

# Hanriot HD 1

by Tony Eck



Some dihedral is lovely to have, it forgives your sins of steering. A pot becomes your cowling. Beneath: All that area enhances the glide. "Hanriot" adds one more WW-I silhouette to the sky.



Fly back to WWI with this R/C fighter that was designed by the French and made famous by Italians.

The "Hanriot" was a fragile looking biplane that has been largely ignored by history. Rejected by the French in favor of the "Spad," it was used as the standard fighter by the Belgians and the Italians. This 28 foot wingspanned aircraft was powered with a 110 horse Le Rhone rotary, which gave it a noteworthy top speed of 116 mph and a ceiling of 23,000 feet. The "Hanriot" was far stronger than it looked, and it was extremely sensitive on the controls.

When the first "Hanriot" was ferried into Les Moeres, De Meulemeester, a man not given to change, took one look at it and turned it down flat, as he had done previously with the "Spad." Mr. Olieslagers who had next crack at it turned it down also. She's all yours Willy.

The man and the machine became one in Willy Coppen's romance with the "Hanriot." He could make it do the impossible. On one occasion the engine quit on takeoff at about 200 feet as he was pulling up in a steep right-hand chandelle. After he completed the turn he dove at the field and floated gracefully into a three-pointer, scattering the crowd that had run out to pick up the pieces.

Our model is built to a true scale of 2" to the foot. While an examination of the plan will give you an insight into the building procedure, I will give you a few pointers to guide you on your way.

## Assembly Notes

The model is constructed mostly of spruce and bass wood. Basically the fuselage is just a normal flat side, with a turtle deck and front sides which are added after the basic construction. The forward area from F-2 to F-7 is covered with  $\frac{1}{16}$ " plywood, followed by .010" aluminum over the plywood sheeting, bonded on with a contact adhesive.

The cabane struts are made up by soldering flat steel stock together and then capping with hardwood. Be sure to wrap the struts with silk or nylon for added strength.

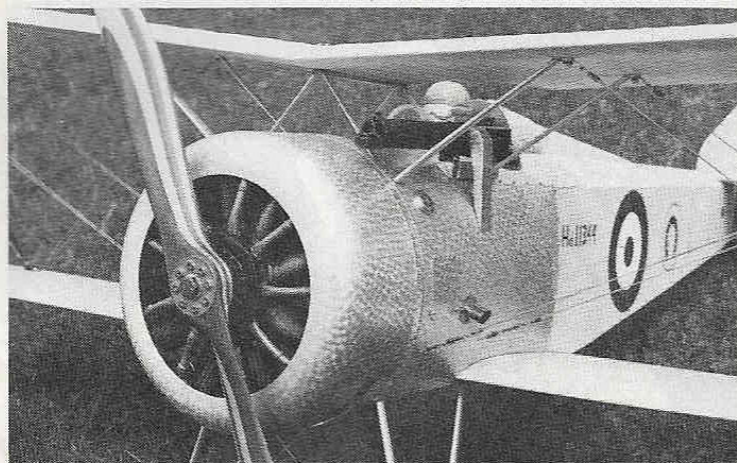
The extreme rear of the fuselage is left uncovered as per the full size aircraft. It was the vogue at the time, so the choice is not ours.

If you study the plans you will see that a  $\frac{1}{4}$ " dia. tube is used to create the vertical post, and  $\frac{3}{16}$ " dia. tubing is used from the longerons to the post. Four pieces are used and they are soldered together to make up a strong mount for the rudder.

