

# DAS MINI STIK

If you think you're  
a hot pilot,  
try this 36" span,  
.19 powered son  
of Ugly Stik and  
Liddle Stik!



Wagger, the peripatetic Basset, and the better half of Walt and Wagger, comes out of retirement to bring you the ultimate in mini-multi's.

Walt's old Chevy clanked to a stop just one hundred feet before he reached the airport runway where he and Wagger held their Sunday flying sessions. This particular Sunday, Wagger had decided to make the journey on his Christmas Mini-Bike rather than entrust his hide to Walt's clunker. Now, as Walt puffed the last few yards on foot, he was inclined to agree with the feisty Basset's judgment.

"Fine time for the old bolt wagon to poop out," grunted Walt. "Cold Winter day, big mosquitos and all. Man, just look at that orange mosquito coming at me now. Must have a three foot wingspan . . . Hm'm'm. Orange mosquitos with three foot wings? Oh, no! That daffy dog has done it again!"

Walt's last words descended in pitch in neat accordance with the Doppler effect as he dived for a ditch to avoid that buzzing orange streak. Luckily, his expanded waistline caused him to roll gently to a stop just in time to see the little orange object execute a neat Immelman and then drop neatly to the runway. As Walt stared in amazement, it issued a series of burps and then returned to the parking area which contained only a dog and a Mini-Bike. The dog made a quick motion, then all was silent.

"Wagger," groaned Walt as he hoofed the last distance to the pit area, "one of these days . . . what in the . . . aha! You finally shrank your MonoKote too tight. Look at your 'Liddle Stik'; it's all squeezed out of shape!" Walt turned to the dog with a triumphant gleam, only to wither before Wagger's disgusted glare.

"Look, muddled master," the talking dog snorted, "stretch your memory back to 1966 when Phil Kraft came out with the 63" 'Das Ugly Stik.' It was a boxy aircraft with a few scalloped edges on it to make it resemble an Eindecker. It became so popular that the advent of small propo radios inspired Larry Leonard to publish a 46" version called 'Das Liddle Stik' in 1968. Well, the small size of the modern radio has inspired Wagger to try a 36" version. Voila! Your three foot orange mosquito!" Wagger executed a low bow, scraped his hose and then sneezed. Hurriedly padding over to his Mini-Bike, he extracted a monogrammed handkerchief from his rally kit and gave his nose a tremendous honk.

"Well, boss," he sniffed, "you wanna build one? I have a detailed plan right here."

"Right!" enthused Walt. "Hey, it looks pretty simple; do I have to wait for detailed building instructions? I'm not exactly a beginner, you know."

Wagger tossed his head. "If you were inexperienced, I'd say stay away from this little bomb for awhile. It doesn't have a single bad habit, but it's responsive as a new bride and it greases-in pretty fast. How about spending a little time going over some of the features and its flight characteristics instead?"

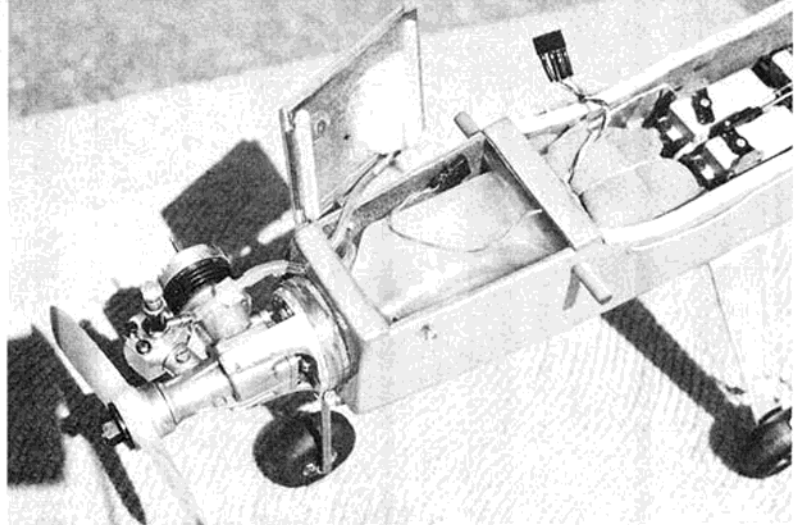
Walt nodded. "I'm all ears," he said.

