

# HERE'S A FAMOUS OLD BIRD . . . . BRING IT TO LIFE AGAIN TODAY . . . R/C WACO 'E'



WACO E was the fastest airplane in its class in 1940. Model is a bomb at full throttle also. Note anachronism of jet in background. Photos by Bill Bell.

## By WALT MITCHELL

As you will learn from the yellowed tearsheet of the 1939 WACO NEWS on the opposite page, the Waco Model E was a very advanced airplane for its day. The NEWS brags, "Boy, would you look at the lines on that baby." And you would have to agree. It was a trim old bird. And when you think that it was hauling pre-World War II business execs here and there at an average speed of 200 MPH, with a top permissible of 300 MPH . . . Well, those who were after contracts by train and Greyhound were at something of a disadvantage.

The Waco E, or "Aristocrat" as it was called, was the Lear Jet of its day, and its 5-place interior was appointed with comfort and distinction. It could go 1,000 miles with a full load of fuel in its neoprene tanks, and its large electrically operated flaps made it docile on take-offs and landings, despite the claim that it was the "fastest plane of its type and horsepower ever built."

The completely sealed, flush cowling was an integral part of the fuselage, and apparently one of the distinguishing characteristics of the airplane. Unfortunately, while constructing the model I didn't have access to the WACO NEWS, hence the

non-scale cowl and other variations. More on this later.

Right now, I want to tell you that this multi-proportional radio gear is the greatest thing since girls. It enables the dedicated scale buff to bring practically any old favorite back to life and signals a decline in look-alike pattern aircraft, including Taurus, Son-of-Taurus, and I was a Teen-Age Taurus. If you don't have enough money to buy multi-proportional goodies, steal it. Although I do not ordinarily advocate civil disobedience, in this case the end justifies the means.

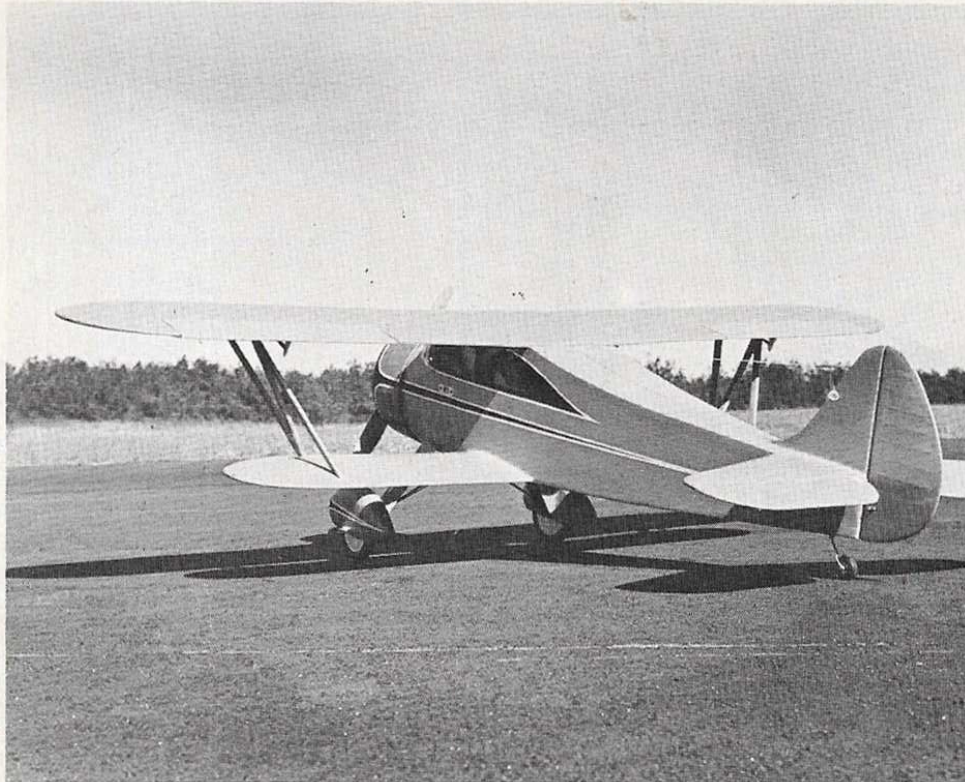
Back in the days when I was an oppressed single channel boy, I was committed to the defense of superegen receivers against the power-mad onslaught of the multi elite. In those halcyon days I swore: "If I ever get rich enough to buy multi equipment, I will not forget; I will do everything in my power to help the poor single channel boys." Now that I'm rich and have Kraft proportional, I say to hell with them. All the way is the only way.

Perhaps I might still be trying to fly single channel (with seven cascaded escapements) had it not been for the untimely demise of my Uncle Charles, the

Rich, who left me the handsome sum of \$502.31. I was always the apple of Uncle Charles' eye, and he constantly assured my mother that my interest in toy airplanes would eventually be rewarded by a cushy job in aviation. He was a visionary, he was, and I well recall his prediction in 1963 that the airlines would eventually outstrip the railroads as a means of business travel. Has time not proven him right? Eh? Has it not?

