TOP FLITE Models CONTENDER *Still a Winner!*

An *FM* Product Review: By Vic Macaluso

Is the second time around really better? The author says a big yes as far as this kit is concerned, with an O.S. .46 FX.

PHOTOGRAPHY: VIC MACALUSO

Final pre-flight and the *Contender* is ready for the maiden flight. Vic teamed the airframe with the O.S. .46FX, and the Futaba T6XA radio system. The only departure from the stock kit, was mounting the engine sideways, instead of upright.

You've all heard of "Back to the Future"; well doing this review was like going "Ahead to the Past"! This design is older than many of the people in R/C today, yet it still retains a contemporary look that is really timeless. Compared to many of the "prefab, precovered, pre-just-about-everything" models out today, in my opinion, this model blows them away in looks, and as you will read later on, very much so in performance.

I built my first *Contender* at the beginning of the eighth decade of the last century (1970), and if it wasn't for my growing interest in model boat racing at that time, I'd probably still be flying it today (sold it to finance a new boat motor). The *Contender* is the kind of model that no matter what your interest is, it's like meeting a longtime friend every time you haul it out to fly it. It's about the friendliest plane I've ever owned.

What really got my attention with this plane back in the *last* century was the fact that it looked so much like the controline *Flite Streak* of the same era. I was having so much success in the Slow Combat controline event with that plane. The fact that that model was also produced by Top Flite wasn't much of a coincidence. Like the *Flite Streak,* the *Contender* was designed to be a minimum platform with maximum performance. But enough about controline models (they are still *very* dominant in my modeling life!), let's get onto this review!

The photos on the box alone get you thinking about how cool a trim scheme you can come up with. The jet-like looks just scream military. Opening the box is no less impressive. My first impression was that the wood quality, while not contest grade, is probably lighter than it has to be and the final ready-to-fly weight bears this out. There were no "throwaway" parts in this kit. All of the wood was very adequate for its intended use and of very clear grain. There were no warped parts in the kit.

One thing you will notice about this kit is that it may seem to be "over engineered" (read that too many parts) but once you get on a

Top Flite Contender at a glance

Type	R/C sport aerobatic
Wing span	53¼ inches
Fuselage length	49⅝ inches
Wing area	660 square inches
Weight as reviewed	5 pounds, 14 ounces
Wing loading	20.4 ounces per square foot
Engine required	.40 to .61 two-stroke .52 to .70 four-stroke
Radio requirements (ail, elev, thr, rud, opt. flap)	4 channel minimum 5-6 standard servos

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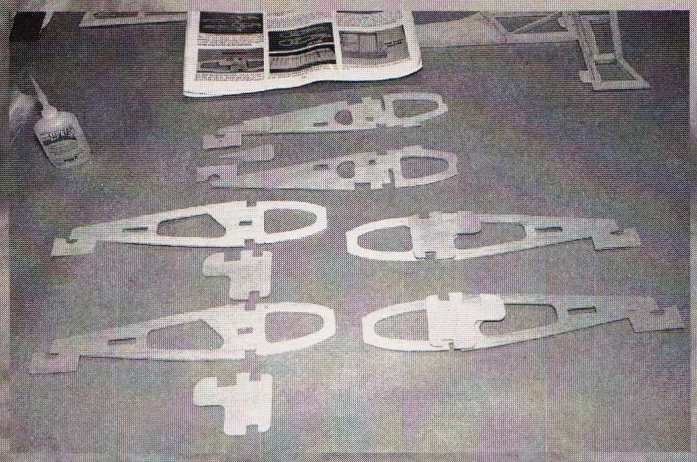
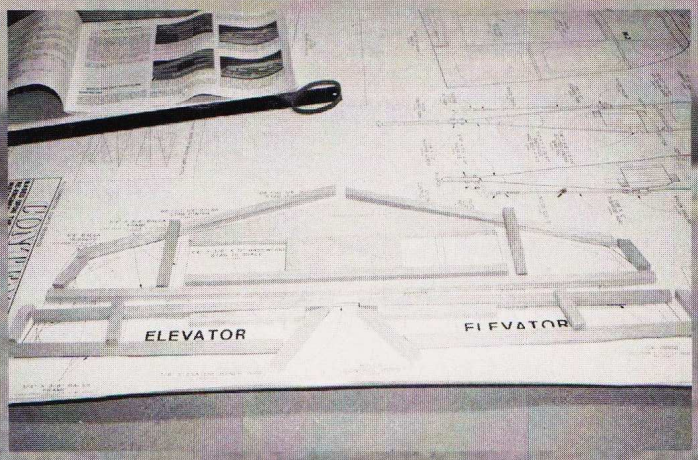
About the only real criticism of the kit contents was the single graphics sheet. It allows you to do only one side of the model. To put markings on both sides, you'll have to buy another sheet.





