

Early RC Models'

H-Ray



By Chris Susicke

This expertly replicated kit is a blast from the past that still looks and flies great!

PHOTOS: FRANK FANELLI

Early RC Models offers exactly what their company name implies; that is, high quality laser cut kits of some of the most well known R/C designs of the 50s, 60s and 70s. They have stayed very true to the original designs, while also making subtle improvements for the sake of easy building and laser cutting technologies. What we the modeler get is an accurate reproduction at a fraction of the cost of hunting down an original kit, with much higher quality and precision cut wood.

This review focuses on one of Lou Andrews' most well-known and successful designs, the *H-Ray*. The "H" denotes that it has a high wing. Although this particular design first flew well before I was born, its traditional trainer-like layout promises to be forgiving and easy flying. Early RC Models has faithfully reproduced the kit from original plans with just the above-mentioned deviations. Let's get building!

The construction of the *H-Ray* is rather simple with no surprises along the way. I found all of the wood to be of excellent quality, and the laser cutting was top notch. Note that you get very little hardware in the kit, with the exception being

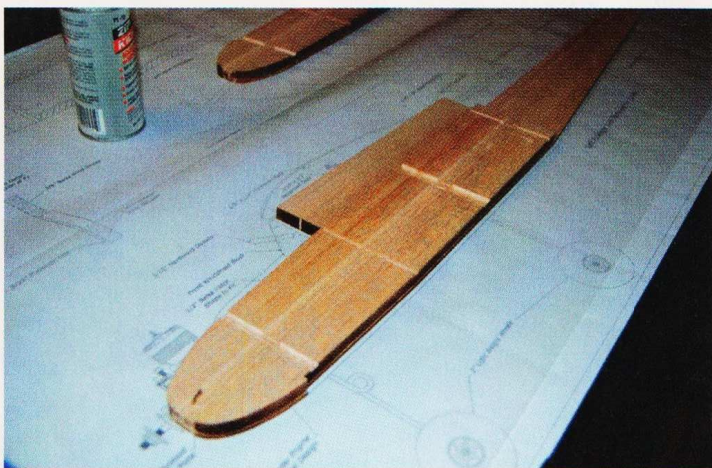
the nose wheel bracket. You will need to provide your own pushrods, control horns, etc. Its relatively small size means you can build it on a small bench (or in my case, a coffee table)! You begin with the fuselage sides, which are constructed on the wax paper covered plans. Making sure to make a right and left hand side, piece together the outer sides, doublers and wing saddles. The firewall is laminated and the engine mounting rails are installed. The nose gear bracket is also mounted to the firewall.

A note here: The rails are long and thick, and will get in the way of mounting a modern fuel tank later. I recommend cutting them off after the firewall as opposed to leaving them full length. Otherwise you



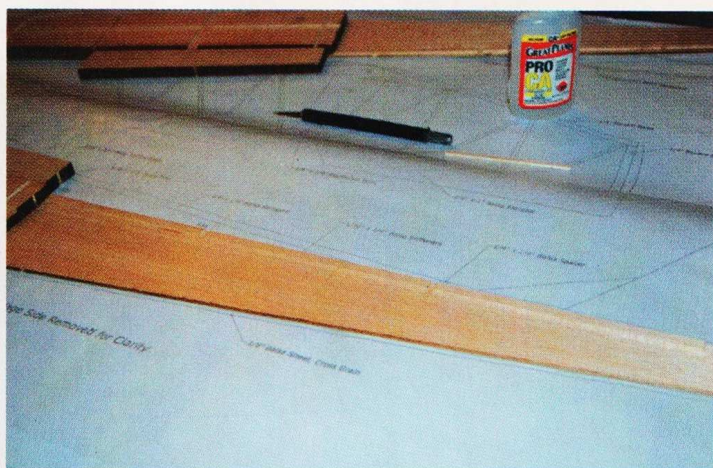
AT A GLANCE

Type:	vintage replica R/C trainer
Construction:	balsa and some ply
Wing span:	49 inches
Airfoil:	flat bottom
Length (overall):	37 inches
Weight:	2.5–3 pounds
Engine:	.10–.19 two-stroke
Radio:	1–3 channels 3 micro servos used
Manufacturer:	Wing Manufacturing
Dist. by:	Early RC Models 100 Eagle Drive Galesburg, MI 49053 Phone: (269) 665-9630 www.earlyrcmodels.com

