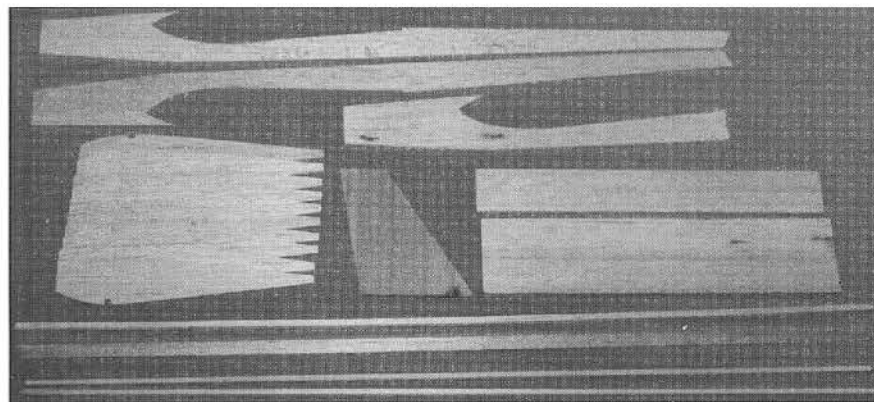




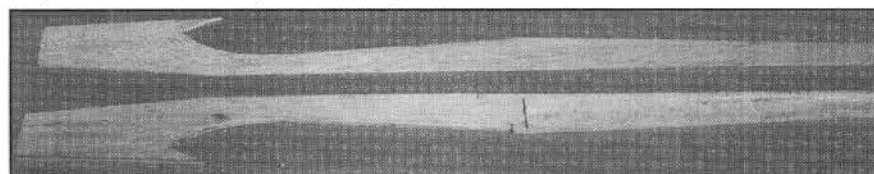
Wild Weasel

By Jeffrey E. Petersen

"... it did not get this name until after it had been flown a few times!"



All parts cut out and ready for assembly.



1/8" balsa filler has been glued in place on the front section, and the 1/8" sq. stringers added to the rear section (see plans for details).

Everyone gets the jitters when flying that new plane for the first time, whether it's a new design or built from an established kit. I try to handle this by adopting a "what the heck, it's gotta fly sometime" attitude, and that is exactly what I did the first time I flew the Wild Weasel. (I should add that it did not get this name until **after** it had been flown a few times!) I made the mistake of not setting the control throws to minimum, which made for a very wild ride. On top of this, a full fuel tank and no throttle made for a very wild and **very long** ride. The best way to describe the experience is to say, "Wow, what a rush!"

Don't let this discourage you from building a Weasel, because with the control throws or rates turned down, it is one of the most stable planes I've ever flown. It goes where you point it, has flown in 20 mph winds without batting an eye, and will roll faster than you can count. Dial in the kind of performance you want, and the Weasel will deliver in a package with a 24" wingspan!

The Wild Weasel captures the look,

WILD WEASEL

Designed by:
Jeffrey Petersen

TYPE AIRCRAFT

1/2A Fun Fly

WINGSPAN

24 Inches

WING CHORD

9-3/4 Inches

TOTAL WING AREA

234 Sq. In.

WING LOCATION

Mid Wing

AIRFOIL

Symmetrical

WING PLANFORM

Constant Chord

DIHEDRAL, EACH TIP

NA

OVERALL FUSELAGE LENGTH

20-1/2 Inches

RADIO COMPARTMENT SIZE

(L) 7" (W) 4" (H) 1-3/8"

STABILIZER SPAN

10-1/2 Inches

STABILIZER CHORD (inc. elev.)

4 Inches

STABILIZER AREA

42 Sq. In.

STAB AIRFOIL SECTION

Flat

STABILIZER LOCATION

Top Of Fuselage

VERTICAL FIN HEIGHT

4-3/8 Inches

VERTICAL FIN WIDTH (inc. rud.)

2-1/4 Inches (Avg.)

REC. ENGINE SIZE

TD .049-.051

FUEL TANK SIZE

Sullivan SS 1 Oz.