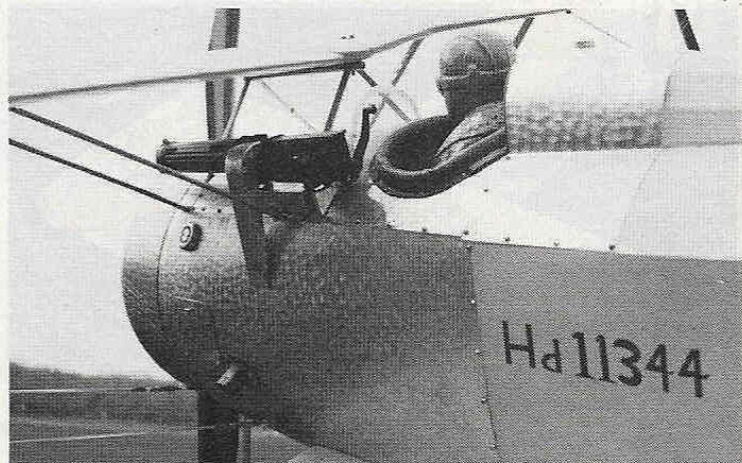
The landing gear is assembled from  $\frac{5}{32}$ " dia. music wire, silver soldered together as shown in the front plan view. This assembly is then bolted to the  $\frac{3}{8}$ " sq. hardwood blocks.

## The Wing Structure

The top and bottom wing panels are built upon a flat board, each one apart from the other. I used  $\frac{3}{16}$ " dia. arrow shafts for the main spars, though you may use  $\frac{3}{16}$ "



It's 2" scale if you want a dummy radial mill to view within the cowl. A Ross Twin behind the scene is perfect power. 1½ degrees right thrust.



A war of long ago. A pilot and his guns, upon a spruce and linen steed. Structure is angular and almost devoid of curves, an easy ship to frame.

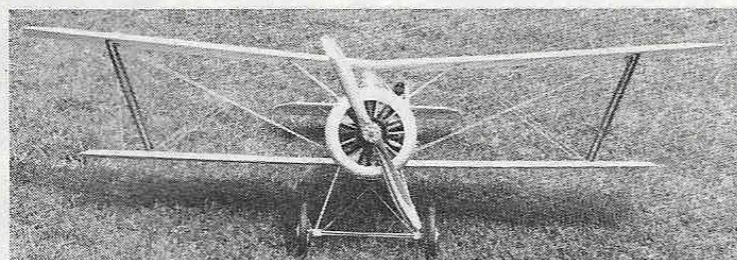
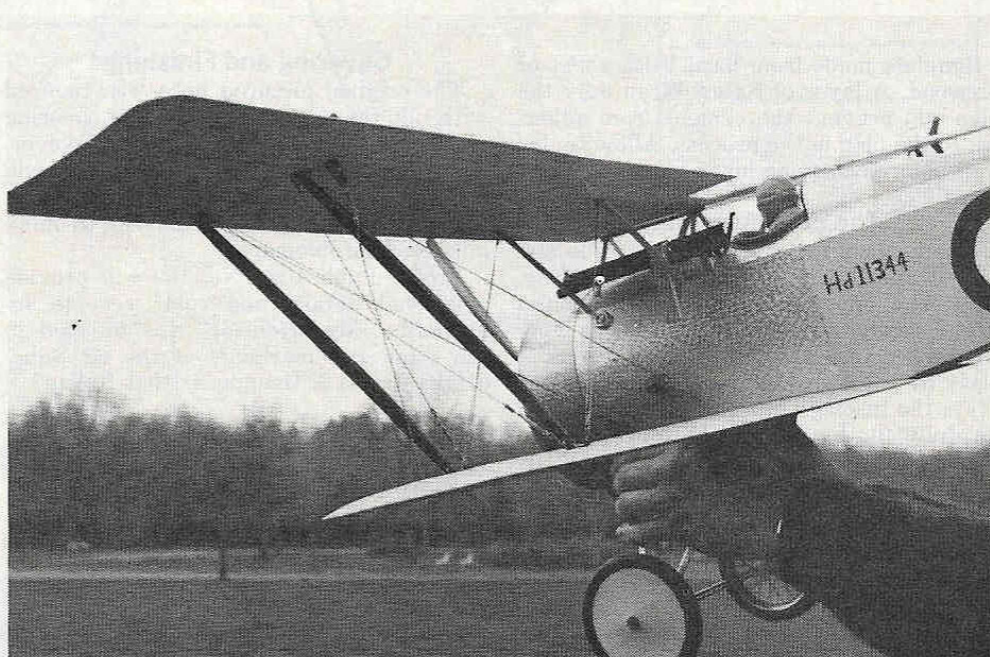
sq. spruce if you prefer. I found the arrow shafts made it easier to drill and line up the ribs. This is something for you to consider in view of the slender airfoil sections within which you must work. 3/16" plywood and 3/16" sq. spruce strips form the wing tips, against which the arrow shafts terminate. Where the lower wing panels meet the fuselage, allow the arrow shafts to protrude as shown on the plan so that they can be inserted into the fuselage.