"I think you're being nasty," Wagger retorted, "but I'll proceed anyway."

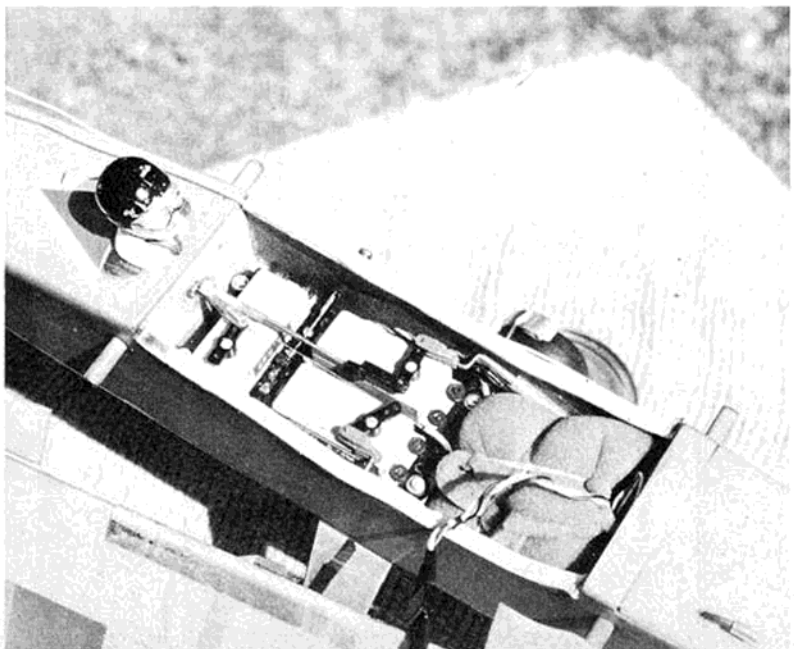
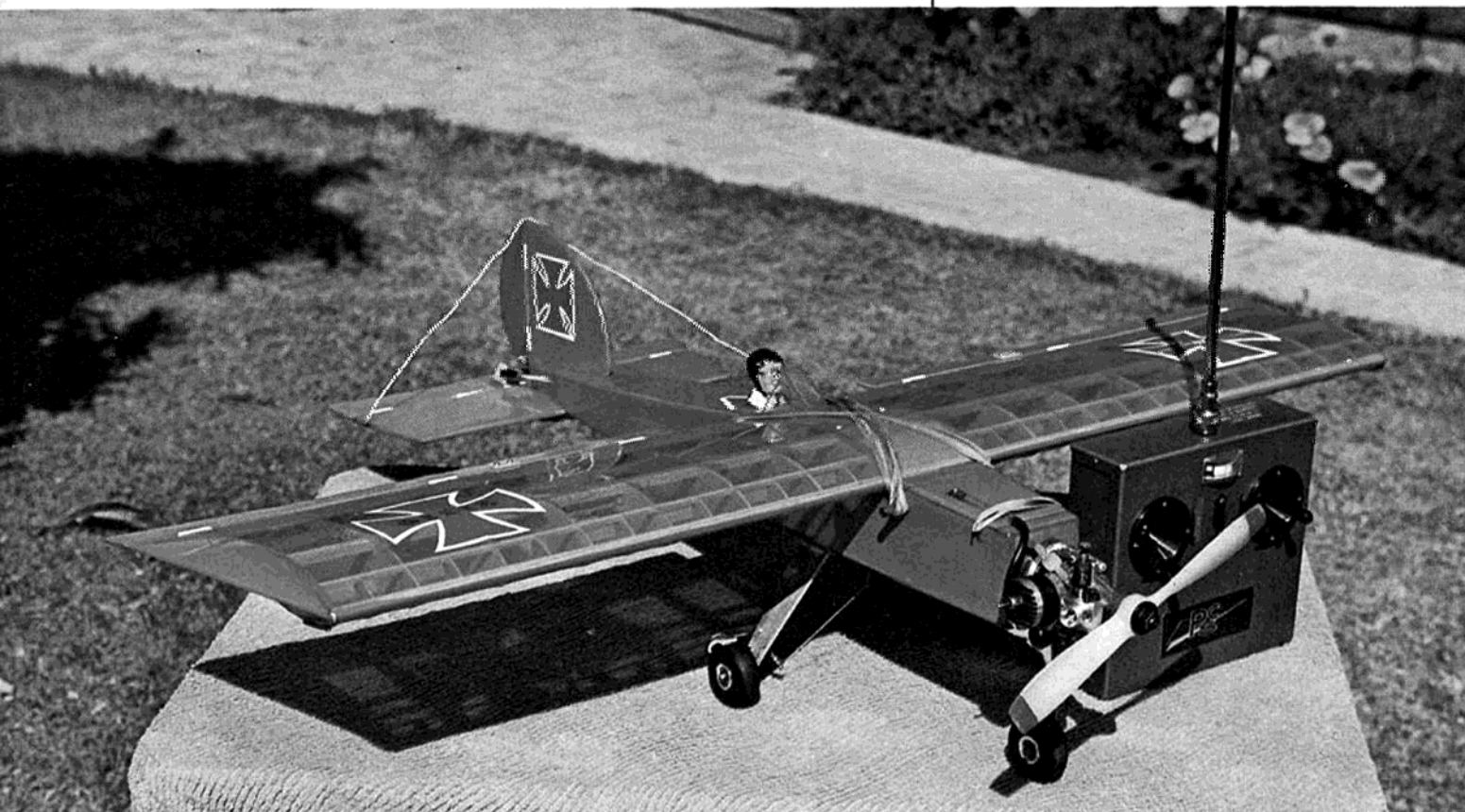
First of all (Wagger pointed out, as he settled his haunches onto his transmitter) you'll notice that the construction is almost identical to the 'Liddle Stik.' I did move the battery pack to the rear and the nose wheel to the front of the firewall; that was necessary to keep the C.G. in position and to make room for a tank to feed that O.S. Max .19. Install the battery pack with foam during the construction, then glue in a couple of scraps to hold it in place. I used the small 250 mah pack, but I'm sure the 500 mah pack would be fine. Incidentally, the location of the battery plug makes a harness extension necessary for charging. I think Kraft has them made up, but I made one. I soldered a male and a female plug together, back to back, then ran 8" of red and black wire to another female plug. The "back to back" plugs go between the battery pack and switch; the female plug extends forward into the tank compartment. All you have to do for charging is remove the tank hatch for access to this plug.