LANDING GEAR

Single

REC. NO. OF CHANNELS

2-3

CONTROL FUNCTIONS

Elev., Ail., (Throt. Optional)

C.G. (from L.E.)

1-13/32 Inches

ELEVATOR THROWS

1/4" Up — 1/4" Down

AILERON THROWS

1/4" Up — 1/4" Down

RUDDER THROWS

NA

SIDETHRUST

2 Degrees Right

DOWNTHRUST/UPTHRUST

2 Degrees Down

BASIC MATERIALS USED IN CONSTRUCTION

Fuselage Balsa, Ply, Bass

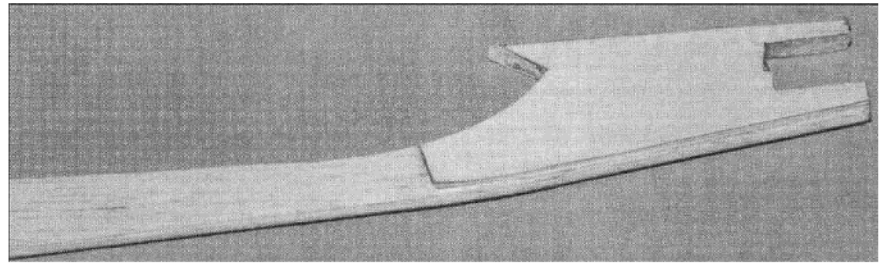
Wing Balsa, Ply, Bass

Empennage Balsa

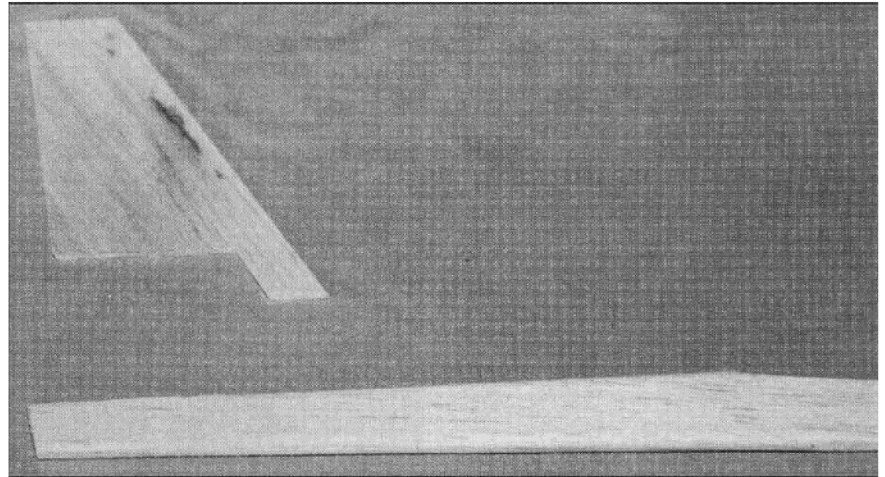
Wt. Ready To Fly 16 Oz. (1 Lb.)

Wing Loading 10 Oz./Sq. Ft.

along with much of the performance of the fun-fly planes that have been so popular in recent years. Not much more than a wing and tail feathers, the Weasel is "designed to fly, not to crash." This has given it a wet weight of just 16 oz. It does depart from the usual fun-fly practice of using an arrow shaft to link the wing and tail. Instead, a profile fuselage allows three servos and a receiver to be mounted within the center section of the wing. Keeping the components close to the cen-



