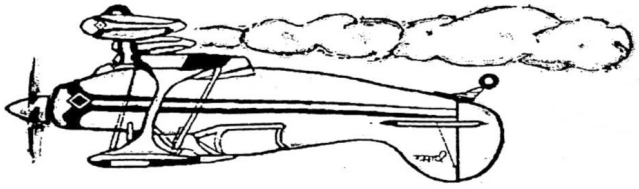
# Boulder Aeromodeling Society



*Flight Training Program*

*Program Syllabus & Application*

## Contacts:

Flight training coordinator – Chester Shans, 303-513-1787 (mh434mkix@gmail.com)

AMA Certified Introductory Pilot Instructor – Ken Jochim, 303-775-9940 (kjjochim@aol.com)

## Additional BAS Instructors:

James Mack – 303-704-5464 (jmack@jmack.net)

Murray Lull – 720-406-7768 (murraylull@comcast.net)

Rich Anderson – 303-652-2224 (anderson.rich@comcast.net)

## Introduction

The BAS flight training program is intended to help interested individuals that have an interest in model aviation learn to fly remote controlled aircraft. The program is established to provide instruction to both adults (19 and older) and youth ages 12 - 18.

## Mission

The training program aims to train lifelong members of the R/C aircraft community by offering a comprehensive program to help students, that want to progress in the hobby, but are unsure about making the financial commitment to purchase their own plane prior to having the opportunity to experience flying and successfully controlling an airplane.

## Expectations for Students

### *AMA Membership*

The student will be responsible for filling out and submitting an AMA application and maintaining an active AMA membership during the training period. For students under the age of 19 there is no cost for this membership and it assures that students can fly and be covered by AMA liability insurance.

### *Instruction*

Students should commit 2-4 hours at the field at least once a week with their assigned instructor. Training should be done regularly, preferably every week on the same day, or as needed to accommodate the schedules of both the instructor and student.

Student will be responsible for transportation to and from the airfield. Many students will be under driving age, and may need assistance to get to the field. If unable to coordinate with family to provide transportation, instructors may volunteer to provide transportation to and from the field for students.

### *Program Feedback*

Students are responsible for maintaining a logbook of their flights and their progress as communicated by the instructor. Upon completion of the program, students should provide feedback to the program coordinator so that best practices can be shared and adjustments can be made to the training program as necessary.

## Equipment

The equipment will be club provided trainers with full control capability (ie. elevator, aileron, rudder, and throttle). These trainers will be set up and test flown prior to any sessions with the student to get students flying quickly and eliminate the initial aircraft shakedown which can be frustrating to new pilots. The choice of trainer types provided by BAS will be determined by the training coordinator and the approved club instructors. As a guideline the initial trainers will be electric powered planes in the category of the E-Flite Apprentice, Alpha 450 or the Hobbico NexSTAR Mini EP. These planes represent a good choice due to the opportunity for advancement and the ease of assembly for the instructor.

Students will be expected to assist the instructor with any repairs and maintenance needed for their aircraft during the training period. The student will be encouraged to purchase their own airplane upon graduation.

## Curriculum

A standard curriculum will be developed which will allow students to seamlessly transition between instructors while effectively gauging their progress. The curriculum will involve the following phases: a pre-flight field orientation, basic flight orientation, controlled flight patterns, takeoffs, landings, and a pilot proficiency assessment. These are described in detail in the sections below.

During all phases, the student will keep a log book of the student's progress, in which the instructor will note their progress and provide suggestions for future work. This will allow the student to transition to another instructor if the student is motivated to attend more training sessions or if the instructor's availability changes.

### *Pre-Flight Field Orientation*

Pre-flight orientation should familiarize the student with the aircraft and its operation, along with field rules and pilot guidelines.

Pilots will proceed to the next phase after proper operation on the ground, by properly preparing the plane for flight.

### *Basic Flight Orientation*

The student will begin by gaining familiarity with the aircraft handling and making coordinated turns. During this time, the instructor will assess difficulties the student is having with keeping the aircraft aloft and try to coach the student towards controlled flight.

Pilots will proceed to the next phase after demonstrating the ability to make coordinated turns and fly the aircraft around with little intervention from the instructor.

### *Controlled Flight Patterns*

During this phase, a number of flight patterns will be presented, designed to familiarize the student with different orientations of the aircraft, different turn directions, and controlling the direction of the aircraft more precisely. The student should be instructed to perform the following: racetrack circuits (clockwise and counterclockwise), figure 8 circuits (with turns both towards and away from the runway), and simulated (50 feet or above) landing patterns.

Pilots will proceed to the next phase upon demonstrating the ability to smoothly enter and exit turns in both directions without perceptible altitude change. Simulated landing patterns should track straight down the runway center for at least half the length of the runway.

### *Takeoffs*

During this phase, the student will be instructed to make controlled and safe takeoffs. Takeoff instruction shall be started after the student is fairly comfortable with controlled flight patterns.

### *Landings*

During this phase, the student will be instructed to make safe landings. Student should begin with aborted approaches, and taught to exercise judgment in aborting landings when the landing approach is bad. Only after the student appears to be making approaches that could be turned into successful landings will actual landings will be attempted.

Pilot will proceed to the next phase upon successful landing, without the plane leaving the runway edge, and with a safe taxi to the taxiway.

### *Pilot Proficiency*

During this phase, the student will be helped to refine his/her flying skills for advanced flight. Topics will include aborting landings, throttle control, aircraft trimming, windy or difficult condition flying, engine-out landings, and basic aerobatics.