Thanks to the breakaway jigging tabs on the trailing edge of the ribs (above left), the wing can be built on a flat board, over the plans. You'll also note the open structure of the parts, like the lightening holes in the ribs, and the built-up structure of the tail (above right).

building roll, that impression quickly dissipates. All of the parts in this kit seem to be "engineered" rather than just put there to support something else. A good example of this is that there isn't one substructure on this model that doesn't have as many lightening holes as possible. At the same time the strength of the structure is in no way compromised.

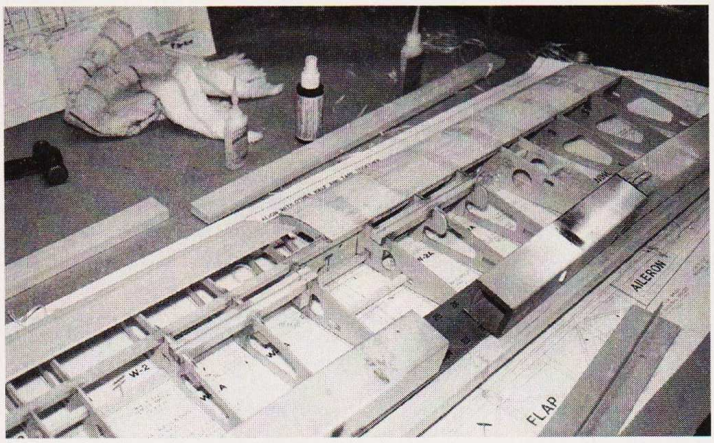
Again, because many of you who have or will build this model are younger than the design itself, I feel I must pass on a brief word about its designer, Dave Platt. While I've never met Mr. Platt personally, at the time he designed this model he was and still is today a world class builder and designer in just about every discipline in model aviation. I've seen much of his work and can only wish that my best work will equal his "throwaways"!

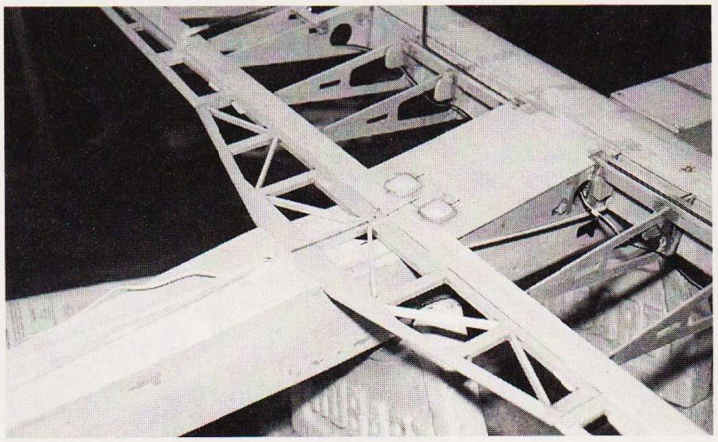
The builder will also notice there are quite a few balsa blocks. Again, when this model was designed, ARF was a sound that dogs made rather than a type of model. Yes, this can be called a builder's model but it certainly will not tax the abilities of even the most inexperienced builder and will even give him some practice in building light, strong, "engineered" structures. He will quickly and effectively see and feel the difference between a built-up surface and one hacked out of a balsa slab! To summarize, the wood quality in this kit is about the best I've seen in a "sport flyer" kit.

Moving on to the other "goodies" in this kit we find the hardware supplied is typical of most kits of this type and is entirely adequate for this model. Also included are CyA type hinges which have to be cut from a large strip, but as with the rest of the construction, "no big deal". Also supplied is an adjustable engine mount that will handle anything from a .40 to .60-sized engine.

