine shut down capability by use of the transmitter throttle trim lever is required.
11. Any accident involving personal injury or damage to property other than models shall be immediately reported to a club officer.

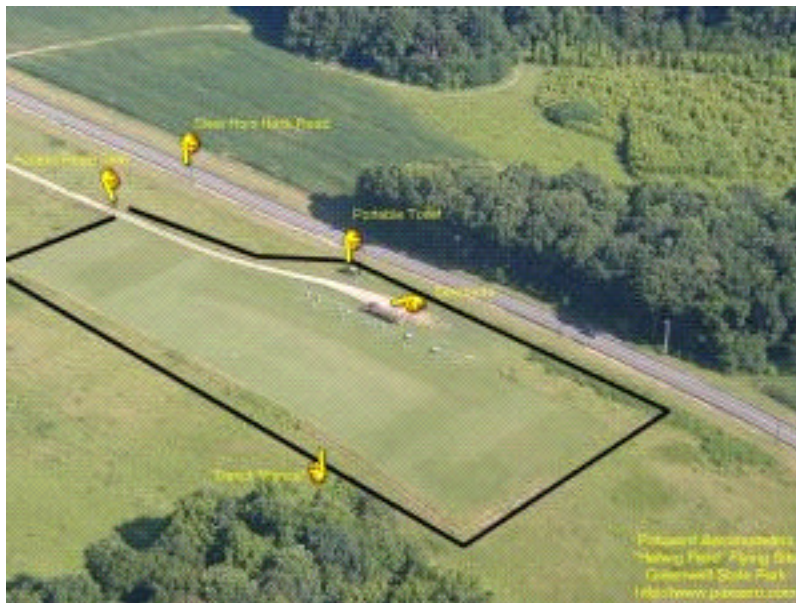
RADIO CONTROL ITEMS:

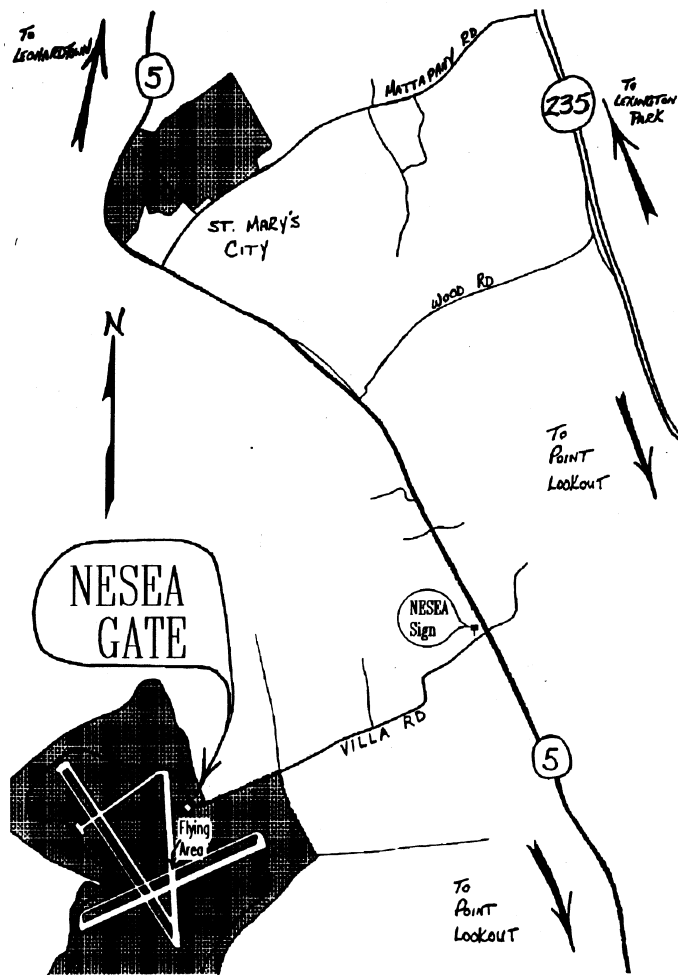
1. Transmitters must be verified off and placed in the transmitter impound immediately upon arrival at the field and when not actually in use.
2. Each pilot must have the correct club frequency control pin attached to the transmitter ***prior to the operation of that transmitter.*** When taking custody of a frequency control pin the pilot shall attach his/her AMA card and club membership card on the appropriate frequency control board position.
3. Frequency control pins may not be removed from another pilot's transmitter without the acknowledgement of that pilot and the placement of that transmitter into the impound.

