Where Are The Kids?

■ Fred L. Reese

The solution is us—you, me, our club, your club—and since there are lots of us, there are lots of solutions. We should act whenever there is an opportunity to share our hobby with children who are interested.

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We can make a difference to the youth of today. It is up to us to show our youth the many possibilities available in modeling. We can have a great time being fine role models.

Our club, the Sierra Foothills RC Flyers of Grass Valley, California, got involved when Gene King, a teacher at Lyman Gilmore Middle School, asked for help with a classroom RC airplane project. Gene has gone out of his way to make school more interesting by involving his students in educational programs that spark imaginations and encourage learning. Model aviation is one more way an inspired teacher can inspire our children.

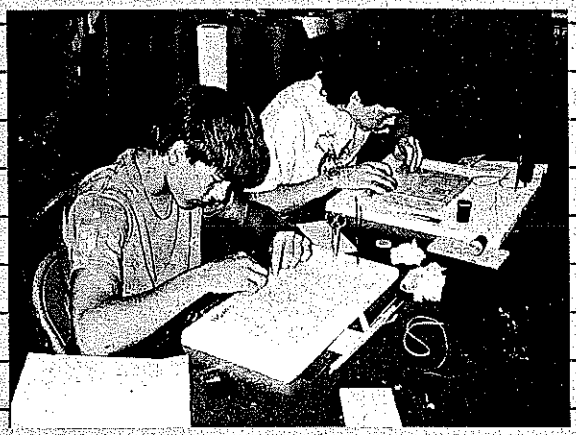
Harry Stewart, president of the club, took on the project using his own easy-to-build, proven design, the #7 trainer. Hand-cut kits, made by the club, made the limited budget go farther. The club also donated used engines, RC gear, and other needed accessories. The remaining expenses were picked up by the $20 fee collected from each student. Since the class was an elective, the fee was reasonable.

The boys were divided into four groups of five, and each group built a model during the semester. The students loved the class, word carried over to the next year, and, by popular demand, the class was repeated.

By the third year, Harry Stewart, Dennis Carlson, Dennis Lupcho, and myself decided to go back to the basics of rubber power and control line flying. We wanted students to build and fly their own models and to have more flying time.

We decided to start with a simple rubber-powered model. Sig's AMA Cub was considered first because of its simplicity and good flying characteristics. However, these boys ranged from fifth- to eighth-graders, and were old enough to do more. We felt that more could be learned from the Peck ROG, Peck-Polymers kit PP-10.

In my mind, the Peck ROG is the best first model for the ten- to twelve-year-olds when experienced help is available.



Jason Mack and Jay Larson building their Sierras. With this second model, we taught the more advanced technique of covering the parts separately.

With less help available, or in general classroom situations, the AMA Cub is a better choice because it is easier to build and will fly well without adjustments. In fact, Gene, Harry, and I successfully used the AMA Cub as a one-month science project in his regular class. The instructors just took over the class while Gene observed and videotaped the magic. The students were already excited and motivated; we just showed them how to succeed.

The project began slowly and deliberately as each step was explained in groups and then one-on-one. The *people helping people* theme that started with a teacher and a club carried through with the students helping other students throughout the project.

In two weeks, when the Peck ROG models were finished, all the kids were excited and anxious to fly. On the first scheduled flying day it rained, but we were able to use the gym for the first flights. Each adult had a bottle of Zap and Zip Kicker to instantly repair models. Repairs quickly became a part of the experience, and those first looks of dismay from a crumpled wing quickly gave way to smiles as we repaired the models and sent them back to flying in a couple of minutes.

Not all of the models were flying as well as we would have liked, but we had not yet given much time to flight instruction. The next day we announced that we were going to trim a Peck ROG to fly three circles within the classroom.

