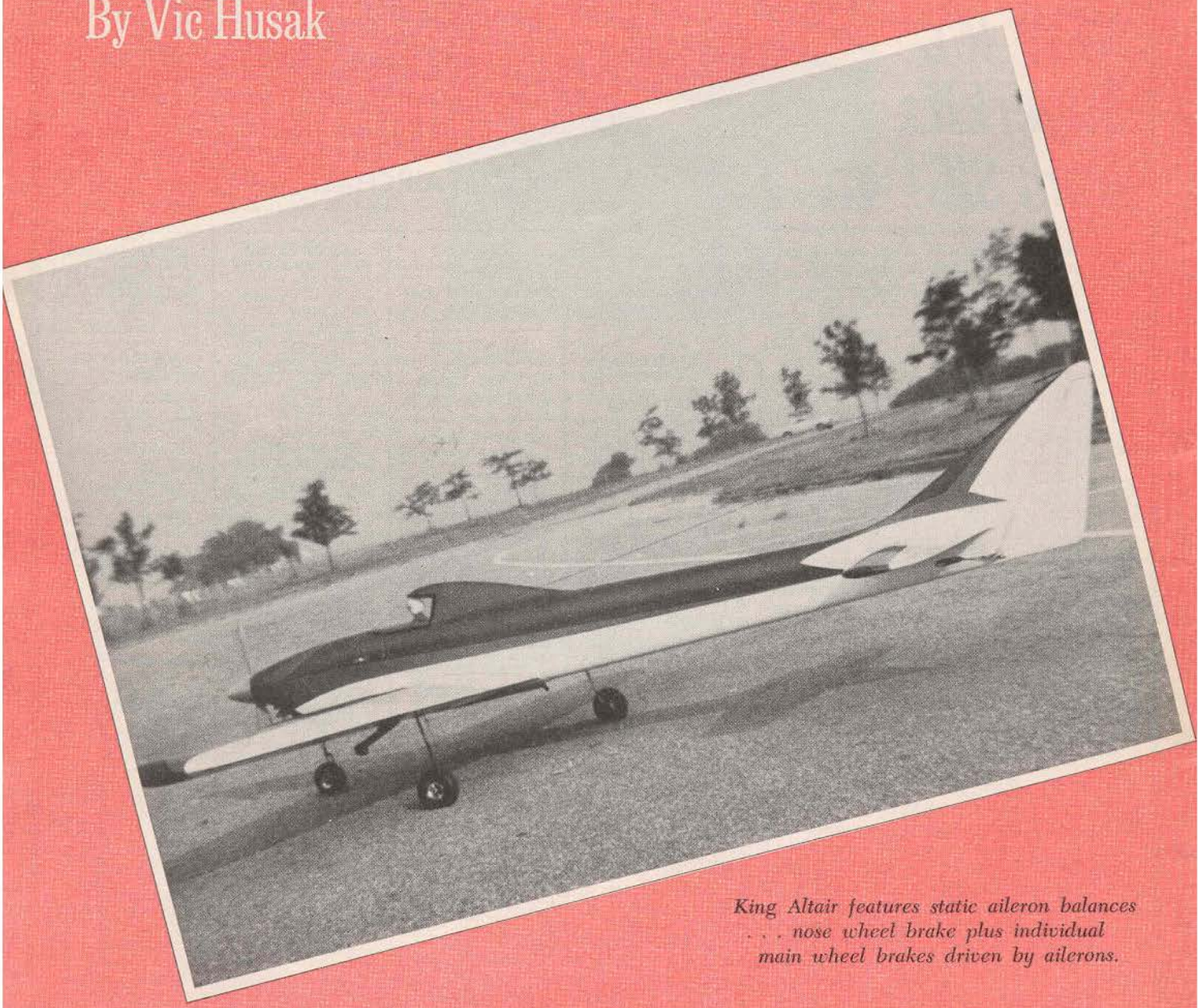
KING ALTAIR

By Vic Husak



King Altair features static aileron balances . . . nose wheel brake plus individual main wheel brakes driven by ailerons.

