

Additional Recommendations

1. Join your local club. Get help building and learning to fly. Mooch launches off the club's equipment. Find out what frequencies are already taken BEFORE you buy a radio.
2. Join the Academy of Model Aeronautics (AMA) For \$48 per year you get a great magazine, access to the national flying site, and insurance that most clubs require.
3. Read *RC Soaring Digest*. The current issue is always available through the *RCSD* home page <<http://www.b2streamlines.com/RCSD.html>>. Information on obtaining back issues is available there as well.
4. Purchase and view "Old Buzzard Goes Flying." This video, available from Pony XPress, explains RC soaring in a comprehensive way.
5. Consider a flight simulator. Hook up your transmitter to your computer and get some practice flying a model using "virtual reality." Check out the Free-Model-Simulator (FMS) on the web.
6. Join the League of Silent Flight (LSF), an international fraternity of RC soaring pilots who have earned the right to become members by achieving specific goals in soaring flight.
7. Wear a hat and sunglasses and use sunscreen!

Gliders are airplanes that land with no motor, sailplanes are airplanes that go up with no motor. Soaring RC sailplanes is so addicting because it combines the hardware part -- design and construction, trim and balance -- with pilot skills and experience, toward a quest of finding an invisible power source to take our models up toward the clouds. Finding that first thermal is like getting your first kiss... you hope there are more in your future and the search will be challenging and exciting.

Gordy Stahl

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Published by *RC Soaring Digest*

Suppliers and Sources

Academy of Model Aeronautics
5151 E. Memorial Drive, Muncie IN 47302
1-800-435-9262
<<http://www.modelaircraft.org>>

Free-Model-Simulator
<http://n.ethz.ch/student/mmoeller/fms/index_e.html>

J&C Hobbies
100 A Street, Pittsburgh PA 15235
Order line: 800 309-8314
<<http://www.jchobbies.com>>

Leading Edge Gliders
3916 Village Drive
Carson City, NV 89701
Tel: (909) 544-9929
<<http://www.leadingedgegliders.com/>>

The League of Silent Flight
<<http://www.silentflight.org>>

Mountain Toys, Tom Henscheid
2184 N. Oak Hills Drive Meridian, ID 83642
Phone (208) 887-6399
<tom@mntoys.com>
<<http://www.mntoys.com>>

Patton Aircraft, c/o Dan Borer
9875 Serrano Court
Rancho Cucamonga, CA 91730
<<http://home.earthlink.net/~pattonact/>>
<dborer@earthlink.net>

Pony XPress
5 Monticello Dr, Albuquerque NM 87123
(505) 299-8749

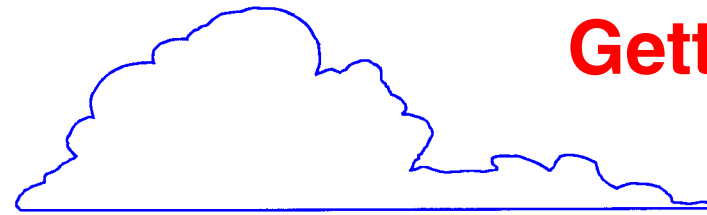
RC Soaring Digest
<<http://www.b2streamlines.com/RCSD.html>>
<rscsdigest@aol.com>

ServoCity.com
<<http://www.servocity.com>>

The Sloper's Resource, Greg Smith
<<http://www.slopeflyer.com>>, <greg@slopeflyer.com>

Trick R/C
938 Victoria Ave, Venice CA 90291
<<http://www.zagi.com>>, <zod@zagi.com>

Getting Started in RC Soaring



Choosing a Flying Field

Most everyone has access to a "flat land" site. School football fields, parks, and vacant lots can serve as flying fields, at least in the short term. These flat land fields and the surrounding areas generate thermals (rising columns of warm air) which can be used to keep a radio controlled glider in the air for sustained periods.

Some areas of the country are blessed with hills, mountains and cliffs which are relatively clear of brush and free of trees. When the wind blows up the face of these slopes, the updraft can be used to keep a glider in the air for hours at a time.

The Thermal Soarer

Thermal soaring is a challenging and exciting experience. Gliders designed for thermal flying usually have long narrow wings. The Gentle Foamy pictured below is a quick-build model which has an EPP foam wing and fuselage, and corrugated plastic tail feathers. It's practically indestructible.



The Gentle Foamy is a product of Mountain Toys.

The Gentle Foamy uses rudder and elevator controls and so needs just two servos. Because the wing is of EPP foam and has wooden spars, it can be easily modified to incorporate ailerons. Mini servos with 28 oz.in. of torque or more can be placed directly in the wing. This would make the Gentle Foamy useful as a transitional trainer on the way to a "full house" contest 'ship. It costs \$65 plus \$8 shipping.



Patton Aircraft P-51-B

The Slope Soarer

Because conditions on the slope can be substantially different than those found on a flat field, flying on the slope means a robust and maneuverable aircraft is desirable. EPP construction is well suited to trainer slope planes because it is tough and resilient.

