XF-226

BY CAPT. JIM SIMPSON, USAF

Well every year 'ole Dewey sponsors a design contest and every year I drop everything and run like crazy to the drawing board where a month flies by and every year I send the result to him. Don't believe that nonsense about "if you send an envelope," Dewey will send your stuff back — He's got so much of my stuff now that it would take a truck to get it all back! So, anyway, here's my entry in the "pattern, competition, sport, scale, racing type (type is a deadhead word, Dewey!) design of less than 360 square inches of total wing area employing a Veco 19."

I am real lucky in a lot of respects, so now that I have knocked the stupid editor of this dumb magazine, I'll give credit where credit is due. This plane was really designed around the RCM Classic radio, a prototype of which I acquired in January and which Jack Albrecht, Don Huff, Sid Gates and I collectively built as per Ed Thompson's directions. Needless to say it works flawlessly!

The reason the XF 226 looks sorta' like an F-86 is because two years ago I was fortunate enough to be at Maxwell AFB, Alabama and, while there, became acquainted with one of the worlds fine gentlemen, a Mr. A. L. Strickland (former AMA VP — now with Orbit West in L.A.) — anyway — he and his gang (notice, Bud, Herb, Jim and all) flew a modified Taurus called a "Sweeper" (MAN plans) to which this plane bears a close resemblance. I liked the "Sweeper" quite well and since you all know that nothing is truly original, that is where the basic idea came from!

The first two XF 226's were built from hastily sketched plans by Bill Ledger (who also took all the pictures and taught me to develop and print 'em) and myself. The first one finished has an all balsa wing and is completely covered with new Super MonoKote. Including the four channel Classic radio and a full tank of gas, it's all up flying weight is a scant 3 pounds! That's all! Now, if you still believe that "old wives tale" about heavy airplanes and wind, go fly this one! I think you'll find it is wing loading and not weight that gives the penetration!

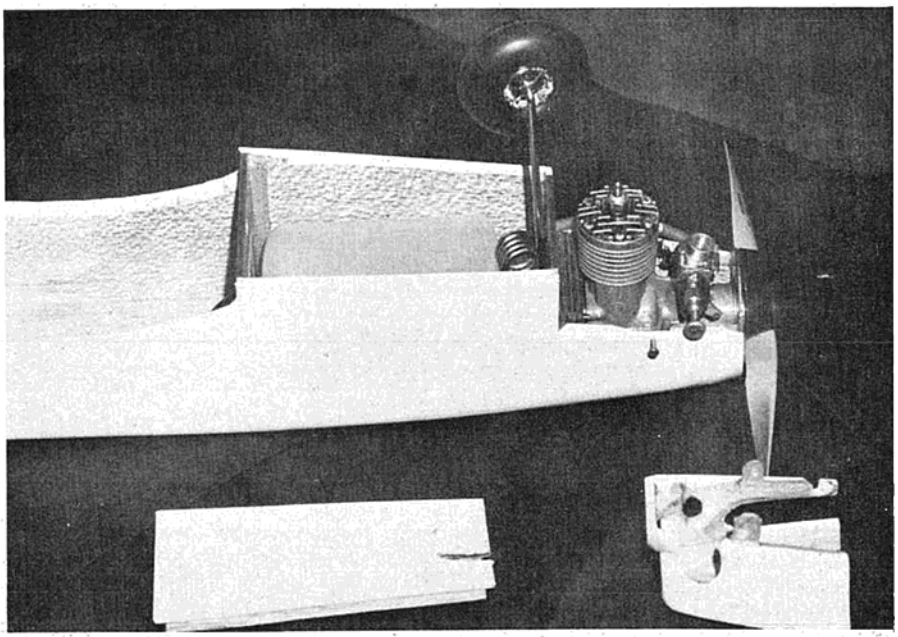
OK, now that you've made up your mind to try it, start by cutting all the tail surfaces out of 3/16" sheet balsa and sand the airfoils as shown. Ted White says that sharp edges make 'em go fast! Through with that? OK, now you are one third done! All that's left is the fuselage and the wing!