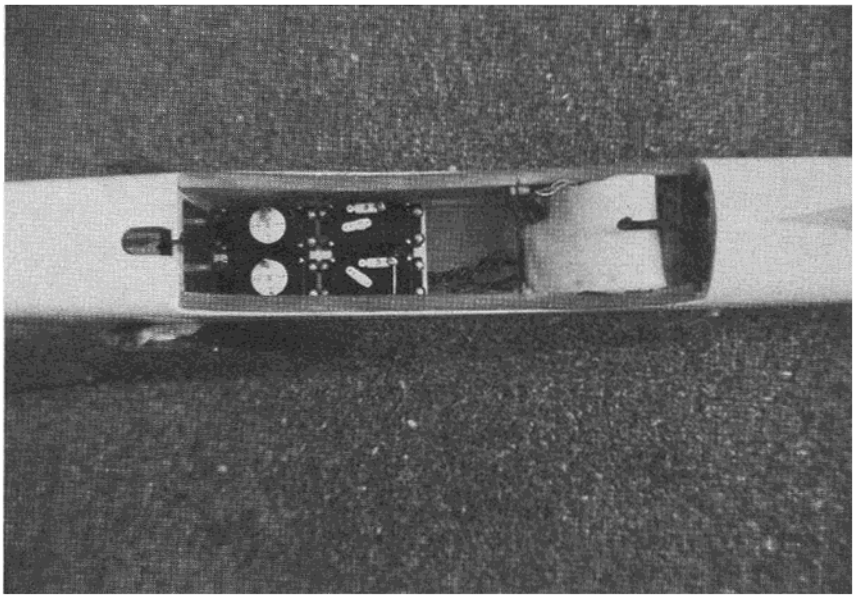
Vic's 80" span King Altair uses a Veco .61 for power. Radio equipment is an Orbit 7-14 digital proportional system. Fuselage length is 73", weight 8 pounds 12 ounces.

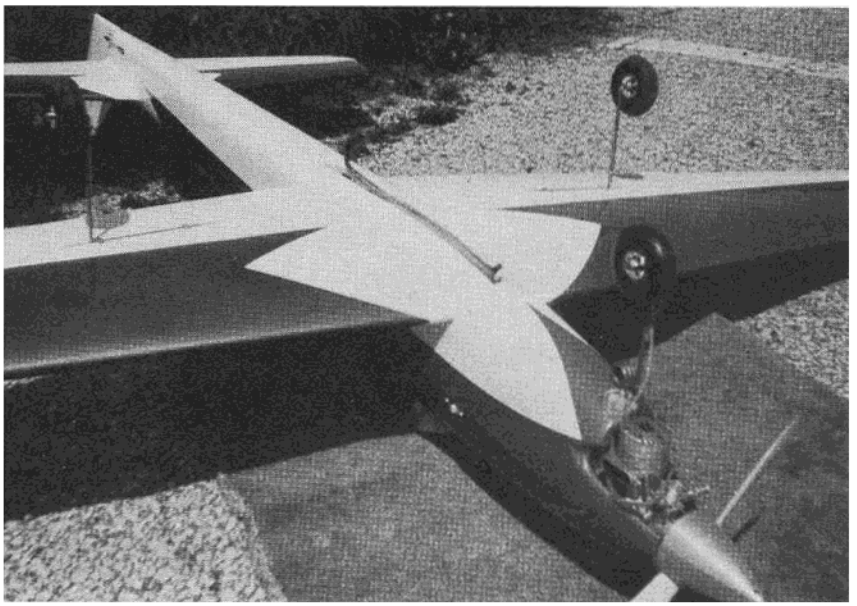
THE "King Altair" is basically a scaled-up version of the latest of the Altair multi ships that I have been experimenting with and flying during the last three years. Good looks, simplified construction and excellent performance in an aircraft larger than the average R/C multi job flown today, have been the main goals pursued, and from all indications thus far, have been achieved in this multi ship.