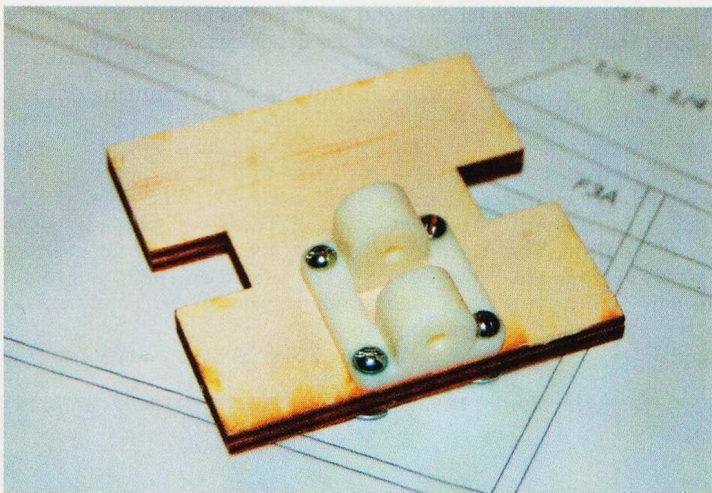


PHOTOGRAPHY: CHRIS SUSICKE

Construction of the *H-Ray* begins with the fuselage sides (above left, right). Thick doublers and stiffeners are added to the balsa sheet sides. The firewall is laminated and the nose gear bracket mounted (below left). The hardwood



engine mounting rails are glued into their slots in the fuselage doubler (below right). Chris recommends cutting them to end at the firewall instead of extending so far aft. This lightens the nose and makes fitting a fuel tank easier later.

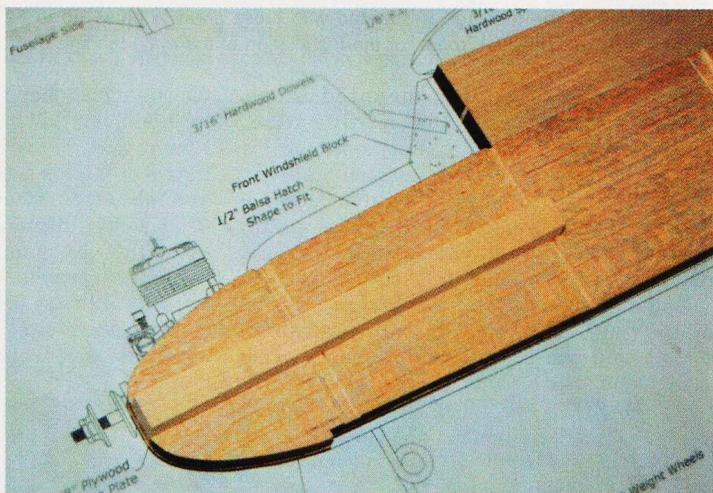


may need to grind them out later, which I found myself doing. You will also lighten up the nose of the *H-Ray*, which is very beefy. If you are electrifying your *H-Ray*, you may want to eliminate them altogether.

Now the firewall and first bulkhead are glued to one fuse half, and then the other half will be installed followed by more bulkheads. A few stringers are added, followed by the windshield block, main landing gear, front hatch and bottom sheeting. The one-piece main gear is sandwiched in between two pieces of plywood, and the assembly is slid into its plywood slot. Sand

the fuselage to shape, and put it aside.

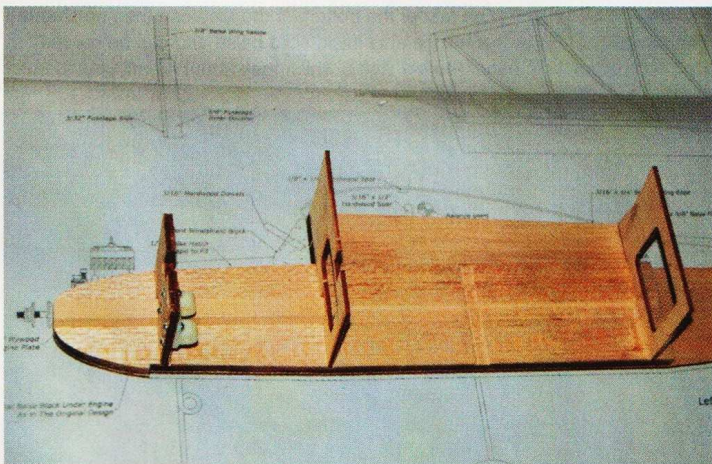
The wing has a flat bottom airfoil and is rectangular, so building it is very simple. The front and rear bottom sheeting is pinned to the plans, and built on them. The lower spar and leading and trailing edge stock are glued to the sheeting. Ribs are then slid and glued into position. Care must be taken to get the proper angle on the root ribs on each wing so that the dihedral is correct. The ply joiners can be used as a guide here. The upper spar is dropped in, and the wing can be sheeted and cap stripped. Repeat this process to