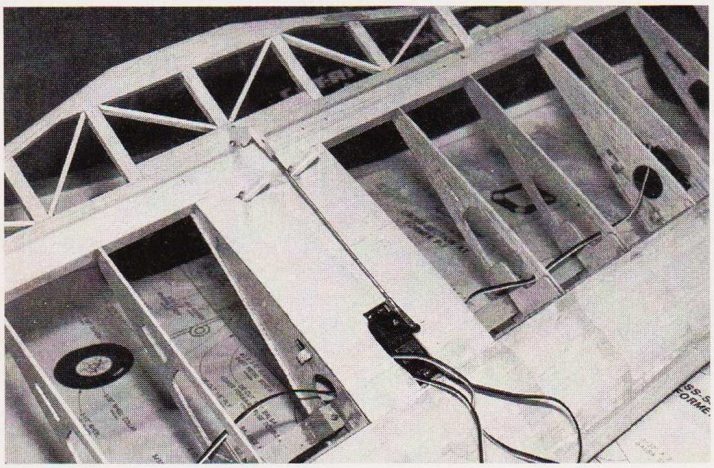
The wood is all cleanly die-cut in this kit, plus the instruction booklet is top-notch. Like all Top Flite kits, the plans are very well-done and comprehensive. Retracts are not an option for the model.

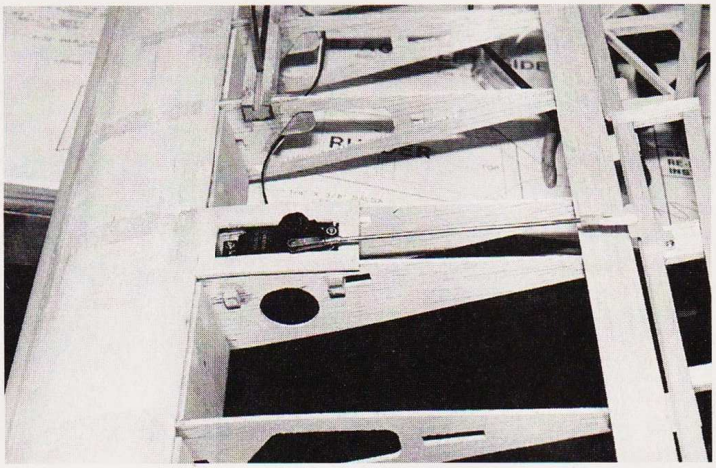
Top Flite Contender





The wing is built upside down over the plan **(above left)**. The jigging feet at the trailing edge of the ribs are on the top side of the wing. Just forward of the framed flap are the two mounting bolt holes **(above right)**, seen as white inlays in the sheeting. The optional flap, a distinguishing characteristic of the *Contender*, is driven by a single servo mounted in the top of the wing **(below left)**. Individual servos in outboard wing bays **(below right)** drive each of the ailerons.

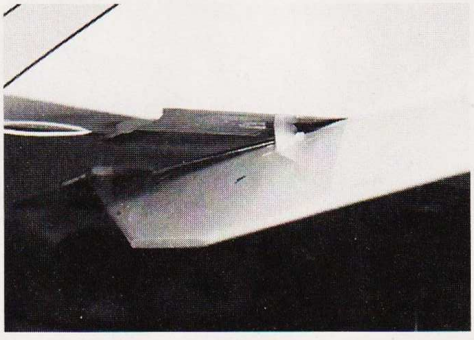


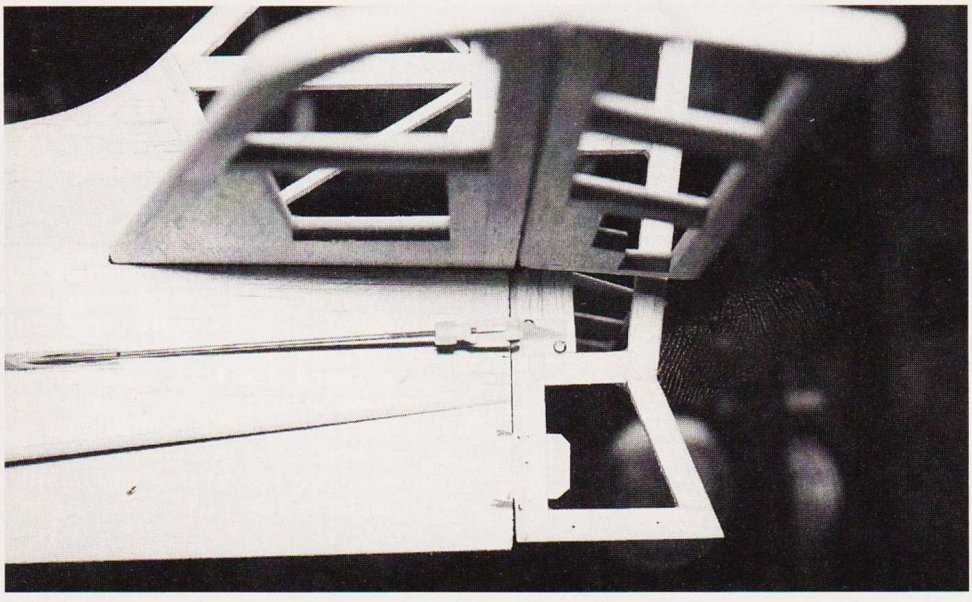


This mount appears to be molded fiber reinforced plastic, and again, is well designed for its intended use. The tricycle gear is 5/32-inch wire and is very well designed into the wing and fuselage. I've had several rough landings without any indication of stress on any structure. The clear plastic canopy appears to be vacuum formed and its jet style blends very well with the overall look of this plane.