The "King Altair" is a relatively large ship, 80" in span, 71" in length, with 860 square inches of area, and weighing 8½ lbs. You might wonder why I have gone the larger than normal route as far as R/C multi ships are concerned, but I believe that this size aircraft has certain advantages over the smaller type of ship we have known in the past few years. A few of these advantages, I believe are — greater fuel capacity, easier installation of radio gear, a greater landing gear track, which make for much better ground handling, less susceptibility to small wind gusts, and a softer, more graceful response to control application, and — it just looks better. May I assure you that the size of this bird is not the least bit detrimental to performance. One other surprising thing about the "King Altair" is that it moves out very well when powered by a good, hot .56 or higher displacement engine; yet it can be dragged in for very slow, realistic landings. The ship performs the patterns with real elegance, which I believe, is due to its size. All maneuvers appear clean and precise.

I have been flying the "King Altair" with proportional equipment, whereas the earlier, smaller Altairs were flown on reeds; yet these smaller Altairs displayed exceptional performance. This big job should do just as well on reeds, if you are not a proportional flyer.

I designed the "King Altair" with an inverted engine set-up mainly for a clean front-end configuration. For one thing, the top nose line remains unbroken from spinner to canopy, giving the airplane a more scale-like effect. Also, the area around and in front of the nose gear is a rather dirty area aerodynamically anyhow, so why not utilize it instead of adding another one on top of the fuselage. Some R/Cers may look upon the inverted engine with skepticism, since all kinds of problems are associated with inverted engines. The secret of starting and running an engine successfully is to spend some time learning the idiosyncrasies of your particular mill, finding the proper needle valve setting and leaving it alone, priming sparingly, utilizing a good glow plug, and checking the plug just before an official flight to be certain that it is not loaded with castor oil. I have learned these little tricks over a period of time and I can honestly say that I now experience very little trouble with the inverted en-



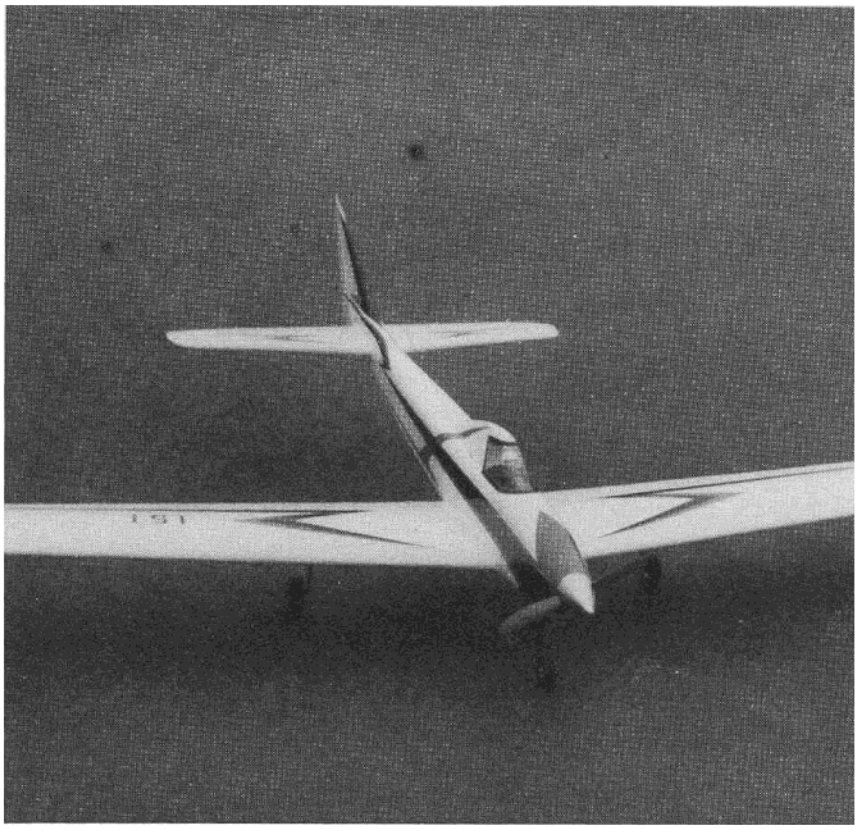


gine set-up. However, for those of you still skeptical, the plans indicate dotted lines on a number of fuselage components which will allow the nose to be shaped for an upright engine installation.