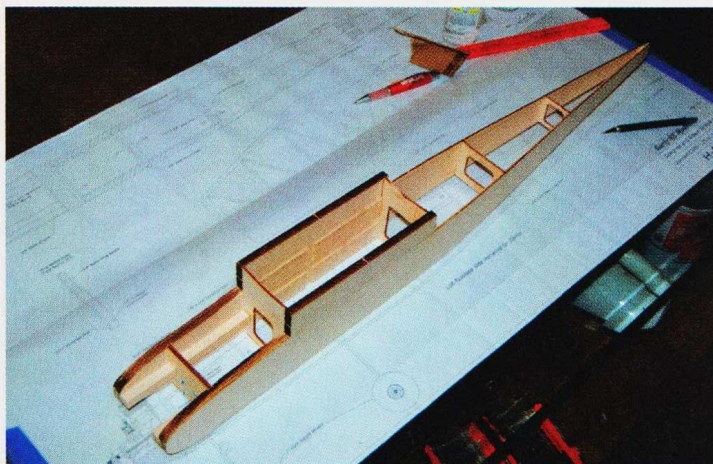
generate the other wing, then epoxy them together and set it aside to dry.

The vertical tail and rudder are sheet balsa. The horizontal tail is built from sticks over the plans. The elevator is 1/4-inch balsa with a ply joiner. A nice and simple design that is also very lightweight.

Once all of the construction is done, give the whole airframe a good sanding. Shape the leading edges and make sure to bevel the flying surfaces to get proper travel. I hinged my rudder and elevator at this point with CyA hinges, which were

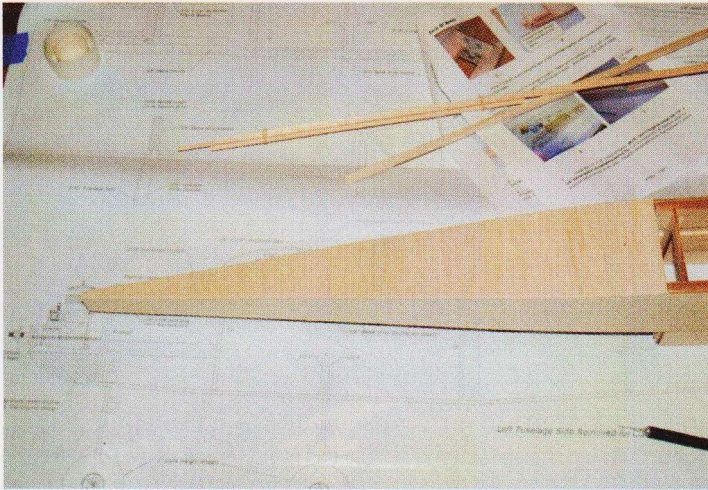


The firewall and first two bulkheads/wing saddles (above left) are glued into one side of the fuse. They fit neatly into the pre-notched doubler. Note the orientation of the nose gear bracket. The other side of the fuselage is then glued

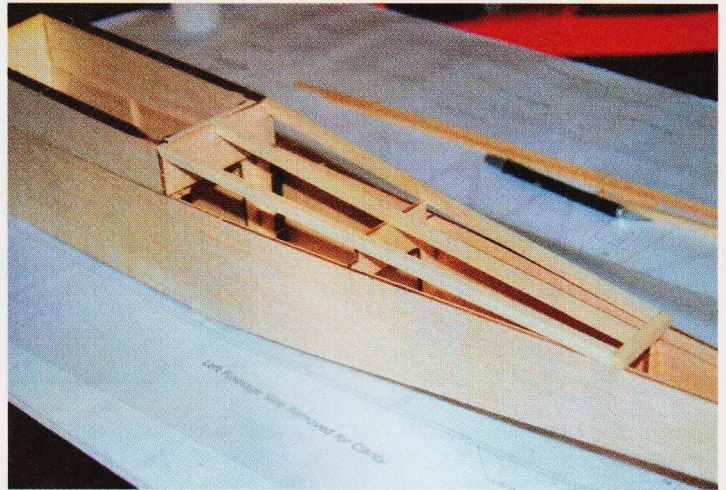


on top of this. The tail end of the fuse sides are joined, followed by the installation of the remaining bulkheads (above right). Be sure that everything is in proper alignment otherwise you will end up with a crooked structure.