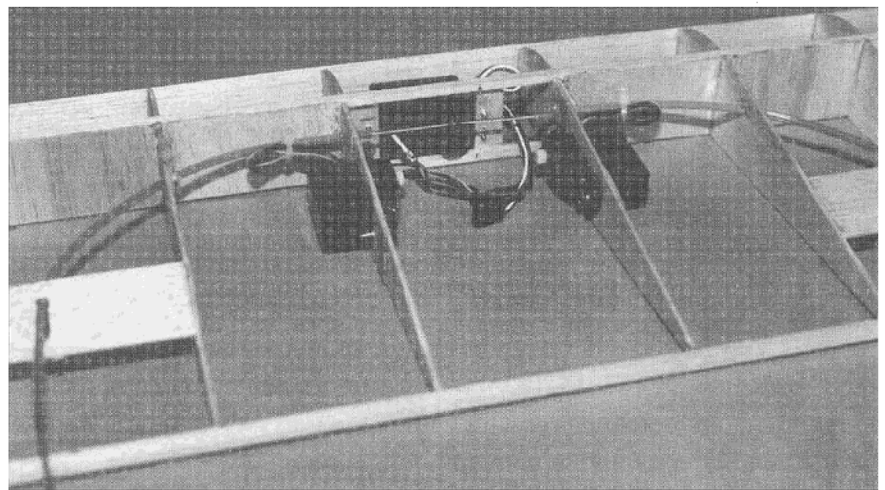
1/32" ply doublers are added to both sides of nose.



Vertical fin fits into slot located in fuselage.



Completed fuselage assembly.



Wing assembly is built-up with the servos in place prior to sheeting.

terline, allowing the fantastic roll rate.

Even at a mile above sea level, a Cox TD .049 pulls it along at a good clip, but not so much as to induce fluttering of the large control surfaces. For this reason, you can fly the Weasel with just aileron and elevator, or go for a third channel and throttle control.

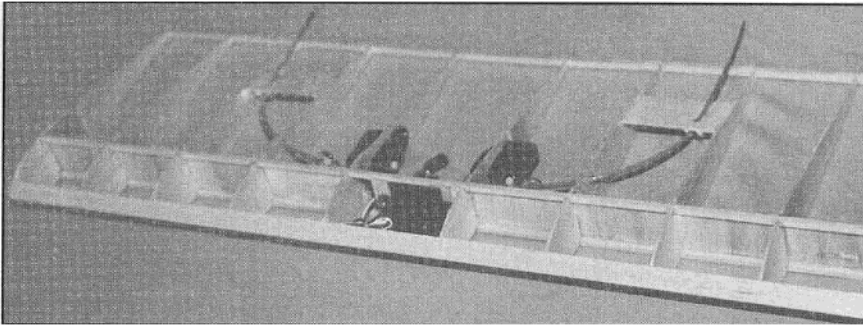
A radio with dual rates is recommended, as this will make the Weasel easy to land, while allowing for white-knuckle rolls at the flip of a switch. A micro-receiver and servos are also required, though the aileron

servo can be a mini. A 270 mAh battery strapped to the fuselage just behind the engine rounds out the radio installation.

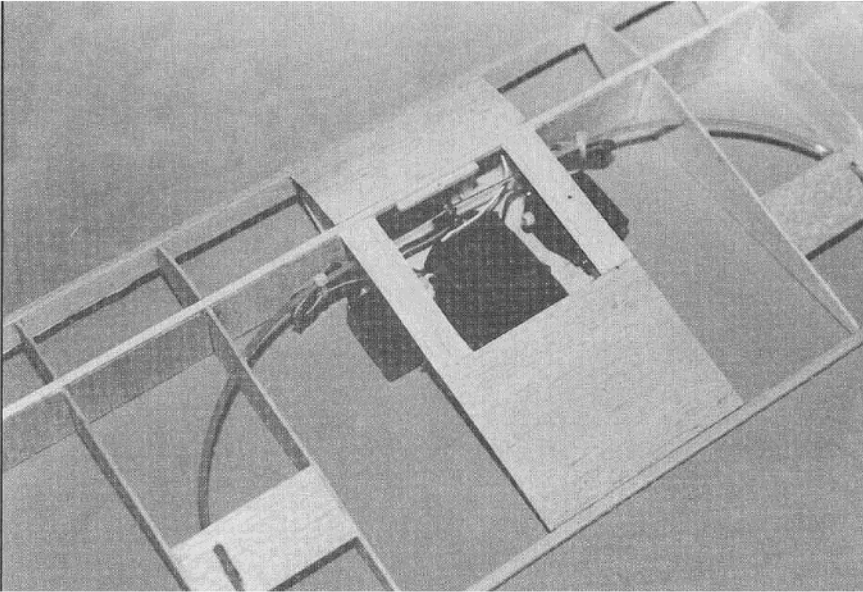
It's easy to build, fun to fly, convenient to transport, and despite appearances, is very tough. Don't be a chicken waiting for a Weasel to eat your lunch! Start building and join the Wild Weasel Squadron today!