The nose wheel assembly, you'll notice, is external for simplicity and cheapness as well as tank volume. If you fit the plywood pads carefully, you'll find it as durable as any you've used. Originally, I used a Nylink to fasten the NyRod to the piano wire tiller. However, after shearing the pin out of several, I did this: take a sheared Nylink and drill another hole right where the pin sheared out. Bend up an "L" from piano wire and pass it through the Nylink and tiller; then slide a piece of fuel tubing over the Nylink and piano wire leg. It takes the punishment, but doesn't cause metal-to-metal noise. An accident usually only bends the tiller slightly, and it can be straightened and re-soldered easily.

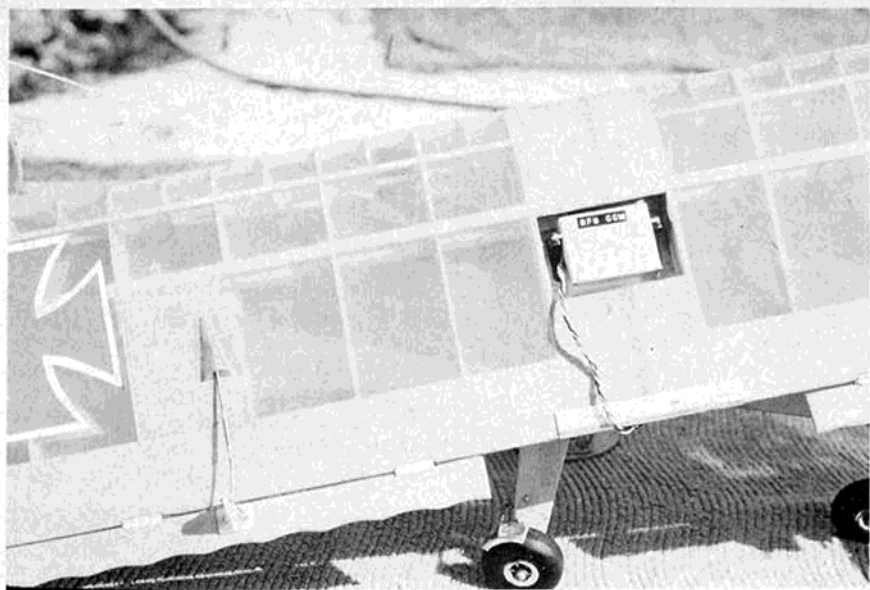
By Loren Dietrich



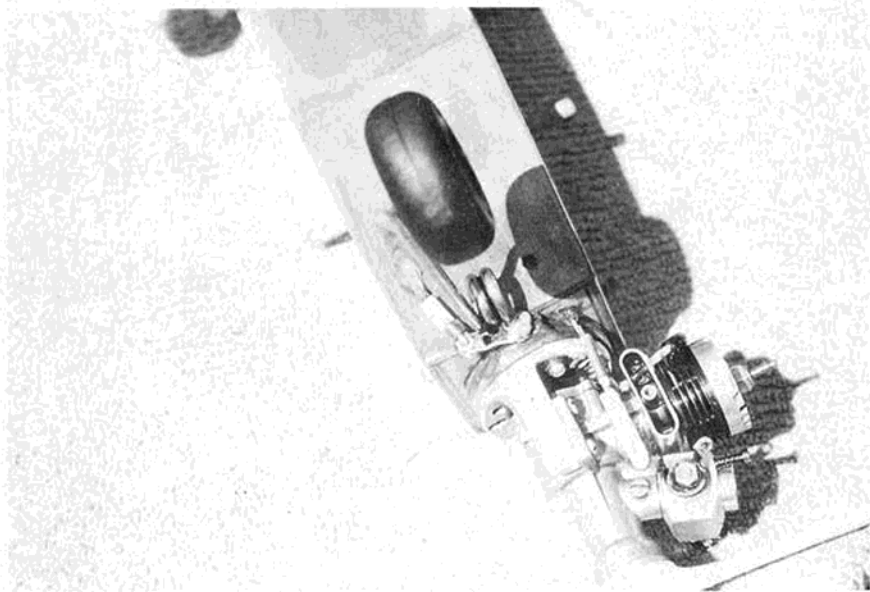