Moving on to the decal sheet I encountered my first and what was to be my only real criticism of the quality of this kit. When I first saw it, I thought there were two sheets. The sheet I saw had only enough insignia/nomenclature to do only the top/left side of the aircraft or the top/right, whichever side you want to photograph from! All kidding aside, this is a serious departure from the overall quality of this kit. In order for the builder to present a model that is symmetrically trimmed he will either have to purchase another decal sheet from Top Flite or, as I did, rummage through his leftover decal sheets to find what he needs to complete the job. I'm still baffled by this, considering the otherwise excellent quality of this kit. Not to completely pan the decals, as with the rest of the kit the quality of what is there is excellent!

Vic checks flap extension for any slop or clearance problems. This flap will really slow the model way down in a hurry, because it is quite an effective airbrake. Use it carefully on landing approaches.





Clevises, control horns, and pushrods are supplied in the kit, and are conventionally installed. Also supplied in the kit are E-Z style hinges, installed with cyanoacrylate glue.

Going deeper into the box we come to the lavishly illustrated and photographed 32-page instruction manual. Even if you don't know how to read, it would be almost impossible to not be able to build this model from the plans and this manual. In it you will find complete step-by-step instructions on con-

structing this plane. While there is nothing difficult about this kit, the photos and illustrations will eliminate *any* confusion in construction. I've tried to imagine where the average builder would have difficulty with this model and the only area I can see is in carving the nose area. Hey guys! The manufacturer can't do everything for you!

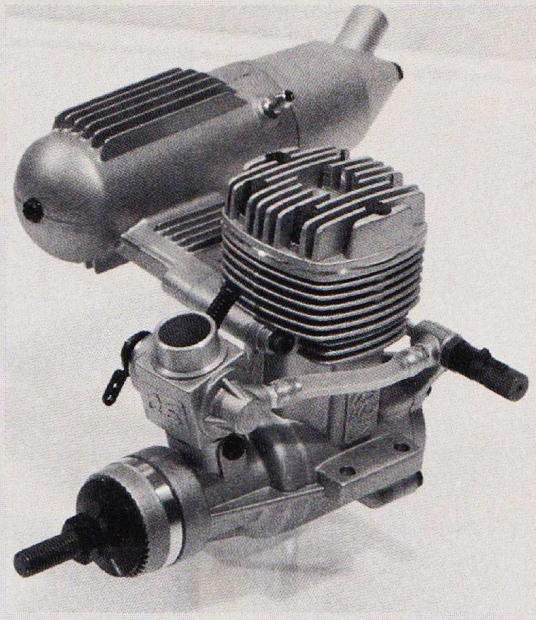
In conjunction with the manual, the kit includes just as high a quality plan set. These are on two sheets and have all necessary views to build this model over the plans. The only joining on these plans was the wing halves. The wing is built in one piece so you'll find it necessary to join the plan halves at the center line. Again, no big deal! The rest of the model is built for the most part over the plans. The stab, elevator, fin rudder, ailerons, and flap are all built up over the plans with ¼ by ⅜-inch balsa stock. This may sound like it's very time consuming, but believe me it's not! The plans, by the way, are printed in black lines on high quality paper. I saved the best of the plan description for last. Included is what appears to be a one-third size copy of the plan set. This is a single sheet printed on both sides and came in very handy many times when handling the full-sized plans wasn't practical or necessary. This is a really slick idea.

Moving on to the actual construction of this model you will see that it has "quite a few parts". Don't let this affect your decision to build it. Not only does it build fast, but because of the "engineering", it builds extremely light. In the 20th century, when this model was designed—and even today—it was claimed that this plane can be built in eight hours. Without the use of CyA glue back then I don't see how this could have been possible, but I do know that today the average builder can have this model ready to cover in 8 to 10 hours building time, including carving the nose area. Some ARFs take longer than that and there "ain't" a one that will perform like the *Contender* will on the same power!