The Peck ROG's main advantage as a teaching model is that it has trimmable paper tabs on each of the flying surfaces, and the landing gear can be bent forward or back to balance of the model. We used Peck 5:1 rubber winders and rubber lube on the motors. We adjusted the power by changing the length of the rubber loop, and used a longer loop to give a long

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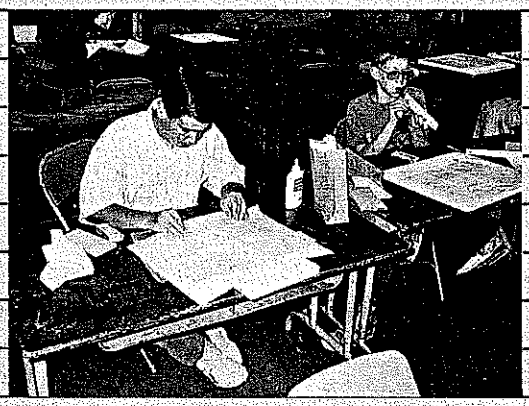
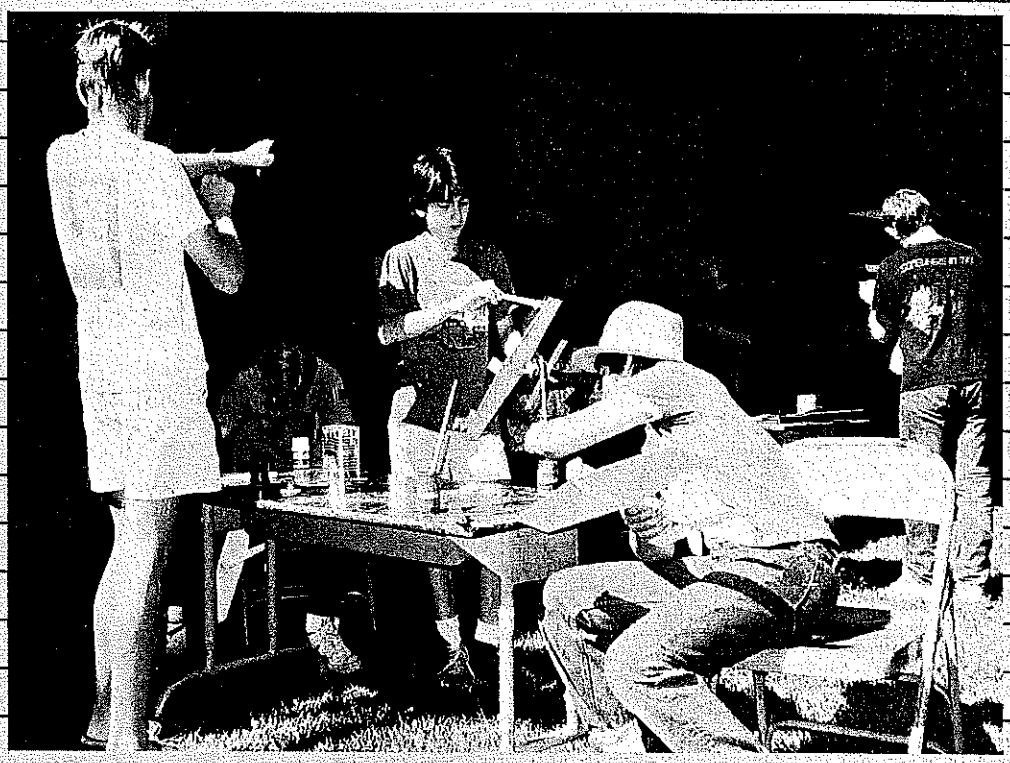


Chip Durgin and James Buckner in the early stages of building the Gilmore Special.

A mass launch of the rubber-powered models to see whose would stay up the longest.