H-Ray



The bottom of the fuselage is sheeted with cross grain 1/8 balsa up to F2 (above left) which leaves room for the installation of the main landing gear.



The 1/4 square stringers (above right) are glued into position to form a nice sloping angle to the tail. The rigidity of this design becomes apparent.

trimmed down. I also mounted some wheels and my powerplant at this time. The recommended motor size is one of .10 to a .19 displacement (or electric equivalent), but I installed an old Enya .25SS I had kicking around. Mounting the motor now will allow you to check the c.g. before installing any radio gear.

You can cover your *H-Ray* in one of many ways. If you really want to go old school, you can use silk and dope. I opted

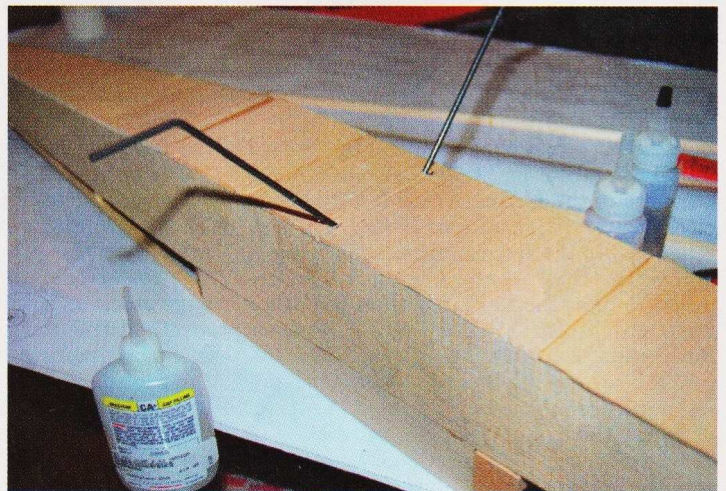
for the more user-friendly iron-on variety. To honor Halloween, my favorite holiday, I went with black and transparent orange Ultracote. This easy to apply covering is available from www.HorizonHobby.com. I used some automotive pin striping available from AutoZone for added flair. The windows were cut from trim sheet. Beginners should be sure to come up with a scheme that is easy to see in the air to eliminate orientation issues.

Next, install the wing mounting dowels. Waiting until the airframe is covered makes this process much simpler. I applied some thin CyA to seal the dowels against nitro exhaust. With the engine mounted, install the wing with some #64 rubber bands. Now check your balance against what is shown on the plans to get an idea of where you want to install your radio gear.