Other than having all built-up flying surfaces, there really isn't much difference between this 30-year-old design and the more contemporary "semi-high performance" designs that are popular today. What you will notice is the unusual use of "open bay" fuselage construction aft of the wing trailing edge. This may concern the inexperienced modeler as far as the strength goes, but a careful look at the "engineering" will reveal that the fuselage is really just a box with these "fins" added to the top and bottom of the fuse to give it a more jet-like look. When these areas are covered they look like they are sheeted rather than covered with "whatever-Cote". I personally think with the motor side mounted (the only kit bashing I did) this is a very aggressive and capable looking plane!

The wing is a very simple "D" tube construction with no great "engineering" taking place here. Between the sheeting top and bottom on the leading edge, and the balsa shear webs between the spars, this wing is extremely strong, rugged, and unbelievably light. The lightness and strength can be attributed to not only the design but the high quality of wood selection. The wing tips on this model can be configured two ways. The original design had the tips straight out from the wing (I did them this way) but someone decided to fix something that

A closer look at the O.S. 46 FX ABC



This is my second experience with the FX series of O.S. MAX 2 cycle engines. My first FX series engine was the 61FX. This motor proved to be quite powerful and pulled a "fullblown", 13-pound, Great Planes F-4 *Phantom* around the sky with *very* impressive authority. One of the more impressive things about this engine was it's "user friendliness". This engine just didn't have any bad habits and I trusted six month's work to it's power and reliability on a regular basis.

Like it's big brother, the O.S. MAX 46 FX delivers all of the power, reliability, and user friendliness you could ask for. The squared off head and cooling fins give this engine a very business like look and the added cooling area keep the temperature well within operating limits in a very wide air temperature range.

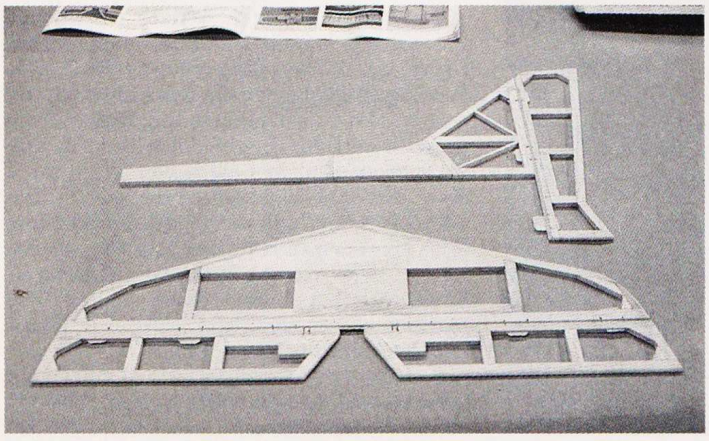
Used in the *Contender* this engine really showed it's capabilities. Running Byron Performance Fuel with a 15% nitro content and 18% oil, this engine swung an 11–6 APC prop at close to 13,000 rpm! Switching to an 11–7 APC dropped the rpm somewhat but really "woke up the model" Either prop on this airframe will give unlimited vertical performance, but the 11–7 will really "crank" the top end.

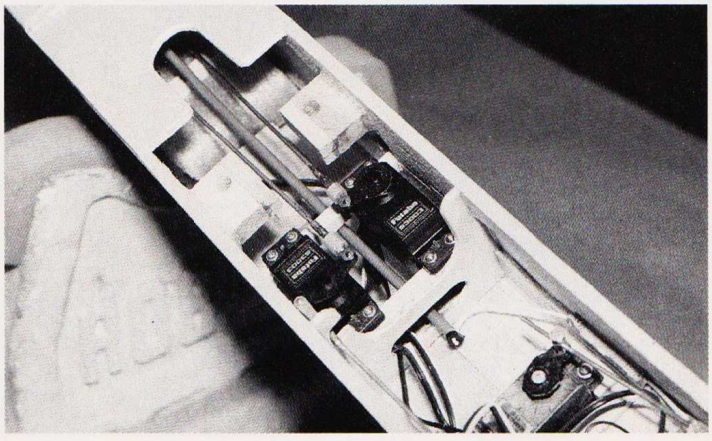
Using the above fuel/prop combination I found the engine very easy to start and adjust. With just three tanksful of fuel, the .46FX was able to idle slow enough to easily land this very light model but supply enough power at the top end to extract all of the performance designed into this model.

Once properly broken in and adjusted, the throttle response is smooth throughout it's range. I don't know much about the technicalities of motor design, but I do know that the OS MAX FX series delivers all of the power, smoothness and reliability advertised, and this 46 definitely lives up to that reputation.