### *Solo*

During this phase, the pilot will learn the skills necessary to fly without an instructor's assistance. The instructor should still maintain buddy box control during this phase, however.

The student will proceed to the next phase upon demonstrating the ability to perform an entire flight, from takeoff to landing, without instructor intervention. The instructor should feel comfortable in the student's ability to successfully fly solo in a variety of typical conditions (light wind, sun, etc.).

Requirements for progression from this phase are to be determined.

## Graduation

After completing all previous phases, and within six months of graduation BAS will provide support in setting up a new airplane that the student may have/buy and will help the student get comfortable with their new plane during the first few flights.

For youth that have completed the previous phases BAS will give a free one year junior membership to the BAS club.

## Dismissal

If the instructor determines that the student is not following through with the commitments of the program, or the student is unable to develop the skills/ability necessary for safe flight, the instructor may recommend to the club officers that the student be dropped from the program and another student selected. Any student recommended to be dropped from the program may make an appeal to the club officers within thirty days presenting his/her position on their progress and commitment to complete the training program. Any decision by the club officers will be final.

Other reasons for dismissal include, but are not limited to: failure to obtain AMA membership or failure to regularly attend training sessions

# Boulder Aeromodeling Society

*Flight Training Program*

*Student Application Form*

Fill out this form as completely as possible. Please print clearly. If necessary, attach up to ONE additional sheet of paper with responses.

Name: _____ Age (as of July 1): _____

Address: _____

_____

Phone Number: _____

E-Mail (if you have one): _____

1. Do you have any other commitments that would make it difficult for you to devote 3-4 hours per week until graduating the program (approximately 6-8 weeks)?

_____

_____

_____

_____

2. Do you have any previous experience with radio-controlled models (including cars, boats, and aircraft or computer RC Flight Simulators)? If so, please list.

_____

_____

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_____

3. Have you had any classes or done any reading on how an airplane works and flies? If so, please list.

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_____

4. Do you have any interests or hobbies that would help you learn to build and fly model aircraft? If so, please list.

_____

_____

_____

_____

I have read the information in the Boulder Aeromodeling Society Training Program and if selected into the program accept the conditions and requirements to proceed to graduation.

Student Signature: _____ Date: _____

**Please complete this section if the student is under age 19.**

Parent/Guardian of the above student has read the Boulder Aeromodeling Society Youth Training Program and attached AMA Emergency Safety Alert regarding Lithium Battery Fires and consents to have their son/daughter enroll in the youth training program and support them in their efforts to graduate. Parent/Guardian also releases the Boulder Aeromodeling Society and Instructors from any and all liability that could result from student, or instructor, actions in handling/flying the airplane and charging or maintaining the batteries.

Parent/Guardian Name (Printed): _____

Parent/Guardian e-mail: _____

Parent/Guardian Signature: _____ Date: _____

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Upon completing this form, please mail to:

Chester Shans

7654 Nikau Dr.

Niwot, CO. 80503

# EMERGENCY SAFETY ALERT

## Lithium Battery Fires

Lithium batteries are becoming very popular for powering the control and power systems in our models. This is true because of their very high energy density (amp-hrs/wt. ratio) compared to NiCd's or other batteries. With high energy comes increased risk in their use. The principal risk is FIRE which can result from improper charging, crash damage, or shorting the batteries. All vendors of these batteries warn their customers of this danger and recommend extreme caution in their use.

In spite of this, many fires have occurred as a result of the use of Lithium Polymer batteries resulting in loss of models, automobiles, and other property. Homes and garages and workshops have also burned. A lithium battery fire is very hot (several thousand degrees) and is an excellent initiator for ancillary (resulting) fires. Fire occurs due to contact between Lithium and oxygen in the air. It does not need any other source of ignition, or fuel to start, and burns almost explosively. These batteries must be used in a manner that precludes ancillary fire. The following is recommended:

1. Store, and charge, in a fireproof container; never in your model.
2. Charge in a protected area devoid of combustibles. Always stand watch over the charging process. Never leave the charging process unattended.
3. In the event of damage from crashes, etc, carefully remove to a safe place for at least a half hour to observe. Physically damaged cells could erupt into flame and after sufficient time to ensure safety, should be discarded in accordance with the instructions which came with the batteries. Never attempt to charge a cell with physical damage, regardless of how slight.
4. Always use chargers designed for the specific purpose, preferably having a fixed setting for your particular pack. Many fires occur in using selectable/adjustable chargers improperly set. Never attempt to charge Lithium cells with a charger which is not specifically designed for charging Lithium cells. Never use chargers designed for Nickel Cadmium batteries.
5. Use charging systems that monitor and control the charge state of each cell in the pack. Unbalanced cells can lead to disaster if it permits overcharge of a single cell in the pack. If the batteries show any sign of swelling, discontinue charging and remove them to a safe place outside as they could erupt into flames.
6. Most important: NEVER PLUG IN A BATTERY AND LEAVE IT TO CHARGE UNATTENDED OVERNIGHT. Serious fires have resulted from this practice.
7. Do not attempt to make your own battery packs from individual cells.

These batteries CANNOT be handled and charged casually such as has been the practice for years with other types of batteries. The consequence of this practice can be very serious resulting in major property damage and/or personal harm.

Safety Committee

Academy of Model Aeronautics

5161 E Memorial Drive

Muncie, IN 47302