Note: If you cause a crash through improper transmitter/frequency use, you are held liable for restitution to the crashed model's owner.

AIR TRAFFIC/NOISE CONTROL ITEMS:

1. No model of any kind may exceed a noise level of 99 DB at 10'.
2. Pilots will limit engine runs in the pits to a minute or less. Break in or extensive tuning shall be accomplished at the far ends of the pits.
3. Servicing engines on the runway is prohibited.
4. Pilots will ensure safe clearance onto the runway by looking both ways, then *loudly* announcing the intent to enter the runway prior to doing so. Aircraft already on the field and aircraft on final landing approach have precedence.
5. Student pilots under instruction have priority for air space.
6. The following priorities in flying shall be honored:
 - (1) Dead Stick Landing
 - (2) A person on the field
 - (3) An aircraft on landing final
 - (4) An aircraft ready to take off
7. Aircraft stalled on the runway shall be retrieved as quickly as possible. Intent to walk onto the runway shall be *loudly* announced prior to doing so.
8. Helicopters will only be operated from pilot stations 1 and 10 and hovered within the Helicopter designated area at the far end of the field. In no case shall a helicopter be hovered or flown with 30 feet of another person.





NESEA Flying Site

Routine Preflight Inspection

Internal (prior to attaching wing):

1. *Check Servo Mount, Screws, Servos, Servo Arms, for security and integrity.*
2. *Check Push rods for security and Integrity.*
3. *Check Receiver and Battery for connections, security and integrity.*
4. *Check for loose items that could cause interference and fouling of the servos and control rods.*
5. *Check fuel tank for leaks, security and integrity.*

Wing (prior to attaching)

1. *Check wing for breaks, warps, cracks and general integrity.*
2. *Check aileron pushrods, link ages, hinges, and clevises (if equipped) for security and integrity.*

Engine Area

1. *Check engine mount, engine, muffler, prop nut and/or spinner for security and integrity.*
2. *Check prop for nicks, cracks, and excessive ware. Replace if necessary.*
3. *Check Cowl (if equipped) for security and integrity.*
4. *Check external fuel lines for cracks, cuts, and abrasions.*

Tail Section

1. *Check vertical fin, rudder, hinges, control horns, and clevises for security and integrity.*
2. *Check Tail wheel (if equipped) for alignment, security, and integrity.*
3. *Check Horizontal Stabilizer, elevator, hinges, control horns, and clevis' for security and integrity.*

Range Check / Flight Control Check

1. *When frequency pin is available, attach to antenna, radio handle, shirt, or hat, and range check aircraft with the antenna collapsed. A minimum range check of 100 paces from aircraft will be considered acceptable.*

2. *Check that the flight control surfaces move in the correct and proper direction as input from the control sticks on the transmitter.*
3. *Check transmitter for proper settings of switches and trim settings.*
4. *If transmitter is equipped, check for proper model memory.*
5. *Check proper trim of flight controls when sticks are in the neutral position.*

Prior to leaving for the field

1. *Verify aircraft and transmitter batteries are fully charged.*
2. *Check starter and glow plug battery for full charge.*
3. *Verify you have sufficient fuel, a spare prop or two, and spare glow plugs.*
4. *Make sure you have made arrangements for instruction by a qualified instructor.*

What to Bring to the field

1. *Your complete aircraft! (you'd be surprised how many people forget the wing.)*
2. *Your radio!*
3. *Fuel!*
4. *Field Box! (Aircraft tools for assembly and disassembly and the field.)*
5. *Consumables that are required, rubber bands, aircraft cleaning compounds, rags, paper towels, and plastic bags for your trash.*
6. *Bring some water or other drink to prevent dehydration.*
7. *Bring something to eat if you are planning on being at the field for a while.*
8. *Your AMA Card and Club member card.*
9. *Sunscreen, sun glasses and a hat!*

Always remember to fly your aircraft in accordance with the AMA Safety Code and the Patuxent Aeromodelers Field Rules.