I decided to use a scale cable hook-up for the ailerons and it worked very well. In joining the two top wing panels you must be careful that the two panels are in line so that you do not wind up with swept wings. The dihedral is 8 degrees total. Raise one wing panel to this angle with the other flat upon the bench.

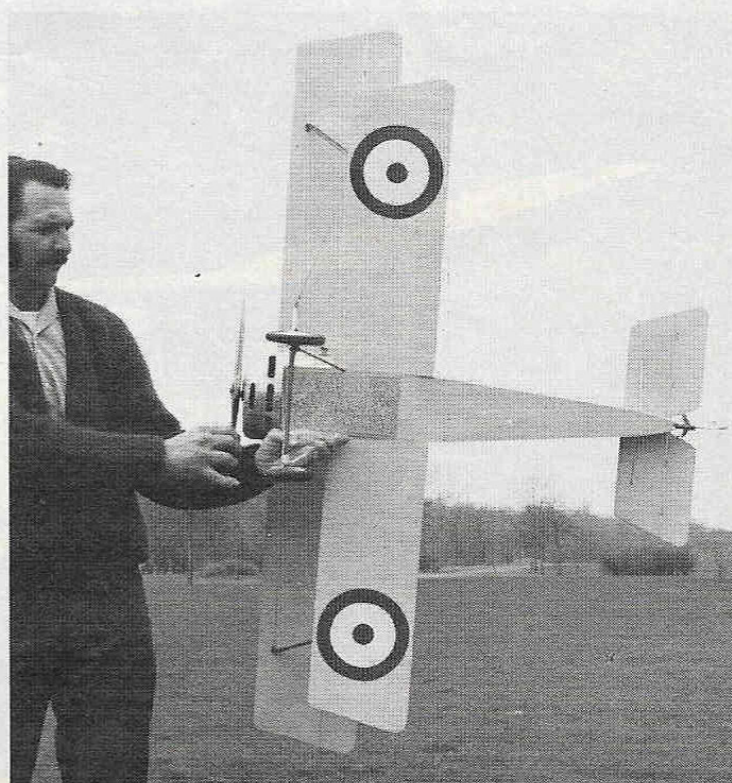
### Rudder, Fin and Stab

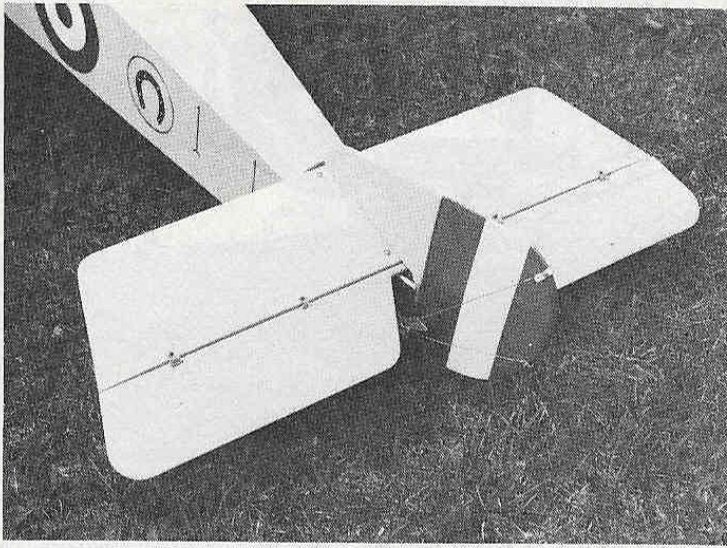
The tail surfaces are simple in structure, except perhaps for the leading and trailing edges. They are laminated from three pieces of 1/16"x3/16" spruce, bent around

Arrow shafts for spars, stringers of spruce and ribs of balsa. Toughness is built in. The thin undercambered airfoils, biplane rigging and the scale details mark it for the advanced modeler.