Ah, Uncle Charles, if you could be here today . . . I think of you constantly and I sorrow. You had promised me a ride in a real airplane on my 40th birthday.

Yet I digress. Back to the ancient bird. The excellent U-control kit of the WACO SRE by Sterling provided the basis of construction (if you are a Ukie, don't miss this one). The 33" span of the kit was expanded to 54" and the tail surfaces were slightly enlarged as a precautionary measure. After construction was 90% complete, I learned that my friend Hollis Sanders had located a Waco E wreck, the 1939 WACO NEWS, and a Waco E instruction manual. Hollis, incidentally is a REAL pilot and a card-carrying member of the Antique Airplane Association. Nice guy, but man if you think R/C



WACO confidently faces the challenge of the skies.

pilots are nuts, you ain't seen **nothing** yet. The boys who restore and fly REAL antiques are really out of their trees. Can you imagine going up **yourself**, rather than sending a radio and four or five servos?

The drawings reflect changes from the prototype as a result of consultation with additional authentic data . . . flush cowl, aerodynamically balanced tail surfaces, etc. By adding your own first-hand knowledge of detail, you may well become the first 30-year-old kid (40- 50- 60?) on your block to build a truly scale Waco E "Aris-

toerat."

The drawings also show placement of front seats and the throwover steering column. I had planned such cockpit detail, but couldn't figure out what to do with the 12 oz. gas tank which extends right into the middle of all this. Knowledgeable friends suggested pressurized tanks located elsewhere, but this is beyond my technology at the current time. If you can solve this problem, I would appreciate knowing how. Remember, the short nose moment requires that weight to be kept well for-

Six-year old kid watches 38-year old kid at play.



ward. (It's interesting to note, however, that the prototype ended up nose-heavy, so perhaps the weight problem is not as critical as one might assume.) In flying trim, my Waco balances at about 40 percent of the chord of the upper wing. The Enya 60 and a 13.5 prop provide more than adequate power; in fact, it is a bomb at full throttle. Flaps would be a good idea, if you can arrange them.

Later data secured from the "Experimental Aircraft Association 1963 Pictorial" and from Lenox Toy & Hobby Shop's Knight Culver (who is a treasure-trove of information on early aircraft) indicate that at least **some** Waco E's had fabric covered fuselages with four exposed stringers on each side. It is known for sure that wings and horizontal stabilizer were covered with plywood, which accounts for the minimum external strut bracing. The only bracing other than the interplane struts were the double landing and flying wires. The prototype is entirely sheeted except for control surfaces, which are fabric.

### BUILDING IT

If you're at this stage in modeling dementia praecox, details on construction are wasted breath. You're going to do it YOUR way, regardless of what I tell you. I would only warn you . . . order the plans. It won't do to modify a Kwik-Fli. You will lose a lot of scale points if you don't show up with at least two wings and wheel pants. Besides, when you send Fearless Leader money for plans, it makes him happy; and happy leaders make for happy boys.

I feel compelled, however, to make a **few** suggestions and hope that they will be civilly accepted in the manner intended:

1. Be sure wing-stabilizer incidence is zero-zero. If anything, the upper wing should be slightly negative.
2. I would be the last to suggest deviation from scale, but the oversized cowl on the prototype has several things going for it. Leaving  $\frac{1}{4}$ " of air around the firewall keeps your 60 from overheating and allows it to be fully hidden. Best of all, you can go to Sears-Roebuck and buy an aluminum saucepan, which constitutes the cowl on my Waco.
3. Fuselage construction begins with cutting two slab sides from  $\frac{1}{8}$ " sheet. Everything is ducky til you start the transition from the boxy rear to the completely round firewall. Squaring the circle or vice-versa ain't easy, so pay attention to what you are doing at this point . . . if you use the flush cowl, the bottom of the fuselage will taper to **front** of the cowl for full round rather than to the firewall. This means that former "A" will not be completely round, but somewhat pear-shaped. The reason for this will become apparent when you reach this point.
4. Bend a little toe-out into the landing gear. This helps keep a tail-dragger from dragging a wing while you are fighting ground-loops. I didn't use brakes and have not found them necessary.
5. Rubber band wing hold-downs just won't get it for scale. Your friendly hobby shop has threaded wooden blocks

and nylon screws for this purpose, or you can improvise. Refer to the drawings for details. Don't worry about "knock-off" wings. If you dump an airplane of this size and power, you've had it anyway. In my opinion greasy rubber bands are on the way out, and good riddance.

### UP, UP AND AWAY

Flying the Waco E takes considerable preparation. You will need fuel, a starting battery and courage. I cannot stress this matter of courage too heavily. "Cowards die many times before their deaths; the brave but once." That is well said, is it not? I read it somewhere. Could I suggest to some of you that there are books, GREAT BOOKS, books other than R/C MODELER?