BASIC SPECIFICATIONS

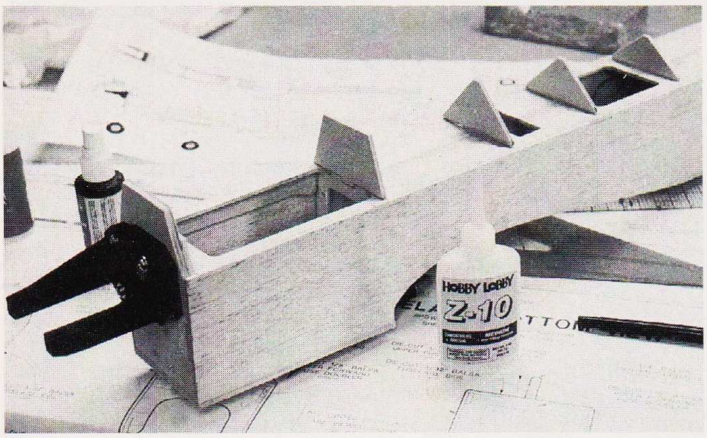
Bore(mm): 22.0 **Stroke**(mm): 19.6
Disp(cc): 7.45 **Weight**(g) w/o/m: 375
Prop thread: UNF ¼-28
RPM range: 2,000–17,000
Normal propeller: 11–7
Break-in propeller: 11–6

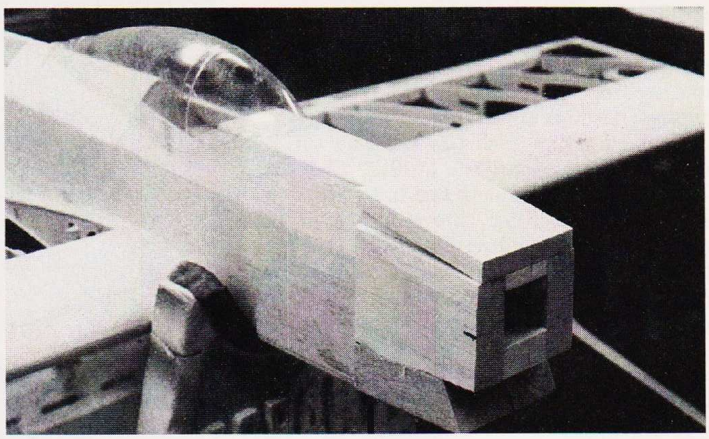




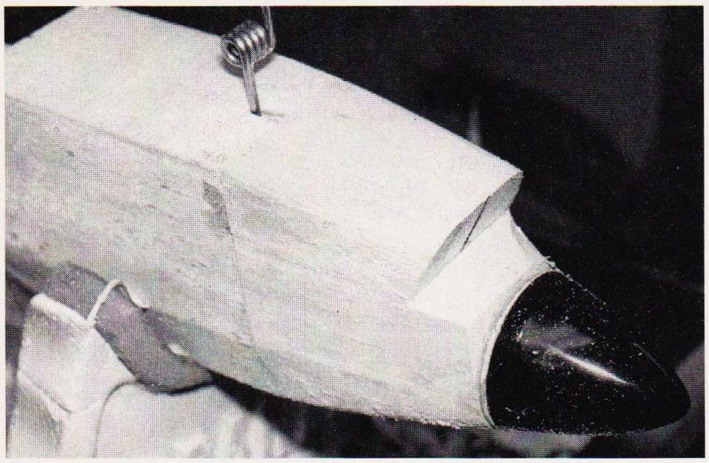
A look at the framed structures of the tail **(above left)** shows that this design strives for light weight. However it does mean more building time. The Futaba servos were mounted deep in the fuselage **(above right)** so there would be ample clearance for the flap servo, pushrod, and flap horn.

