



TOM HICKS

Minute Man

When the author saw Minute Man in a 1941 Popular Science article he was immediately drawn to the all-balsa construction and shinky yet streamlined nature of Frank Zaic's Free Flight design. But in those days, he wanted a cabin with windows.

It's never too late to build your childhood dream plane.

WHEN I was about 12 years old, I came across my dream plane. Published by Frank Zaic in the June 1941 issue of *Popular Science* magazine, it was called Minute Man. No, I didn't build it then. Why? Because at that age, I just had to have a cabin with windows.

What I liked so much about this model was that it was made entirely out of balsawood. Though I liked tissue-covered models, I'd gotten tired of the holes they acquired after landing in a bush, so I'd begun drawing up my own plans. I made a lot of good-looking planes, and they really flew great.

But I never forgot Minute Man. Fifty years later, when I discovered that my local library was able to obtain plans again, I just had to build one.

Minute Man isn't really a beginner's model, so it's definitely best to carve your own prop as Frank Zaic suggests in the *Popular Science* article reprinted below. Sure, the plane would fly great with a plastic prop, but not as great as it does with a wooden one.

Frank Zaic's article will tell you how to build a Minute Man, although I did revise the construction in a few respects.

I left the propeller blades a little thick

so they wouldn't break too easily.

Since I had some good 1/16 sheet wood on hand, I simply sanded it down to about 1/20 for the wing and tail.

And I'd like to remind you to take your time in cutting and lining up the 1/16-sq. fuselage cross braces.

I made the freewheeler a little different from Zaic's version, since I think it works more easily. Break in and lube the rubber. Put in a few turns at first, and try a few short flights. If everything seems okay, really crank in some turns and let her go.

Remember, your model can go a long way on a one-minute flight.

Here's the article that Tom Hicks never forgot. Reprinted from *Popular Science* with permission (c) 1941, Times Mirror Magazine, Inc.

**The Minute Man
By
FRANK ZAIC
Editor of the
"Model Aeronautics
Year Book"**

THIS little plane, capable of flights of over 2,000 feet, can be built and

launched in less time than is usually required to construct the fuselage of more complicated models. Its sturdy, simple design is an instructive example of what can be done with lightweight and quarter-grained ("C" cut) balsa sheets (see P.S.M., Dec. '40, p. 198).

In selecting the balsa, see that it is light and shows the speckled surface which identifies "C" grain. Cut the fuselage and wing parts cleanly with a sharp blade to produce smooth edges. The dimensions of the fuselage cross braces should be taken from the numbered scale which appears in the drawings. Notice, in the detail of the nose, how the eight braces are offset for maximum strength. Spread cement carefully along the full length of the edges when assembling the fuselage. The top and bottom sheets are trimmed flush with the sides after the cement has hardened.

The wing camber is obtained by moistening the under surface with water, and allowing the single end rib to extend the camber along each wing. The sheet may at first tend to curve upward, but will assume the proper downward curve as it dries. When it is quite dry, apply broad streaks of cement



Left: Minute Man poised for launch. The author modified the original freewheeler for easier operation. Right: This FF is made for brief, exciting bursts of flight. They'll be more exciting yet if you carve your own propeller rather than tacking on a plastic one.

test flights have been made, or when the motor is to be wound up for maximum duration (700 turns), the nose block should be given about $1/16$ " right thrust. Only experiment will determine exactly the correct amount.

Before flying it under power, test the model's glide. Move the wing back if the ship stalls, or forward if it tends to dive. The rudder may be warped if a circular flight is desired. After a smooth, flat glide is obtained, make a test flight with the motor partly wound, and correct the wing setting if necessary. Once the adjustments have been made, the ship should readily make flights of more than a minute's duration in calm air.

Simplicity and sturdiness are the keynotes of this all-balsa design. Study the plans before starting work.



FF Minute Man

Type: Outdoor
Wingspan: 20 inches
Wing area: Not available
Recommended size of rubber motor: Six strands of $1/8$ -in flat rubber (8-ft. strand)
Expected flying weight: Not available
Type of construction: Built-up
Type of covering/finish recommended: None

List of Materials

2 pc. "C" cut balsa $1/32$ " by 2" by 36" for fuselage.
 1 pc. "C" cut balsa $1/20$ " by 3" by 36" for wing and tail.
 2 pc. hard balsa $1/16$ " square by 36" for fuselage braces.
 1 pc. balsa $7/8$ " by $1 1/8$ " by 8" for propeller.
 1 pc. balsa $1/4$ " by 1" by 2" for nose block and fairing block.
 1 pc. 0.034" piano wire, 24" long, for landing gear.
 1 pc. 0.020" piano wire, 3" long, for freewheeler.
 8' rubber strand, $1/8$ " flat (brown).
 1 pair hardwood wheels, 1" diameter; 4 washers, $3/16$ "; 2 shaft bushings, $1/2$ " long; cement, celluloid, bamboo, rubber bands. Estimated cost: about 35 cents.

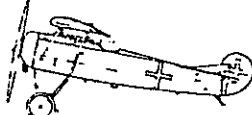
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