A recent advancement in slope flying, particularly for the contest scene, is the "flying wing" or tailless glider. Easy to build, very strong, and exceptionally maneuverable, more and more 'wings are showing up on slopes everywhere. Most flying wings require a mixer to operate elevons. (See "The Radio")

Choosing an Airplane

While the Gentle Foamy is nearly indestructible, not all newcomers to soaring are happy with a floater trainer. The traditional recommendation -- a two-meter slow-flying, easy-to-keep-up-with thermal glider -- is not radical enough for all of today's student pilots.

Just as many people who have learned to fly on the well-loved wooden Gentle Lady and the newer EPP Gentle Foamy, there are some out there who need a little more excitement to stay interested during the learning period. They need slope planes. They need aileron slope planes. The problem is new pilots crash a lot, and a good crash quickly puts an end to the day's fun on the slope.

The answer is bounceable slope planes. Bounceable warbirds even. Combat slope planes made of EPP "miracle" foam provide the durability and excitement that skater/surfer/snowboarder types need in their introductory sailplanes.

Several manufacturers make suitable kits of EPP foam slope planes, and nearly all of the simplest three and four-channel radio sets will work for this program. Recommended here is a combination of cost-effective plane and radio that works, and works well for new "wildman" student soaring pilots.

Trick R/C's Zagi THL or Zagi 5C. were designed for the rough and tumble combat scene in California. These kits are \$50 and \$70 respectively, plus \$5 each for two rolls of covering tape and \$7 shipping.



Zagi THL



Zagi 5C



Leading Edge Gliders' Me-109

EPP foam warbirds are available from either Patton Aircraft or Leading Edge Gliders. You can choose between the Me-109, the P-40 Warhawk, the Zero or the P-39 Aircobra, among others.

The foamie warbird kits cost around \$75 and Ultracote costs about \$12 per roll. Two colors or more may be desired in the finished warbird.

These kits build into 48" or 60" span, good-looking, tough-as-nails, aileron slope planes that will provide the excitement that lots of young fellows crave, and will withstand dozens of crashes that are inevitable during the learning period. These planes were designed for full-contact combat, and so they have maneuverability and damage resistance needed by the modern extreme gravity sportsman.

Whether the Gentle Foamy or another EPP kit, the builder will need a hobby knife, epoxy glue, and "Goop" glue from the hardware store. Finishing the plane is done by applying packing tape, as is the case with the Zagi, or Carl Goldberg Models Ultracote covering using a covering iron tool made for this purpose.

Building the plane will take a week of evenings for a first-time builder, working carefully from the detailed instructions in the kit. If building assistance is available the project will go faster, but it can be done by a determined newbie alone.

The Radio

Thermal soaring gliders are usually set up with rudder and elevator controls, and hence need only a two channel radio. The Patton and LeadingEdge warbirds and most other slope planes fly fine with two control functions as well -- ailerons and elevator. Additionally almost all foamies require only two standard size servos, the least expensive of all servos.

While a two channel radio is all that is needed, many beginner two channel transmitters split their functions across two control sticks. This we want to avoid, because nearly all pilots fly with elevator and aileron together on the right control stick, and this is the way you will fly throughout your RC career. You might as well learn on the type of radio you will be using later.

The Hitec Laser 4 (four channel two stick) radio set is an inexpensive introduction to slope plane control, costing about two-thirds of what a four channel "beginner" radio costs, and will serve well for the service life of the first and likely second EPP airplane. The HS-311 servos are standard size and will work just fine in this type of installation.

The two control sticks on the Laser 4 operate elevator and aileron (right stick) and rudder and "throttle" (left stick). Although four channels are not necessary for any of the warbirds or the Gentle Foamy, the additional channels can be used to run more advanced control systems. Servos can operate spoilers or flaps, and additional separate aileron and rudder functions. These are options you may want to consider if flying a thermal bird.

The Hitec Laser 4 also has an electronic mixer in the transmitter which when switched on can be used with the two servos to combine the elevator and aileron functions to drive elevons. This mixing capability is necessary if you've chosen one of the flying wing gliders like the Trick R/C Zagi. Without this mixing capability in the transmitter, you'll need to purchase a separate electronic mixer and connect it between the receiver and servos.

The Laser 4 comes with rechargeable nickel cadmium batteries and a wall charger, and a high quality dual conversion receiver.

The Laser 4 radio set with four standard servos costs about \$125 from J&C Hobbies or ServoCity. Whether you choose a conventional tailed glider or a flying wing, with a Hitec Laser 4 radio you'll be prepared for slope training, aerobatic flying, and slope combat, as well as thermal flying.



Hitec Laser 4

What It Costs

Here is a list of the bits and pieces needed for any one of the warbird projects, and their approximate cost:

Glider kit	\$65
Tube of Goop brand glue	6
60 yards filament strapping tape	10
Epoxy glue	8
Roll of Ultracote brand covering	12
Hitec Laser 4 radio set	125

The total for the glider kit, radio, supplies and materials is about \$225. Add shipping/postage if not purchased locally.

Standard size servos can be purchased for as little as \$9 each, and mini servos for about \$25 each, from ServoCity and other sources. It should be possible to get everything you need and be in the air and having a load of fun for under \$275.

Miscellaneous Items

There are a few specialized tools you'll need that may be found around the house. These are:

Hobby knife and blades	\$ 5
Covering iron	20
80 grit sandpaper	2