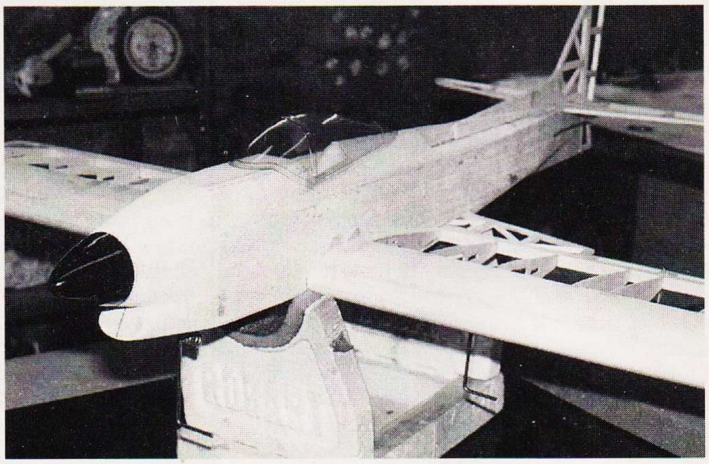
Top Flite Contender





Despite the more than usual building chores, cyano glue **(above left)** will speed the construction of the model. The fuselage is essentially a box structure with a turtle deck. Get your carving knife out because you'll need it for the nose blocks **(above right and below left)** especially if you choose to mount the engine sideways as Vic did. Quality of the wood was good **(below right)**, and well-suited to specific applications, an important factor where carving blocks is involved.





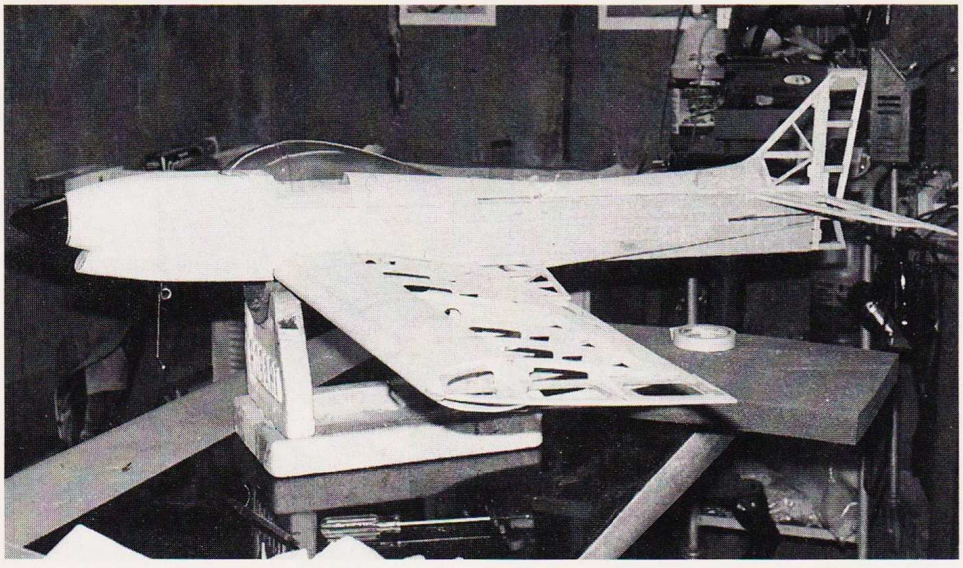
wasn't broken and offered the alternative of angling the tips up to "improve" the low speed handling! Between the flaps (I'll talk about them next) and the extremely light weight, if the plane landed any slower it would be a helicopter! The choice is yours, but I do admit that the upswept tips look cool. Whichever tip style you choose, be sure to pay close attention when you shrink the covering over them. You will warp them! Just be sure that when they are all covered you "warp" them equally.

On the original design the flap was said to aid in "carrier" landings. I still haven't quite figured out what they meant by that but I do know that it definitely adds to the fun of flying this model. Talk about short field landings. With very little practice you can literally lower the flap all the way (approx. 40°) fly over the runway threshold at altitude, point the nose almost straight down, and basically pick your landing spot.

About the only concern I had with the flap at first was that the plane would fall out of the sky because you could get it to fly so slowly, but this proved to be unfounded. At the first hint of a stall, application of power (not too much) will *immediately* stop the descent. At first, the flight characteristics might seem a little "weird" especially if you've never flown with flaps, but *very* little practice will have you doing those "carrier" landings all day long. Most flyers use the landing to end their flight, with the *Contender* you'll find that many of your flights will be mostly landings. This is really a fun to fly plane!

Okay, so it's a great slow flyer; what about the "top end"? Quite simply, it's fast, it's accurate, and most importantly, it's predictable. This plane really has no bad habits, and to the intermediate and better flyer there is nothing this model will do in any flight mode that will catch you off guard. I did notice that at sustained top speed there seemed to be a slight tail wiggle. I don't know if it's something I built into the plane or the "design" was reacting to the speed produced by an over abundance of power. In any case, backing off just slightly on the power eliminated the perceived condition.