But I digress again. Courage for flying a new scale model is best gained from strong drink. Strong drink makes strong pilots. Prepare your Waco well, prepare a flagon of French brandy and go to the field, chin high. Once there, select the best pilot of the group and say "Here, take my airplane. Wreck it, I am tired of it. Let it be done." This gives him power of attorney and relaxes him. IMPORTANT: You must not fly your own airplane on its maiden voyage, for the same reason that a surgeon is never permitted to do a vasectomy on his own wife. You are too close. There are emotional entanglements. You cannot be dispassionate.

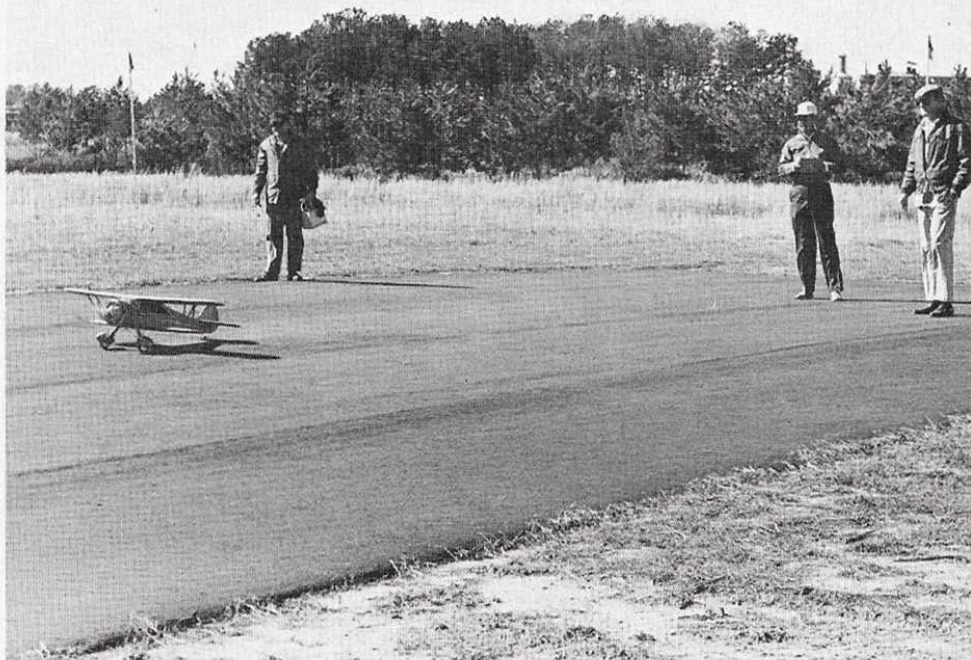
For my Waco's first flight, I was extremely careful in the selection of a pilot. With hooded eyes I observed what talent the Atlanta R/C Club had to offer on a certain Sunday. Soon, I spotted my man. He had the look of eagles. His bronzed hands caressed his Kraft transmitter like a Stradivarius, playing a rich tapestry of vapor trails against the counterpoint of the sullen sky. His name, even his name, spoke of leather helmets, Castor oil, and dawn patrols. His name was . . . Dalton C. May. I was soon to find why he is also referred to as Atlanta's own Wiley Post.

I gave him the Waco saying "Here, take my airplane. Wreck it. I am tired of it. Let it be done." He glanced first at the airplane, then at me. The crow's-feet in his leathery face deepened; and he said, "It will be done."

All the past is prologue. What Dalton C. May did to my baby reduced me to 220 pounds of jelly. It was murder to send a boy's crate up with a fiend like that. Snaprolls (to see if the nylon wing bolts would hold) Cuban eights, high-speed stalls, spins, low inverted passes, outside loops, and Dewey knows what else. Finally, he pulled it in to a perfect three pointer, taxied it back to the pit and dropped a rag on the prop.

"How . . . how was it?" I stammered. "Nose heavy," he snarled. "Correct it with 3½ turns of up." And he strode away, whacking a riding crop smartly across his knee-length leather jackboots.

Later, much later, I found out why they call him Wiley Post. D. C. May has only one eye. That's right . . . no natural depth perception. But as he says, "In an infinite series of possibilities, it's mathematically



Author, far right, reaches for left one as WACO begins take-off run. D.C. May on the box.

possible to compute all possibilities." Can you imagine selecting a one-eyed test pilot? Sure, I noticed that the sun glinted strangely off of his right eye; but because of his Teutonic demeanor, I assumed that it was a monocle . . . part of his scene.

Anyway, we now know it will fly, and I deduce from his grudging comments, pretty well. He's a stern old man, and beneath that gruff exterior beats not a heart of gold, but the stainless steel heart of a rigid perfectionist. So I confidently give

the Waco E to you . . . drawn and built by a lover of early airplanes and proven in flight by a hard task-master.

\* \* \*

You know, it's a funny thing. I had occasion to call D. C. May's office the other day for advice on a technical problem. The girl who answered the phone said "the OBERGRUPPENFUEHRER is not in."

That troubles me. What's an OBERGRUPPENFUEHRER?

Back down in one piece, WACO is carried tenderly to quiet, safe place.