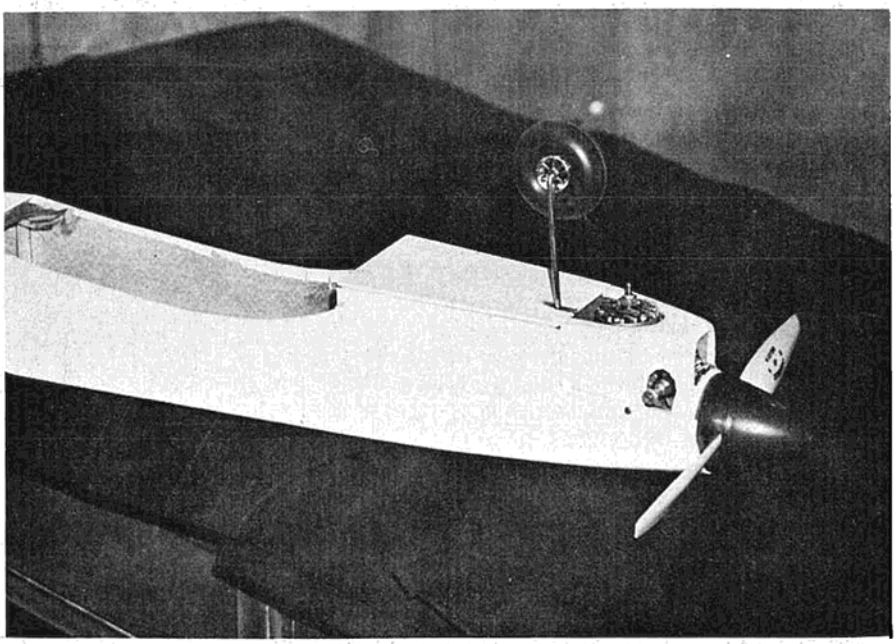
Cut the fuselage sides as shown and add scrap braces at the locations shown on the side view. Don't measure, just stick 'em on there — that is how I drew 'em in, you know! Cut the top block to the outline shown as a top view. Notice it is an airfoil shape to enable you to fly knife edge flight through an entire pylon race! Now, slot it for the vertical fin. Mark the two (that's all, just two) former locations on the top block and the fuselage sides. Working rapidly but carefully, glue the formers on the top block, add the fuselage sides, pin the rear cross pieces in place and add the bottom rear planking from the wing trailing edge to the tail. Stick it all together with tape and, if you prefer, you may add the horizontal and vertical stabilizers and the dorsal fin at this time, provided you round off the aft end of the top block first. The engine, nose gear and wing hold-down blocks are now installed. I mounted my Veco .19 radially, although you may prefer "log mounts". I also bolted my favorite nose gear assembly to the aft side of the same firewall. Now cut the hatch from 1/16" plywood and sandwich it onto 3/16" balsa scrap and after the tank compartment is fuel proofed and everything is installed, we'll MonoKote the hatch in place for aerodynamic smoothness and strength. The engine cowl can be built up of scrap or carved from block to suit your individual taste. A 2" black spinner simulates a "radome" and any suitable canopy will work.