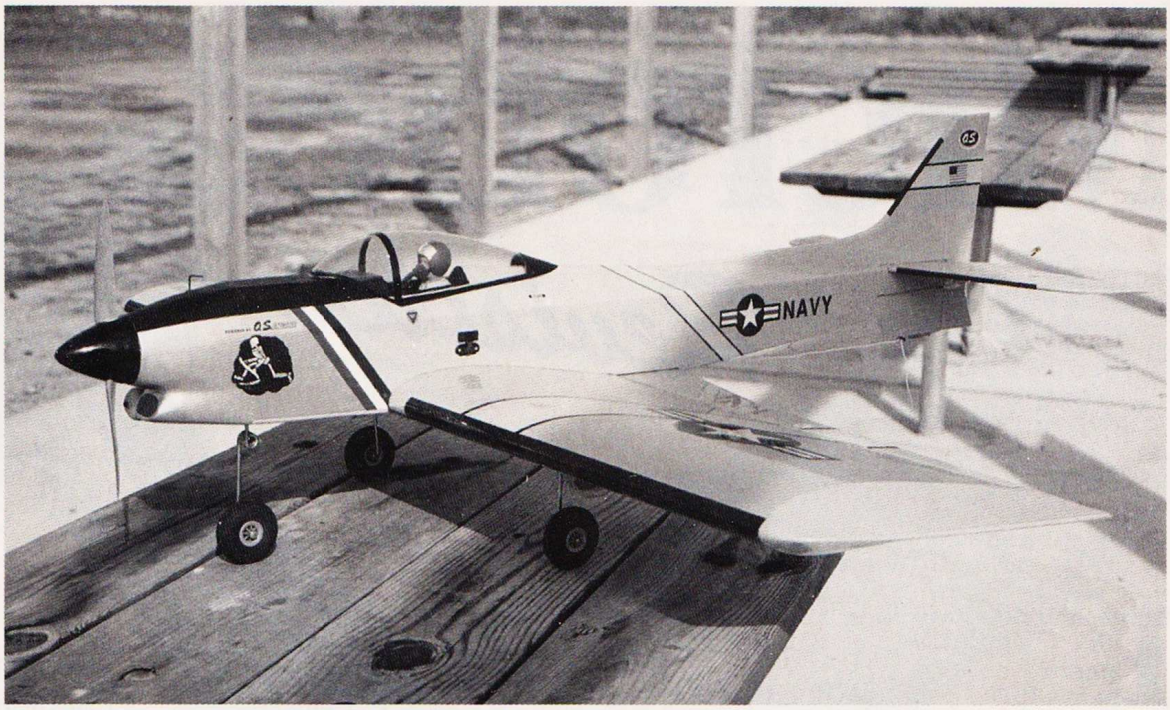
Because this model has three relatively large wheels "hangin' in the breeze" it bleeds off energy (speed) very quickly when you remove power. This, coupled with the flap, can make for some impressively slow landing approaches.



With the fuselage finally framed, Vic was ready for the final finish, after a good sanding. He chose to use Navy Gray UltraCote for a military style scheme, but warns that it will be hard to see in the sky.

As far as landing is concerned, there is no concern! It slows quickly, sinks predictably, and flares beautifully. There is only one condition to all of this modeling "nirvana." You absolutely must be able to bring your motor back to a slow idle. At the light weight that the *Contender* can be built it doesn't want to stop flying with even minimal power.

Aerobatics? How's your imagination? The *Contender* is one of those models where precision is really not an issue (if precision is your bag, you're way beyond this model anyway!) Once you leave the ground, your fingers will have minds of their own and you'll almost be a bystander watching. This is really a fun airplane.



Though the original *Contender* kit recommended a .60, thirty years ago, the increased power of modern engines means a smaller displacement engine is perfectly ample, and plenty of power like the O.S. .46FX.

The power supplied for this review is the O.S. MAX .46FX. Top Flite claims that this model can handle up to a "60". With the O.S. .46FX the performance was very spirited and the model would literally accelerate vertically. At a flying weight of 5 pounds/14 ounces, there isn't any maneuver this model can't do with this power! Keep in mind, back in the 20th century, when this model was designed, the ".60s" of that era didn't have the power most sport .40s have today. In my opinion, the O.S. MAX .46FX supplied for this review just about hits the reasonable power limit for this airframe. Putting a contemporary .60 into this model may or may not overstress the airframe, but really, who needs it? The *Contender's* performance sparkles with the ".46". A .60, in my opinion, would be overkill!

I finished my *Contender* in Navy Gray UltraCote and as you can see has a nice jet look to it. If you choose to go with this gray color scheme I hope you have good eyes! That gray really gets lost on an overcast day.

As it was back in the last century, the *Contender* is still just that! Not only is it a contender, it's still a winner!

Safe flying—Vic