This diminutive three foot span multi can take up to KPS-10 size servos and is complete with steerable nosegear and brakes in addition to all usual control functions. It will do everything the bigger 'Stik's' will do and a couple of things they're scared to try.



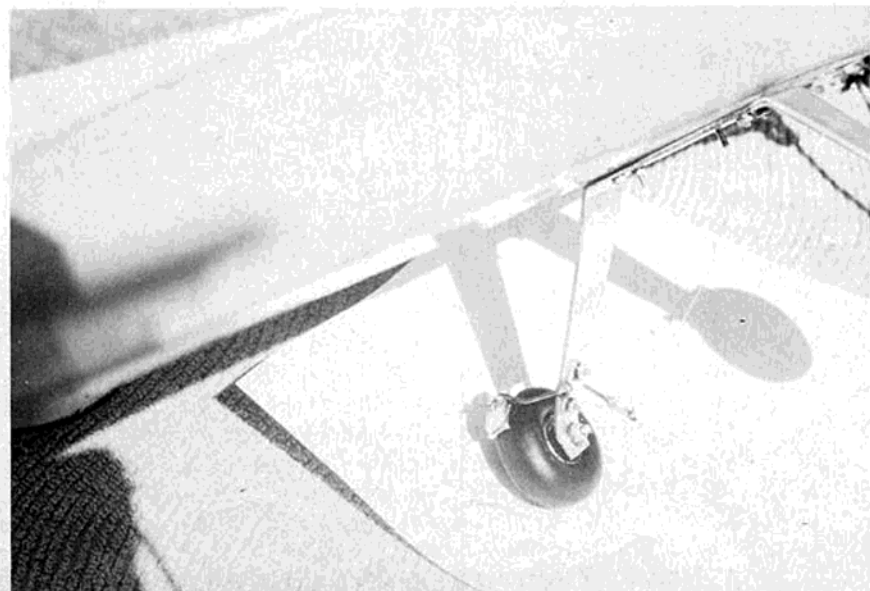
Now, for the fuel system. The Pylon brand SS-4 tank will fit easily, but gives a little less duration than I like for Sunday flying. Just to see if I could do it, I crammed an SS-6 in and it works! Looks god-awful though, so I'd suggest you use the 4 ounce and be content with reasonable flight time. With either tank, I'd suggest you use the Mickey Mouse pressure system mentioned in RCM a couple of years ago. For those of you who missed it, do this: Take a small piece of brass fuel tubing and drill a small hole right smack through one side of it. Then drill a couple of holes though the exhaust stack of the engine that will be a snug fit on the tubing. Slide the tubing into these holes, being careful