Construction of the "King Altair" is straightforward, being assembled entirely of balsa; yet considering the fact that it is a built-up structure, it is relatively quick and easy to put together. Why an all-balsa job in these days of fiberglass and prefabs? Believe me, I have absolutely nothing against foam wings or fiberglass fuselages — I think they are wonderful for those of us who are not too keen about building, or just don't have time; and they are strong. I just happen to like balsa wood, and I enjoy working with it. Nostalgic, I guess. A few 48" long balsa items are used although they are not absolutely necessary, since splicing of shorter lengths will suffice. No special construction information is needed, since the plans and supplementary sketches show all pertinent details for constructing the "King Altair." The method of assembling the stabilizer is, I feel, a real short cut in built-up structures, and is exceptionally light, yet strong.

For those of you contemplating construction of the "King Altair," a few notes of advice at this point should come in handy. Start by building the stab first, next the fuselage, finally the wing. Refer to the plans constantly, checking cross-sections and sketches for hidden details. Keep a careful watch on the alignment of the fuselage, the trueness of the wing panels, and the trueness of the stab and fin during construction. If you desire to mount the engine in an upright position, drop the engine bearers down one-half inch throughout their length from the position now shown on the plans. If radial mounting of the engine is to be used or mounting of the engine on its side is contemplated, dispense with the maple engine bearers and do not notch out firewall F-1, and build up the nose as per the upright installation.

You will notice that I have indicated no method of installing servos, bell crank and linkage to the nose wheel, brakes or push-rod details. These are items which, I feel, are best left to the discretion of the individual, depending, of course, on equipment used. The method of retaining the wing to the fuselage is admittedly a little different and may at first seem a little strange. The rubber bands (#64) strung between the front and rear keepers cause them to act as clamps, with pressure applied to the plywood pads. This system works very well and almost completely hides the wing bands. You may, however, use the standard exposed dowel and band method, therefore eliminating the need for the ¾" space between wing fairing blocks and the plywood pads.



Just a few words on finishing the "King Altair." I feel that this ship, or for that matter, any ship upon which the builder has spent time and money certainly deserves something more than a spackle brush paint job. The big secret behind any good finish is preparation of the under-surface. After sponge block sanding the wood with 220 grit, I always sand with 400 paper (dry). This gives the wood a slick feel. I then apply two coats of clear dope, sanding with 400 paper (dry) after each coat. Then comes the application of the silk, followed by a coat of talcum and dope mixture, sanding this with 220 grit. Now two or three coats of clear dope, again sanding with 400 (dry) between each coat and wet standing the final coat — and the under-surface is ready for the color coats. For color you can use butyrate dope, Hobbypoxy, acrylic lacquer or whatever your personal preference may be (mine happens to be acrylic lacquer). Spray or brush color coats on evenly. Sand between coats for good coverage, and when the final coat is dry, wet sand with 600 paper, following with a good fine white rubbing compound. If done correctly, you should end up with a very nice finish on your "King Altair."

As far as actual flight testing of the "King" is concerned, my only bit of advice to the neophyte multi R/Cer is to let an experienced flyer take the ship up first and trim it out for you. This usually makes for greater longevity. To the experienced multi flyer not too much can be said. Assuming that all surfaces are true, radio gear is installed, wired and working properly, decalage is right, CG is approximately where it should be, and the engine is peaked, the "King" should fly off with just a slight nudge of "up" elevator after a short take-off run. Trim the ship for straight and level flight with elevator in dead neutral. Some slight shimming of the wing (either up or down) may be needed here. Possibly a slight shift in the CG position may help. Now check for unwanted rolling tendencies. You can correct for a slight roll with aileron deflection, but if the roll is severe, look for a warp in one of the panels. Rather than correct with aileron, try to eliminate the warp, should you face such a problem. After the trimming process, put the "King Altair" through its paces. A tip on aileron response, particularly with the type used on this aircraft — gaps may exist between the leading edge of the ailerons and the rear spars of the main panels. These gaps act in such a way as to kill the lift created by aileron deflection. Should your bird be slow on rolling action, and you have adequate up and down aileron movement, check for these gaps, and if apparent, close them up. The roll rate will definitely improve.

After flying the "King Altair" for a short time, I am sure you will be thoroughly satisfied with its look and performance. I know I am.