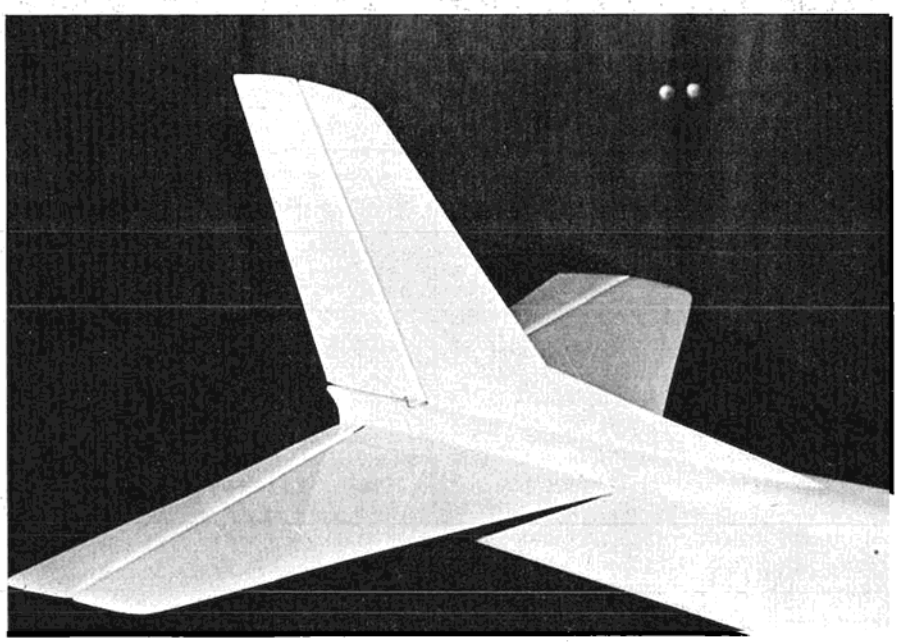
The wing. Yes, . . . use the pattern shown and cut one out of styrofoam, finish it your favorite way and go fly the plane! What'cha mean you want to know how I did it? Dontcha' know balsa is the same as gold? Besides, nobody who's anybody builds balsa wings anymore! Don't you read RCM?

Well, since you insist — here's the way I did it. I cut all 1/16" sheet ribs out in pairs (quicker), cut a pair of full depth spars out of 1/8" sheet balsa and cut to size 4 pieces of 1/16" sheet balsa for leading edge planking. Mark center lines on every other rib, then mark the spar and rib locations on the bottom leading edge planking. Put 3" strips of masking tape 1" under the bottom leading edge planking — between the rib locations at the back edge and at the rib locations on the

Deanna Delong poses with Jim Simpson's XF-226 . . . The only model to exceed 40,000 feet altitude, log five combat missions and fly an around-the-world equivalent distance prior to its own first flight! Extachrome transparency by Capt. Gary Landry, USAF.







front edge — ALL STICKY SIDE UP! Now, pin and glue the spar in place — temporarily put the ribs with center lines in place and carefully locate and pin a 1/4" square strip UNDER the aft end of the ribs in such a manner that all the center lines are parallel with the building surface. Again working rapidly, glue all the ribs in place, pinning them only aft of the main spar. Quickly add the top planking and pull the tape strips up (which pulls the bottom planking up to the proper contour) and stick the tape onto the top planking (which pulls it down to the proper contour). Now, wasn't that harder to read about than to do? Add the trailing edge before removing from the building surface and as soon as you get it up and the tape off, dress the leading edge of the structure and add the sheet balsa leading edge.

Notice the landing gear blocks are made up of 1/8" plywood. Add them, then completely plank over them and the remainder of the wing. Dihedral (if desired) may be set in before or after this planking. I don't use any dihedral in my plane and it doesn't make a noticeable difference!