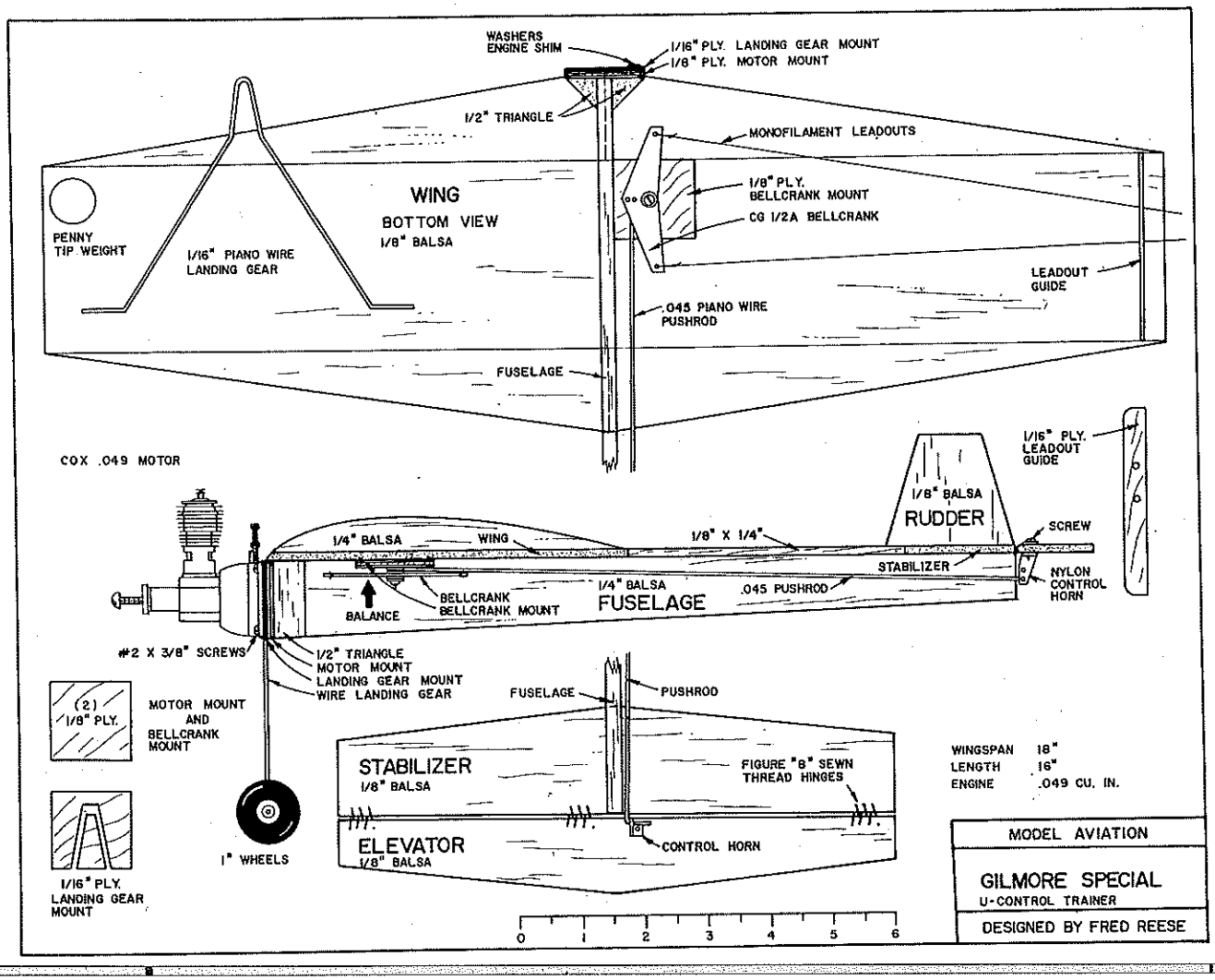
The kids painted outside using model airplane dope because it dries quickly and can be sanded between coats. The Sierra Foothills club donated most of the dope.