Glossary of Terms

Ailerons: The hinged, moveable parts on the trailing edge of the wing which control the roll axis of the aircraft causing to roll (bank) left or right.

Angle of Attack: A situation where the aircraft pitch (nose up/down attitude) is causing the leading edge of the wing to point upward or downward in relation to the forward velocity direction of the aircraft. Specifically, the angular difference between wing zero lift direction (or chord) and the aircraft velocity vector.

Base Leg: When you turn from downwind to intercept the extension of the runway heading, you are flying the “base leg”.

Center of Gravity (CG): Location fore and aft along the fuselage at which point the aircraft will balance. Most aircraft require a slight nose down CG. A tail heavy aircraft is undesirable and is only recommended for extremely experienced pilots.

Control Surface: The moveable parts of the aircraft that control its operation; the rudder, the elevator and the ailerons.

Crosswind: When your aircraft is flying a track perpendicular to the direction of the wind.

Dead Stick: Flight without engine power in an engine powered aircraft. Usually referring to a dead stick landing (a landing without benefit of thrust). Runway access priority is given to aircraft announced to be dead stick.

Dihedral: The amount of angle at the center of the wing. When the wing tips slant upward from the center section of the wing you have dihedral in the wing.

Disorientation: The phenomenon of viewing the aircraft but not perceiving its true attitude in the air. Disorientation is common until the student has considerable experience in flying the aircraft. Disorientation may be caused by back lighting, distance, lack of illumination or inattentiveness by the pilot. The pilot’s control response, when disoriented, are usually the exact opposite of those required, which lead to further confusion.

Downwind: With, or in the direction that the wind is blowing. Having a tail wind.

Elevator: The hinged, moveable part at the rear of the horizontal stabilizer which controls the pitch axis of the aircraft usually causing it to climb or dive.

Figure Eight Pattern: A flight pattern involving both left and right hand turns while tracing a horizontal figure eight in the air space. Initial turn is made away from the student as it passes by (to the right if the aircraft is approaching from the right).

Fin: The vertical stabilizer or fixed part of the tail section that helps keep the aircraft going straight ahead.

Final: When you turn from the base leg to the runway heading, you are turning on “final” or “final approach”.

Firewall: A part, usually plywood, that separates the engine compartment from the tank compartment. The engine mount or beams are attached to the firewall.

Flare: To ease back on the elevator control stick in order to raise the nose of the aircraft (increase pitch) and reduce the descent rate just prior to landing touchdown.

Fuselage (fuse): the body of the model including the tail section but not including the wing.

Leading Edge (L.E.): The front or forward edge of a part such as the leading edge of the wing or the leading edge of the rudder.

Left Hand Racetrack Pattern: An oval shaped flight pattern with the aircraft flying over the runway center line from the student’s left to the student’s right as he stands facing the runway. All turns are to the left.

Nose Heavy: An out of trim condition where there is excessive weight in the nose of the aircraft which moves the center of gravity (CG) too far forward. A slight nose heavy condition is satisfactory.

Right Hand Racetrack Pattern: An oval shaped flight pattern with the aircraft flying over the runway center line from the student’s right to the student’s left as he stands facing the runway. All turns are to the right.

Rudder: The hinged, moveable part at the rear of the vertical fin which controls the yaw axis of the aircraft or movement from side to side.

Snap: A situation where the aircraft suddenly drops a wing and spins or rolls in that direction. Caused by stalling one outboard wing panel by applying excessive aileron control or rudder at too high an angle of attack.

Stabilizer (stab): The fixed horizontal part of the tail section that helps to keep the aircraft from pitching (climbing or diving).