ABOVE: Close-up of aileron servo and linkage. Transparent orange MonoKote used on entire aircraft for visibility.



ABOVE: View of throttle linkage and steerable nosegear. BELOW: Wheel brake set-up.



to align the hole in the side of the tube to point **directly** at the piston. Pinch off the bottom end of the tube, then deform the other end slightly to keep it from working out. Then, run a piece of black neoprene tubing from the top end of the tube to the single vent of the tank. The idea is to put the pressure of the exhaust directly into the tank to supply a more positive flow during maneuvers. A fringe benefit of the method is that pressure is proportional to engine speed, giving oomph during maneuvers but no flooding at idle. It's so darn simple it shouldn't work but it does! I recommend it anytime, but it's quite necessary if you are going to try to run a 6 ounce tank on a .19. Give it a try.

In case you think the brakes are a luxury, forget your thinking and put them on anyway. They operate with down elevator, and give complete ground control. They give time to collect the courage before take-off and are also used to bring it to a smoking halt after landing. The only change from Kraft drag brakes is the addition of a small shoe with rubber brake lining, since the wheels are small. The ideal lining for them is sections from a rubber leg pad for metal folding chairs. Ten cents gives enough brake lining for a year.

The construction of the "Mini Stik" is not particularly light, so the covering must be. If you're careful, four feet of transparent MonoKote will do the whole job with less weight than any comparable technique. In addition, it's easy to patch and you can see the thing against the grey winter skies! So help me, that transparent orange is like flying a flashing spotlight. Don't consider anything else for this bomb.

The radio presents no real problems on installation, although it is tight. Servos must be Kraft KPS-10's or smaller, of course. My receiver did not allow loose foam packing, so I just laid it gently in place between the two nylon pushrod housings. I then put a small piece of foam between it and the servos. **DON'T** wedge it in place with **tightly packed** foam which will transmit vibration horribly. I've had no problem in over a hundred flights.

On the power end, I use a Kavan carburetor because I like its idle and full power. Straight Supersonic 100 is adequate and gives long life. Either a wood or nylon prop is fine; I use a 9-4 cut down to 8¼ and then carefully balanced. Power could be reduced to a

.15, but no further with full-house multi.

Now, for flight. It will do everything its mommy and daddy will do and maybe a couple of things that they're scared to try. Take-offs are simple, just steer and hold some "up." If your engine is running well, pull up to sixty degrees and climb out of sight. When flying the pattern, be sure to use rudder, as necessary, for tracking during loops since it is short coupled and has fair torque. Rolls are so fast that you lose count after three. Spins can be recovered after three by releasing controls. After **more** than three spin turns, give a little down for recovery. Snap rolls are recovered by releasing controls, this wing is not prone to sudden "cut-off" or unintentional snaps, so don't worry about it.

Landings take the same technique as any hot aircraft. For the record, I **have** landed it without power a number of times when making tank experiments. Just **keep the speed up** right down to the ground, then flare and you're in. Ordinarily, I trim in some up and then use the throttle for altitude control. Better land "over your shoulder" the first few times until you've received your fighter wings. After landing, slam on the brakes with full down until it comes to a stop. Then taxi back and park it by the tool box; pull the throttle trim back to kill the engine, then casually saunter over to turn off the switch while you hide your delight at being the first kid on your block to have one.

"Well, Wagger," mused Walt, "this must just about **end** your search for the small multi airplane. Where do you go from here?" □

## **From RCModeler Oct. 1973**