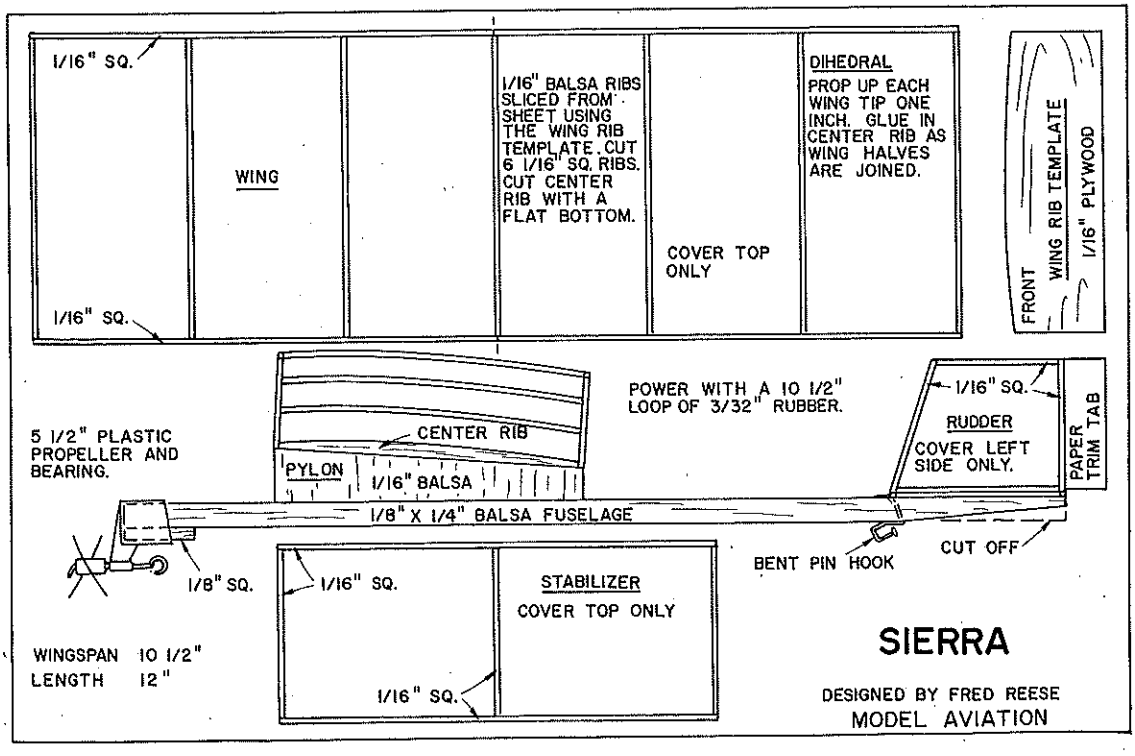
Sierra

The Sierra is a 12-inch-span stick-and-tissue "second" model. Power is a 10½-inch loop of 3/32 rubber.

Gilmore Special

The Gilmore Special is an 18-inch-span all-sheet CL trainer. Power is a Cox Babe Bee .049 with a 5 x 3 nylon prop.


WASHERS
ENGINE SHIM
1/16" PLY. LANDING GEAR MOUNT
1/8" PLY. MOTOR MOUNT
1/2" TRIANGLE
MONOFILAMENT LEADOUTS
WING
BOTTOM VIEW
1/8" BALSA
PENNY
TIP WEIGHT
1/16" PIANO WIRE
LANDING GEAR
1/8" PLY.
BELLCRANK MOUNT
CG 1/2A BELLCRANK
LEADOUT
GUIDE
.045 PIANO WIRE
PUSHROD
FUSELAGE
COX .049 MOTOR
1/16" PLY.
LEADOUT
GUIDE
1/8" BALSA
RUDDER
SCREW
1/4" BALSA
WING
1/8" X 1/4"
STABILIZER
NYLON
CONTROL
HORN
BELLCRANK
BELLCRANK MOUNT
1/4" BALSA
FUSELAGE
.045 PUSHROD
BALANCE
#2 X 3/8" SCREWS
1/2" TRIANGLE
MOTOR MOUNT
LANDING GEAR MOUNT
WIRE LANDING GEAR
(2)
1/8" PLY.
MOTOR MOUNT
AND
BELLCRANK
MOUNT
FUSELAGE
PUSHROD
STABILIZER
1/8" BALSA
FIGURE "8" SEWN
THREAD HINGES
ELEVATOR
1/8" BALSA
CONTROL HORN
1" WHEELS
1/16" PLY.
LANDING GEAR
MOUNT
0 1 2 3 4 5 6
WINGSPAN 18"
LENGTH 16"
ENGINE .049 CU. IN.
MODEL AVIATION
GILMORE SPECIAL
U-CONTROL TRAINER
DESIGNED BY FRED REESE


1/16" SQ.
WING
1/16" BALSA RIBS
SLICED FROM
SHEET USING
THE WING RIB
TEMPLATE. CUT
6 1/16" SQ. RIBS.
CUT CENTER
RIB WITH A
FLAT BOTTOM.
COVER TOP
ONLY
DIHEDRAL
PROP UP EACH
WING TIP ONE
INCH. GLUE IN
CENTER RIB AS
WING HALVES
ARE JOINED.
FRONT
WING RIB TEMPLATE
1/16" PLYWOOD
1/16" SQ.
POWER WITH A 10 1/2"
LOOP OF 3/32" RUBBER.
1/16" SQ.
RUDDER
COVER LEFT
SIDE ONLY.
PAPER
TRIM TAB
5 1/2" PLASTIC
PROPELLER AND
BEARING.
CENTER RIB
PYLON
1/16" BALSA
1/8" X 1/4" BALSA FUSELAGE
BENT PIN HOOK
CUT OFF
1/8" SQ.
1/16" SQ.
STABILIZER
COVER TOP ONLY
1/16" SQ.
WINGSPAN 10 1/2"
LENGTH 12"
SIERRA
DESIGNED BY FRED REESE
MODEL AVIATION

Kids/Reese

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motor run at cruise power.