Stall: When you wing suddenly ceases to develop sufficient lift to sustain flight and the nose drops sharply. Generally caused by excessive angle of attack for a particular airspeed. The wing stops providing enough lift to support the aircraft and weight/gravity takes over.

Tail Heavy: An out of trim condition where there is excessive weight in the tail of the aircraft which moves the center of gravity too far aft. This requires that weight be added to the nose of the aircraft or removed from the tail. This is a dangerous condition in which the aircraft may become uncontrollable.

Torque: Force applied to the aircraft by the engine which tends to cause the aircraft to roll in the opposite direction of the propeller rotation.

Throttle/Thrust: Change to engine throttle varies the thrust developed by the engine and propeller. Thrust is the pulling/pushing power of the engine/propeller combination which results in aircraft acceleration or velocity.

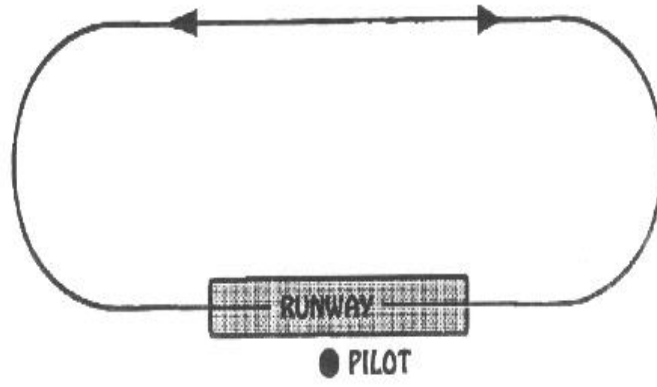
Trailing Edge (T.E.): The rear or back edge of a part such as the trailing edge of the wing or the trailing edge of the rudder.

Trim: Mechanical adjustment to cause the aircraft to fly in a predetermined path (usually straight and level). Transmitter trim should always be considered as a temporary measure. Following flight, the control surfaces should be mechanically adjusted to allow straight and level flight with centered transmitter trim levers.

Upwind: Into the wind or against the wind, as in a takeoff which is always accomplished into the wind.

Wave off: An aborted landing approach accomplished by the addition of power (increased throttle).

Wing: The part of the aircraft that provides lift. The wing can be on top of the fuselage, on the bottom of the fuselage or somewhere in between.