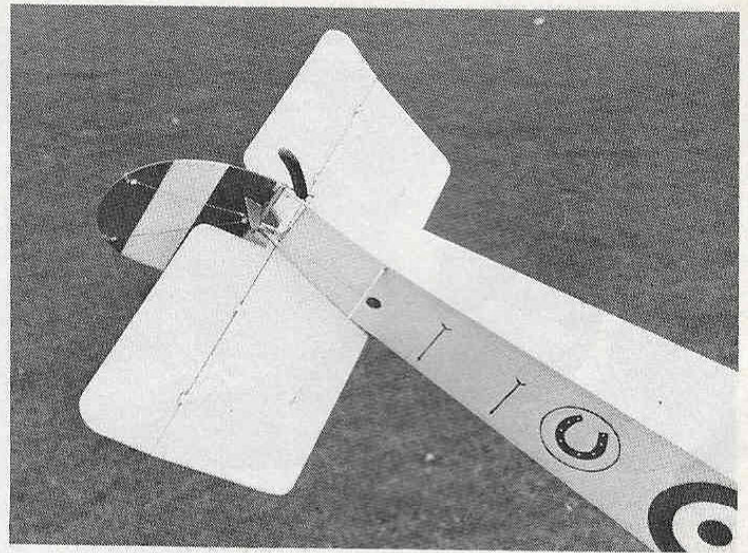


A "Hanriot" once was a warplane. Time and technology travel ever onward. At right: Bottom side up, wing planform's visible, enough to float upon. Below: Tony's daughter Lisa claims the ship, the law of salvage I guess.





Laminated edges, a little work, but you'll like the end result. A technique with many practical applications. Thin spruce layers bent around a form.



Cables to controls. A close up of the tail feathers, the rigging, skid. Below: Forsythia in bloom, end of a winter's effort. Awaits Rhinebeck.

a template made from hard balsa sheet or plywood. A layer of Saran Wrap over the plan will prevent the cement from adhering to the plan in the process. Allow to dry well before removing inner template form.

### The Final Assembly

The vertical fin is first glued to the stabilizer, and this is then bolted to the fuselage. The upper wing is likewise bolted to the cabane struts, while the lower wing is plugged into the fuselage and held in place by the flying wires.

Fix the fuselage to a flat board and then carefully fit the top and bottom wings to obtain the correct angle of incidence. This is important, so keep at it until you are sure it is right.

### Covering and Finishing

The original pictured here was covered with silk, though you may use any covering of your choice. Do keep in mind however, while the structure is quite strong, it will warp if you are not careful. Try to apply the covering with equal tension to minimize such problems.

Profile Publication No. 109 will provide additional details and color scheme information. My "Hanriot" was finished in the color and markings of the 82 Squadriglia Caccia X Gruppo. Is that Italian?

### The Nervous First Flight

Please be certain the model's C.G. is correct. The original weighed in at 6¾ lbs. ready to depart.

Aim the frame into the wind, poised with the engine just ticking over. Go right to full throttle and let the model roll until the tail comes up flying by itself. At this moment shade in a little up-elevator and your "Hanriot" will become unstuck. It climbs out well, but get some height before feeling it out in the turns. The ship tools around nicely with a scale-like speed and realism in flight, though you should keep your airspeed up until you understand the design. When the suds in the tank are at low tide, ease the throttle back and make some landing approach passes. It comes in on final well with good touch-downs and ground handling qualities for a World War I bird, but fly it on and keep it moving. Good luck and soft landings. ☺