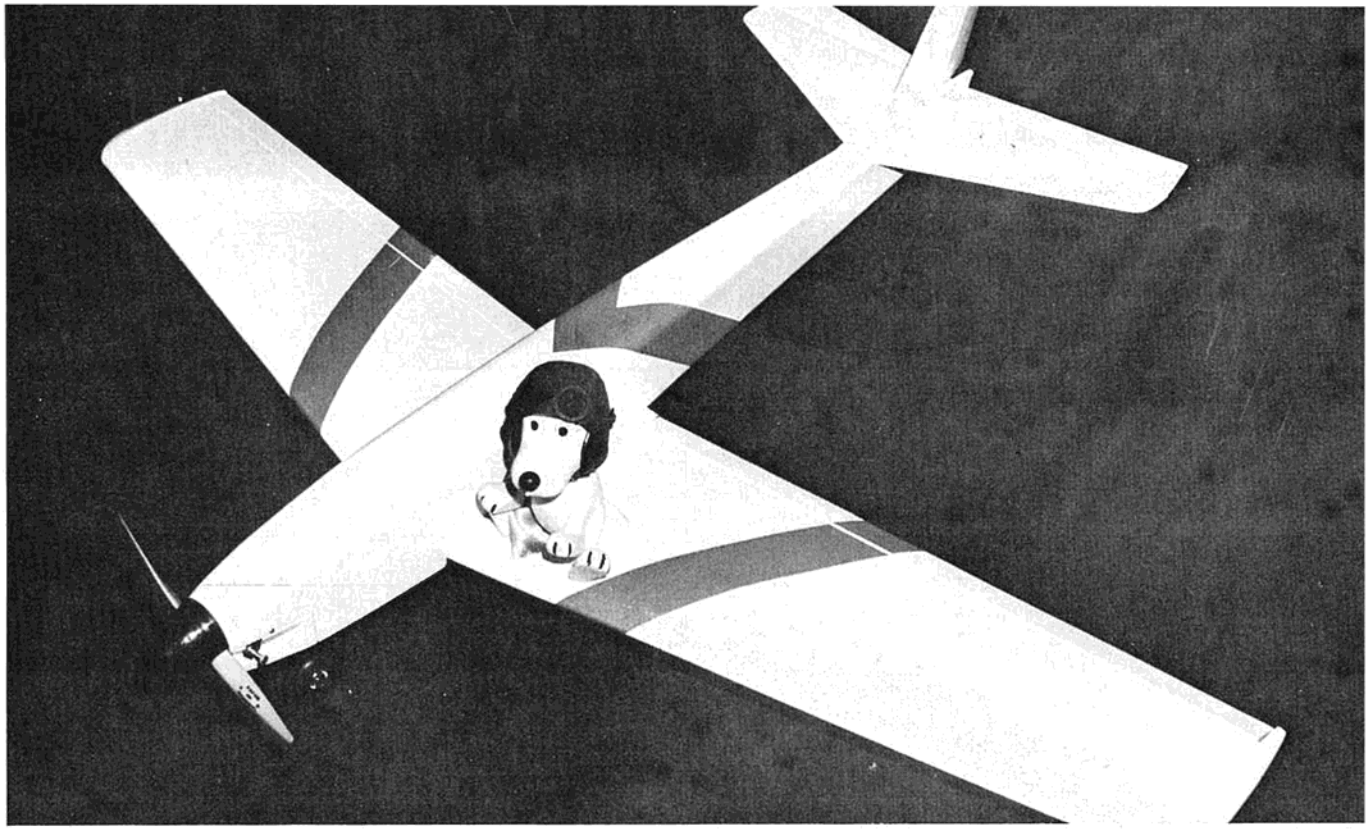
The full span ailerons are two pieces of 1" trailing edge stock glued together to form "V" on the leading edge. The center section trailing edge block is installed after the aileron horns are in place (use 3/32" wire and 3/32" I.D. brass tubing to make them, or use Top Flite aileron horns).

Put the wing in place on the fuselage and drill the dowel hole through the #2 bulkhead into the wing, then drill the nylon bolt holes at the aft edge of the wing center section, through the wing and into the wing hold down block. Now, add the dowel and tap the hold down block to accept the nylon screws.

After the wing is covered, cut through the 1/16" planking and add the landing gear struts, then cover the hold down straps and the big gap with MonoKote! Neat, huh?

I used Orbit PS-3 servo cases and mechanisms with my Classic radio. All 4 servos are mounted in the fuselage, but if you don't use this type of gear, or prefer a different setup, just go ahead and-hurry up — get it put in so we can go fly!