Left or Right Hand Racetrack Pattern

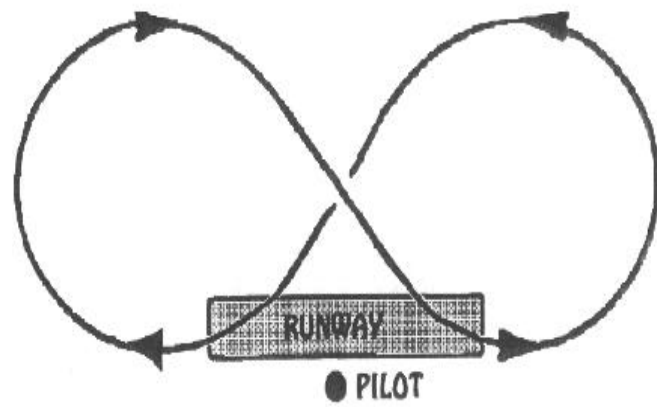
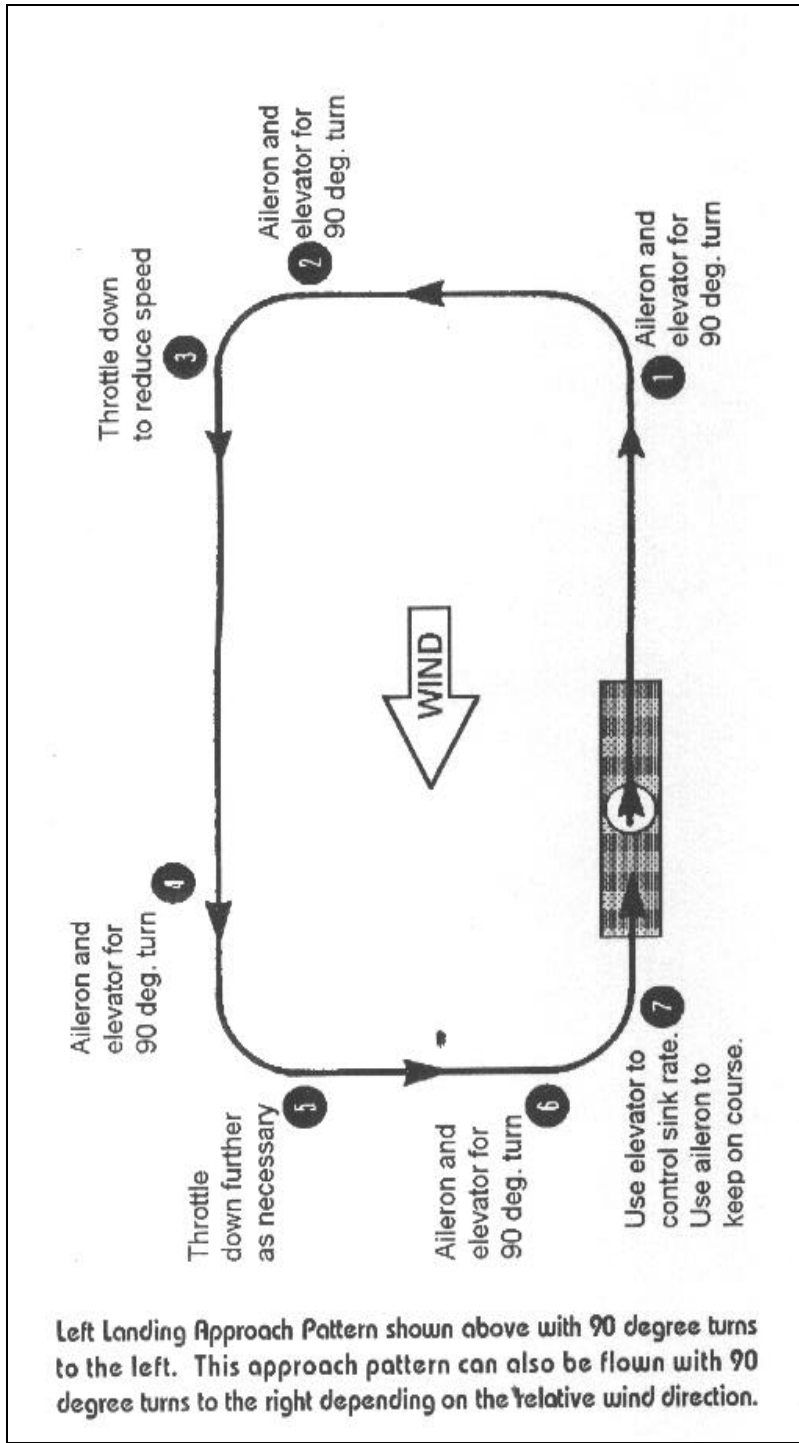


Figure Eight Pattern



**Pilot
Qualification
Section**

Required Reading

(The below items must be signed off and dated by the student prior to the start of training)

1. I have read, understand, and agree to comply with the Safety Code of the Academy of Model Aeronautics (AMA).

_____:_____
Date Signature

2. I have read, understand, and agree to abide by the Patuxent Aeromodelers Constitution and Bylaws as set forth by the membership.

_____:_____
Date Signature

3. I have read, understand, and agree to comply with the Field Rules of the Patuxent Aeromodelers.

_____:_____
Date Signature

4. I have read and understand, the contents of a Beginner's Guide to R/C Flight by Bob McDaniel.

_____:_____
Date Signature

5. I will not hold the Patuxent Aeromodelers Instructors, officers, or members liable for any damage that may occur during instruction as the instruction is voluntary and up to me to decide whom I wish to have provide instruction. I further understand that it may be necessary to sign a liability waiver prior to receiving instruction.

_____:_____
Date Signature

Workbench Preflight Checklist

(The student will complete the following checklist with his/her trainer aircraft, correct deficiencies to the best of the ability and sign off prior to bringing the aircraft to the field.)