The kids loved it as we adjusted the models, repaired the crashes, and continued flying. We knew we would succeed making the models fly, and our attitude was as important as the flying. The kids cheered the successes, and we all laughed at the crashes; we learned something from each flight.

After each flight, we would make a change on the trims and explain what we did and why. We made mistakes and fixed them. Pretty soon, the model completed one full circle of the room, so we increased the number of turns on the rubber motor and adjusted the trims until it made two turns. Finally, it made three circles, and I reached out and caught the model as it went by the third time. The kids all cheered and Mr. King captured the flight on his video camera so it could be shared with parents and others. The kids learned that although desired adjustments took time and effort, it was worth it.

When the kids flew their models outside the next day, the average flight times jumped to about twenty seconds, with several flights close to one minute. We were very busy in the winding, helping, adjusting processes. Initially, we did all of the winding, but we smiled when the kids began winding each other's motors.

One of the main objectives of the class was to give as much flying experience as possible. However, it was winter, so we started the second rubber model, Sierra, and flew the Peck ROGs whenever the weather was good. After building the Peck ROG, the Sierra only took a week to complete.

Because it is larger and lighter and because it doesn't have landing gear, the Sierra can fly longer than the Peck ROG. The Sierra uses the same propeller assembly as the Peck ROG and the same size rubber for power. Since the Sierra only has an adjustable tab on the rudder, it was especially important to build a straight airplane. Initial flight trim is done by adding little dabs of clay to the nose or tail or wingtip, depending on what made the model

fly in a gentle, climbing left-hand circle.

The front of the Sierra's fuselage was purposely made a little long and was shortened if the model was nose heavy, dove, or just flew level. The longer fuselage allowed a longer rubber motor, which runs longer. Flight times of two minutes are possible with the Sierra. The simple curved airfoil improves performance and also teaches how to cut out parts and cover a curved surface.

To get maximum performance from any rubber-powered model, the motor should be stretch-wound and a rubber lubricant should be used. Rubber lube, mechanical 5:1 winders, and extra motor rubber are available from Peck-Polymers, or your local hobby shop can order them.

The 3/32-inch rubber motor material comes as a long strip. Cut 18-inch lengths for the Peck ROG and 22-inch lengths for the Sierra. To tie the ends of the rubber strip together, wet the ends and tie a square knot. Pull the knot tight while keeping the knot wet and clip off the excess rubber, leaving ¼-inch ends. Apply the rubber lube before each flying session by placing the motor in a sandwich bag with a few drops of rubber lube, then roll it around in the bag until it's completely coated.

To wind the motor, place the round end of the loop on the propeller hook and have a friend hold the model by the propeller and nose bearing. Hook the knotted end of the rubber on the winder hook, stretch the rubber out to three times its original length, and begin winding. Gradually move the winder towards the propeller as the motor is wound.

The motor is fully wound when the bumps will only move about one inch fore and aft when grasped in the middle. To remove the motor from the winder, grasp the rubber about ½ inch from the winder hook and slide it off of the hook. The end will unwind, leaving an open loop at the end that can then be slipped onto the model's rear hook. Note the bent-pin hook on the Sierra plan that should also be used on the Peck ROG. Bend the pin with a pair of long-nose pliers.

Begin flying both rubber-powered models with about one hundred turns (twenty cranks on the winder). Use the Peck-Polymers flight trim chart (from the Peck ROG kit) to make flight trim corrections. Increase the number of turns gradually, making the necessary trim changes until maximum turns are reached. As the students became more proficient, it was a real thrill to see the sky filled with these colorful little models.

Phase two of the class introduced the students to engine-powered control line, where the aircraft is controlled by the student. The control line project took four weeks to complete; an additional week could be used for more flying. There should be at least one adult with control line experience for flight instruction.

Flight instruction begins with a whip trainer, which is nothing more than a Gilmore Special with no propeller and ten-foot control lines, that is whipped around in a circle. This gives the student a chance to feel the controls.

The whip trainer flies in a nose-high attitude if the student holds full *up* control. It is obvious when the student begins to feel the controls and the nose comes down to level flight. Continuing with the whip trainer, the student learns to climb and dive and then return to level flight.