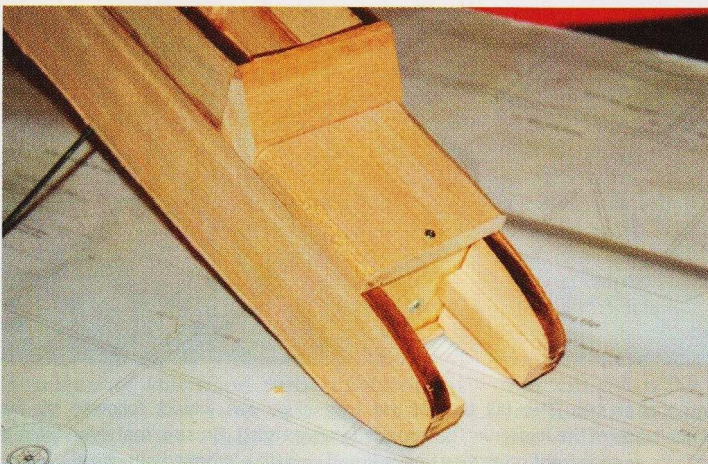
My Enya .25 is a little large for this

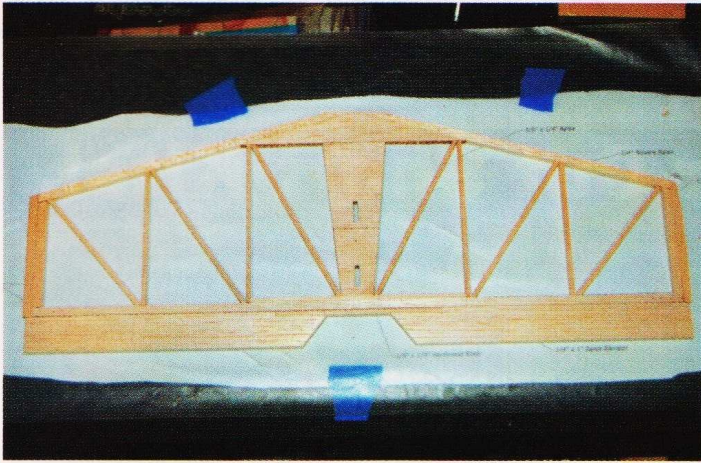


There are many areas of the *H-Ray* where you can get some easy weight reductions. This solid hard balsa windshield block (above left) can be hollowed. The one-piece main gear was sandwiched between some ply and epoxied into

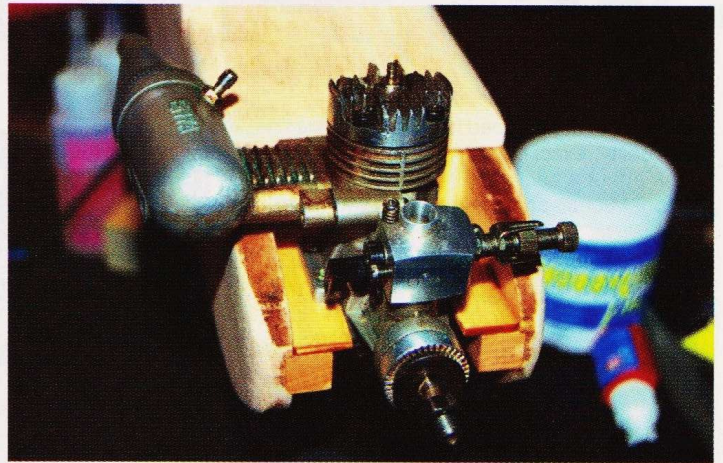


the fuse (above right). The rest of the bottom of the fuse can then be sheeted. The forward hatch (below left) is also thick, solid balsa and can be carved out. One completed wing panel (below right) which took about 45 minutes to build.





The horizontal tail is built right over the plans (above left). Easy, straightforward and quick. Although not much to look at, Chris' dependable Enya .25SS gets mounted into the nose of the *H-Ray* (above right). Note that this motor is larger than the maximum recommended .19, but it fit nicely and



was on hand at the time. It will prove to be more than is necessary. The shaped, sanded and nearly completed *H-Ray* looking like a bleached carcass in the sun (below left). The Halloween-ishly covered *H-Ray* awaits its maiden voyage (below right). Although decades old in design, it still manages to look good.

PHOTO: FRANK FANELLI



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model, so I found that I needed to mount my radio gear further aft. No clues are provided in the manual as to this process, but some basic modeling experience is all you need to figure it out. Some hardwood square stock can be glued in the fuse to mount servos. For weight savings, I used micro servos on the throttle, elevator and rudder/nose gear control.

Flying the *H-Ray* is exactly what you would expect. The flat bottom airfoil and generous dihedral offer slow, stable and forgiving flight. I found that the .25 I installed is much more than enough for sprightly performance, and that the recommended range would suffice for a new pilot. It would also be an excellent candidate for quiet and clean electric power. Take-offs are easy and straightforward, and landings are as simple as lining up and lowering the power. The *H-Ray* is also capable of loops, stall turns and even some inverted flight. All-in-all a pleasure to fly!

The Early RC Models *H-Ray* is an excellent first airplane for several reasons. In the day and age of the ARF, learning how to build your first airplane gives a new pilot a real advantage. It shows new pilots how an airplane is built, and why it is built the way it is. They can also learn how to fix airplanes themselves, since they now know the construction. There is also a certain kind of pride that comes with it.

I cannot count the beginner pilots I have seen crash an airplane, and then be clueless as to how to fix it. This leads to discouragement. The build time is very low, and the *H-Ray* can go from sticks to the

sky in less than a week. Its small size allows for easy transport, but it is not too small as to be squirrely. Early RC Models has really nailed this "better than original" replica of a legendary model.

PHOTO: FRANK FANELLI



The *H-Ray* climbs out in what will prove to be another successful and leisurely flight.