1. Ensure servos are securely mounted utilizing the rubber shock mounts furnished with servo.
2. Ensure control surface hinges are fastened securely.
3. Ensure all control rod and cable terminations are properly in place on servo arms and control horns, and locking mechanisms are in place.
4. Ensure all mounting screws (engine, muffler, carburetor, servo arms, control horns, landing gear, wheel collects, etc.) are tight and secure.
5. Set aileron, elevator, and rudder at neutral position with the receiver and transmitter on and transmitter trim controls at center of adjustment range.
6. Ensure control surface throws are set to plan/kit recommendations.
7. Ensure servos are not being overloaded at the extremes of their travel by binding of the control system. (Servo buzzing is an indication of servo overload and may cause premature battery drainage.)
8. Ensure all controls operate smoothly **in the proper direction** over the full range of the control sticks without unwanted coupling between channels.
9. Verify that the engine throttle barrel is in the correct position with the throttle stick set at full throttle, idle and off respectively. (Wide open at full throttle, slightly open at idle, and fully closed at low throttle low trim setting for shut down.)
10. Ensure there is very little slack in the control systems when the servo arms are held and the control surfaces are moved by hand. (Slack can exist due to oversize holes in servo arms or control horns, cable housings that are not secured at several points along their length, or too much flex in control rods. While a small amount of slack is normal, especially in trainer aircraft, excessive slack can result in loss of control and resultant destruction of the aircraft.)

11. Ensure electrical connections are secure so that they cannot interfere with servo and control operation or come loose during flight.
12. Ensure receiver and battery are wrapped in foam rubber to minimize shock and vibrations and secured to prevent shifting.
13. Ensure the receiver lead to the wing servo is short enough so that slack will not interfere with the servo control when the wing is seated.
14. If your plane has tricycle landing gear, adjust it so the plane sits level or one or two degrees nose up—never nose down. Verify that the nose gear spring coils face the rear of the aircraft.
15. Ensure there is adequate ground clearance for the propeller.
16. Ensure the nose wheel or tail wheel is set to run straight with no rudder trim. For tricycle gear, the nose wheel throw range should be set for minimum travel.
17. Adjust your main gear wheels so they are toed in slightly for good ground handling. This is especially important for tail draggers.
18. Ensure wheels are secure and roll freely.
19. Ensure the fuel tank is isolated from vibration sources with foam rubber.
20. Ensure the fuel lines are not pinched, kinked, cut or split and the clunk moves freely in the tank. Fill the fuel tank and eliminate leaks.
21. Ensure the recommended prop has been inspected for nicks and cracks, balanced; and mounted with the retaining nut very **TIGHT**. If a plastic prop is used, sharp edges must be dulled with sandpaper. Verify that the required safety nut or spinner is installed and secure.
22. It's a good idea to bench run your engine for preliminary break in as prescribed in your engine instruction booklet. This gives you experience in operating the engine and may save precious flying time at the field.
23. Make sure the wing is not warped. Significant warp must be corrected. If you have significant wing warp problem seek assistance for correction.

24. Ensure wing hold down dowels are long enough and secure. Be prepared to mount the wing with ten or more rubber bands for flight.
25. Balance your plane longitudinally and laterally at the point specified on the plans with fuel tank empty. A slight nose heavy balance is ok.
26. Ensure all transmitter trim controls, function switches, and servo reversing switches are properly set.

_____ : _____
Date Signature

NOTE: Ensure both transmitter and receiver batteries are freshly charged before coming to the field. Use of an expanded scale voltmeter to verify battery charge status is encouraged.

Flight Training Syllabus

(only approved Patuxent Aeromodelers Flight Instructors shall initial or sign off as indicated below. Items need not be taught in strict order as listed by may vary according to instructor/student preference and field conditions such as sun and wind.)

1. **Administrative verification.** The instructor will observe the student's current AMA card, current Patuxent Aeromodelers membership card, and verify that Required Reading and the Workbench Preflight Checklist have been signed off by the student.