Now, about flying . . . I sketched the first three views of the XF 226 during a flight from Guam to Okinawa via Vietnam. I drew the working drawings and built the fuselage and tail at Okinawa, then hauled it all back to Guam via Vietnam. I built the wing and covered the plane with Super MonoKote on Guam, then hauled the whole thing to Thailand via Vietnam. In Thailand I added the gear and finished



the cowling and installed the surfaces, then with the entire airplane done I hauled it all back to Guam via Vietnam again. Now, everytime we went over Vietnam, we logged a combat mission; so before this plane ever flew its first flight under its own power, it had been above 40,000 feet in altitude and had flown enough time and distance to go completely around the world! To say nothing of five combat missions!

Before you fly your XF 226 the first time be sure the Center of Gravity is within 1/2" of the location shown on the plans. Carefully check all your surfaces for warps and all your servos for smooth operation of controls. Next, start the engine and carefully adjust the throttle to give smooth response and a slow idle. Now, taxi the plane around until you are over your original nervousness. When you "feel" the time is right, make your takeoff into the wind, establish a good climb rate and after you have a safe altitude (approximately 100 feet) make a very flat 180 degree turn and start adjusting your trim for level flight. If the plane is too far out of trim, practice a landing while at altitude then land it and re-adjust the linkages. Once you have it flying straight and level, let the airspeed stabilize, then rapidly pull the throttle back to idle and note the airplane's reaction. If it went straight ahead, you are home free! If it dived, you need more downthrust and if it climbed, you have too much downthrust. If it veered right, you need more right thrust and if left, vice versa! Anyway, land now and set the thrust properly so you can enjoy the flying aspect of our great sport! Once the airplane is properly adjusted, you will notice it runs around the sky pretty fast. Well, it should; it's supposed to be fast. The next phenomenon is its turn stability. That is if you roll a certain degree of bank into it, it just seems to stay right there until you do something else! If you used the "funny airfoil" shown on the plans, which makes the wing almost constant thickness but makes the tip section thicker, percentage wise, than the center section, you will enjoy this trick; provided your elevator travel is not excessive, you can go roaring downwind and make a smooth 180 degree turn with a slight climb while pulling the power back almost to idle. If your coordination is real good during the turn, you can gradually increase up elevator so when you "roll out" heading into the wind (at least 8 knots), you will have almost full up elevator; the thrust will help balance the gravitational pull and the airspeed will exactly match the wind speed so your ground speed will be zero and the apparent movement will be non-existent, so for all practical purposes, your airplane is "parked" right there — hovering like a helicopter (or hawk) in the breeze.

If you built your airplane like mine, with no dihedral, you will find that it flys better (i.e, easier) upside down than right side up! I don't know why, it just does! There won't be a pronounced difference, though, so don't expect it to be that noticeable. If you haven't flown inverted enough to feel fairly relaxed while doing so you won't be able to appreciate this characteristic.

Now, as you all know and as it has been hashed and rehashed, 'round and about — The Center of Gravity has a great deal to do with how any plane flys! This one is no exception. You may be able to fly this one with a wider range than most planes, but don't be lulled into a false sense of security by this statement. The further aft the CG, the easier it will spin AND the more susceptible it will be to snap rolls at low airspeeds (like on final approach, for instance). The other extreme (i.e., CG too far forward) will render your elevator ineffective. In foolishness, I was once unable to "flare out" on landing with the CG too far forward.

One last note, although this plane looks modern and jet-like, it is still a direct descendent of the old time favorite, "Astro Hog." I had one and loved it! The "Orion" was a more recent and much modified member of the same family although not by the same designer. After a brief encounter with the "Orion", I struck out with a modified member of the same family called, "Corvus" which, after some timely advice from Zel Ritchie about what to change, evolved to the "Sabik" which you may or may not remember depending on what part of the Southwest you're from. What 'dya mean there is somewhere else? You ever heard of those West Coast Hotshots winning at El Paso or Albuquerque? Well — anyway — the XF 226 is naturally a grandson of the Sabik and it does sum up all of what I consider to be the best features of this entire group of airplanes.

I enjoy it, and I hope you do too!