Initial powered flights of the Gilmore Special were made in the trainer configuration. Control movement was minimized by installing the pushrod in the hole closest to the bolt in the bellcrank and

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Congratulations

DRY-SET Craftsmanship Award winners for 1993:

1993 Greater Southwest Fan Fly
Mike Kulczyk, F-84

1993 Superman Fan Fly
Eric Meys, A-6 Intruder

1993 Scale Masters Championships
Terry Nitsch, F-86 Sabre
Dennis Crooks, Lear Jet
Jeff Foley, Zero

This award is especially meaningful, because the winner is selected by a jury of modelers - and these guys are hard to impress.
Look for us at major events in 1994! We'll see you here next year.

DRY-SET™
MODEL MARKINGS

Kids/Reese

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in the outer hole on the control horn. The landing gear was in place to create more drag and the propeller was installed backwards to give less thrust. These changes slowed the aircraft sufficiently so that all could fly it.

The instructor and student would stand in the center of the circle; the student would hold the control handle, but the instructor would have his hand around the student's. This way, the student could fly the model but the instructor could override. Gradually, the instructor gave the control to the student. It was really fun to see the excitement on the kids' faces as they completed their first flights.

Pretty soon, the students were starting and adjusting their own engines, launching for each other, and helping students who needed more help. As each student got comfortable flying, we turned the propeller around, giving full thrust. Using this faster model, the students developed a new skill level. Finally, we took off the landing gear to reduce drag; the little *trainer* was a little *racer*, and the excitement level was held.

As the students gained more skill, we increased elevator movement, which allowed the trainer to loop, do wingovers, and fly inverted. As the student was ready, the Gilmore Special took the student from training to stunting. In advanced configuration, the Gilmore is fast, agile, and fun to fly. It is also durable and easily repaired.

By using Zap CA Plus glue and Zip Kicker accelerator to set the glue, crashes were only a minor inconvenience. Badly broken models could be repaired and be ready to fly in a few minutes. Crashes did not hinder the training, but in fact, became a part of it. The attitude was: if you fly it, you break it; no problem, you fix it.

For safety we used the Cox #858 Double-Tuf 5 x 3 nylon props with rounded, blunt tips. We bought a gallon of Cool Power 25% fuel. Engines were all Cox #350 Babe Bee .049s. Cox Hobbies has an engine assistance program for schools; contact Don

Hatcher at Cox Hobbies for details. The new engines were trouble-free, started easily, and had lots of power for these models.

Club members prepared the Gilmore Special kits by cutting out all of the wood parts and bending the wire landing gear and pushrods. We bought Carl Goldberg ½A bellcranks and Williams Brothers wheels to complete the package. Both Sig and Carl Goldberg sell good, inexpensive packaged control handles and line. If you would rather use a commercial kit instead of the Gilmore Special, you could use any of the Midwest ½A profiles, the Carl Goldberg Swordsman, or the Sig Deweybird or Skyray, and follow the same instruction procedure.

With the experience of building the rubber-powered models, our students built the Gilmore Special in just a few days and then spent another two days painting them. The club donated many bottles of paint for the class, so the models were of every color. We moved tables covered with newspaper outside the classroom for the students to paint the models. The next day we brought in a drill and mounted all of the engines, bellcranks, and control horns, hinged the elevators, and they were ready to fly.

All of the students learned to fly control line with their first models, and by the end of the project we adults could just stand around most of the time, watch the students fly, and take care of themselves. It was very satisfying for us, and the kids not only had a great time, but learned a great deal as well.

Perhaps more teachers will initiate this type of project, with or without the aid of other modelers. Perhaps more clubs will approach schools or teachers and offer their help. We all felt that the kids benefitted from seeing different adult role models. It is nice to think we are initiating a lifelong hobby, but realistically, only a few will actually pursue it after the class. However, the class does teach skills and attitudes that are important in life.

Following directions, reading plans, completing a project, measuring, predicting cause and effect, manual dexterity, use of simple tools, the thrill of flight, consideration of others, and value of their own labor are all lessons to be learned.

Times have changed, and there is a lot more competition for a child's free time than when I was a boy. Many children never learn skills that we now take for granted. Too often kids ask me where I bought my airplane, never considering it could be hand made.

Modeling instills a pride in one's work, and that may be the most important lesson of all. ✈