_____ : _____
Date Signature

2. **Aircraft Inspection.** Prior to field assembly, the instructor will pre-flight the student's aircraft identifying deficiencies. The instructor will demonstrate a proper radio range check. The instructor will give the student tips on how to best correct any deficiencies noted.

Satisfactory completion: *No remaining deficiencies.*

Repeat	Repeat	Repeat	Satisfactory Completion
_____ : _____	_____ : _____	_____ : _____	_____ : _____
Date/Initial	Date/Initial	Date/Initial	Date Signature

3. **Aircraft Test Flight.** The instructor will supervise the student in preparing his/her aircraft for flight. The instructor will demonstrate proper engine starting technique including safety considerations. The instructor will adjust the engine mixture for flight. Once ready with engine running, the instructor will test fly the aircraft. Upon landing, the instructor will give the student tips on deficiency correction and aircraft trimming.

Satisfactory completion: *Aircraft trimmed with trim levers near neutral. Engine adjusted to remain running throughout flight. No other deficiencies.*

Repeat	Repeat	Repeat	Satisfactory Completion
_____ : _____	_____ : _____	_____ : _____	_____ : _____
Date/Initial	Date/Initial	Date/Initial	Date Signature

Note: *On subsequent flights, the student will summon an instructor when the aircraft is fueled and ready for flight. With the instructor present, the student will then start his/her own engine, carry/push the aircraft onto the field, and hand the transmitter to the instructor.*

4. **Left Hand Racetrack Pattern.** Prior to flight, the instructor will review stick movement effect on aircraft flight with the student. The instructor will then show the student the stick movements necessary for making a left turn. The instructor will get the aircraft airborne and verify trim. The instructor will demonstrate flying a left hand racetrack pattern. He/she will then supervise the student in making constant altitude left hand turns while flying a racetrack pattern.

Satisfactory completion: *Student able to perform left hand turns without significant altitude gain/loss while keeping the aircraft within the general boundaries of a left hand racetrack pattern.*

Repeat	Repeat	Repeat	Satisfactory Completion
_____:	_____:	_____:	_____:
Date/Initial	Date/Initial	Date/Initial	Date Signature

5. **Right Hand Racetrack Pattern.** Prior to flight, the instructor will show the student the stick movements necessary for making a right turn. The instructor will demonstrate flying a right hand racetrack pattern. He/she will then supervise the student in making constant altitude right hand turns while flying a racetrack pattern.

Satisfactory completion: *Student able to perform right hand turns without significant altitude gain/loss while keeping the aircraft within the general boundaries of a right hand racetrack pattern.*

Repeat	Repeat	Repeat	Satisfactory Completion
_____:	_____:	_____:	_____:
Date/Initial	Date/Initial	Date/Initial	Date Signature

6. **Figure Eight Pattern.** The instructor will first demonstrate flying a figure eight pattern. Initially, the pattern shall be flown such that turns are away from the pits. He/she will then supervise the student in making constant altitude left hand and right hand turns while flying a figure eight pattern.

Satisfactory completion: *Student able to perform left and right hand turns while maintaining a constant altitude and keeping the aircraft*

Within the general boundaries of a figure eight pattern.

Repeat	Repeat	Repeat	Satisfactory Completion
_____:_____ Date/Initial	_____:_____ Date/Initial	_____:_____ Date/Initial	_____:_____ Date Signature

7. **Stalls and Slow Flight.** The instructor will demonstrate slow flight, stalls, and stall recovery while discussing the cause of stalls, airspeed/power management, early stall recognition, stall prevention, and stall recovery. The instructor will then supervise the student in slow flight, stalling, and stall recovery.

Satisfactory completion: *Able to maneuver the aircraft in slow flight without stalling or when an inadvertent stall does occur, recognizes it and takes prompt action to recover. Consistently able to recover from intentionally and inadvertently induced stalls without loss of control, disorientation, or excessive loss of altitude.*

Repeat	Repeat	Repeat	Satisfactory Completion
_____:_____ Date/Initial	_____:_____ Date/Initial	_____:_____ Date/Initial	_____:_____ Date Signature

8. **High Landing Approach.** The instructor will demonstrate a rectangular landing approach pattern including wave off on final. The instructor will then supervise the student in flying a rectangular approach pattern waved off from an altitude of no less than 25 feet.

Satisfactory completion: *Consistent performance of landing pattern to a satisfactory final approach lineup position utilizing adequate throttle control.*

Repeat	Repeat	Repeat	Satisfactory Completion
_____:_____ Date/Initial	_____:_____ Date/Initial	_____:_____ Date/Initial	_____:_____ Date Signature

9. **Left Landing Approach.** The instructor will demonstrate a rectangular approach pattern to a left-to-right landing. The instructor will discuss final landing/wave off decision making. The instructor will then supervise the student in making rectangular approach pattern to left-to-right full stop landings.

Satisfactory completion: *Consistently fly's correct left hand landing pattern to good final approach lineup position, good attitude control and throttle control on final, appropriate flare, touchdown, and straight landing rollout with minimal bouncing and engine still running.*

Repeat	Repeat	Repeat	Satisfactory Completion
_____:	_____:	_____:	_____:
Date/Initial	Date/Initial	Date/Initial	Date Signature

10. **Right Landing Approach:** The instructor will demonstrate a rectangular approach pattern to a right-to-left landing. The instructor will then supervise the student in making rectangular approach pattern to right-to-left full stop landings.

Satisfactory Completion: *Consistently flies correct right hand landing pattern to good final approach lineup position, good attitude control and throttle on final, appropriate flare, touchdown, and straight landing rollout with minimal bouncing and engine still running.*

Repeat	Repeat	Repeat	Satisfactory Completion
_____:	_____:	_____:	_____:
Date/Initial	Date/Initial	Date/Initial	Date Signature

11. **Taxi and Take Off:** The instructor will explain to the student how to taxi to position and perform a takeoff. The instructor will then demonstrate taxi to position and perform a takeoff. The instructor will then supervise the student in taxiing to position and in performing takeoffs.

Satisfactory Completion: *Consistent rudder, elevator and throttle control while taxiing. Smooth, straight takeoff acceleration run; smooth, gradual lift off and climb out.*

Repeat	Repeat	Repeat	Satisfactory Completion
_____:	_____:	_____:	_____:
Date/Initial	Date/Initial	Date/Initial	Date Signature

12. **Touch and Go's:** The instructors will demonstrate a touch and go. The instructor will then supervise the student in making touch and go's.

Satisfactory Completion: *Consistently Flies correct landing pattern to good final approach lineup position, good attitude control and throttle control on final, appropriate flair, touchdown, and straight rollout with minimal bouncing. Smooth, straight takeoff acceleration run, smooth, gradual lift off, straight, gradual climb out.*

Repeat	Repeat	Repeat	Satisfactory Completion
_____:	_____:	_____:	_____:
Date/Initial	Date/Initial	Date/Initial	Date Signature

13. **Emergency Procedures:** The instructor will place the aircraft into a spin and supervise the student in recovery to straight and level flight. The student will simulate a dead stick situation and supervise the student's safely controlled landing.

Satisfactory Completion: *The student will recover from the spin to straight and level flight without assistance. The student will simulated-dead-stick land the aircraft onto the field without assistance and damage to the aircraft or hazard to personnel.*

Repeat	Repeat	Repeat	Satisfactory Completion
_____:	_____:	_____:	_____:
Date/Initial	Date/Initial	Date/Initial	Date Signature

14. **SOLO Test:** The student will conduct a flight starting with getting the transmitter from the impound area, starting the engine, taxi, takeoff, racetrack pattern, figure eight pattern, left turn approach landing / touch and go, right turn approach landing/ touch and go, spin recovery and simulated-dead-stick landing.

Satisfactory Completion: *Subjective—two instructors, jointly or separately, are satisfied the student possesses the necessary skill and judgment to safely and independently operate his/her aircraft at the field under a variety of weather conditions and field situations.*

Satisfactory Completion	Satisfactory Completion
_____:	_____:
Date Signature	Date Signature