CONSTRUCTION

Start out by making a "kit" out of all the pieces needed. (There's a reason why nearly



Simple lightweight balsa construction is used throughout.



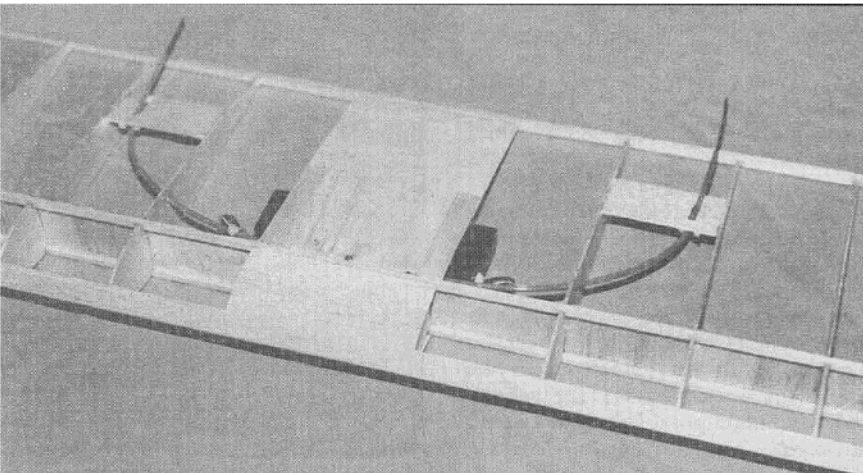
Aileron control is via flex-cable from central mounted aileron servo. Elevator servo is on left, throttle (optional) is on right. The receiver is mounted in the center.

every construction article starts out this way: **It works!**) Medium balsa works well for the ribs and tail feathers, though you may want to try something a little harder for the fuselage sides. The fuselage doublers are made from 1/32" plywood, and the spars are 5/32" sq. basswood. (It should be noted that the spars appear to be available only from Midwest. If you cannot find these, substitute something that "looks about right!"

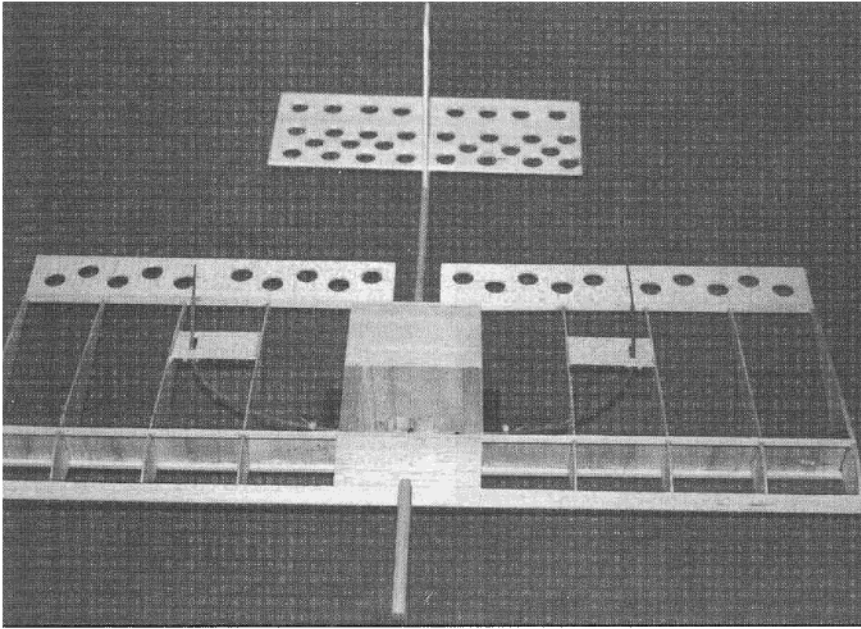
Wing:

Start by determining desired servo placement on inboard ribs (R1), and cut to fit. Use

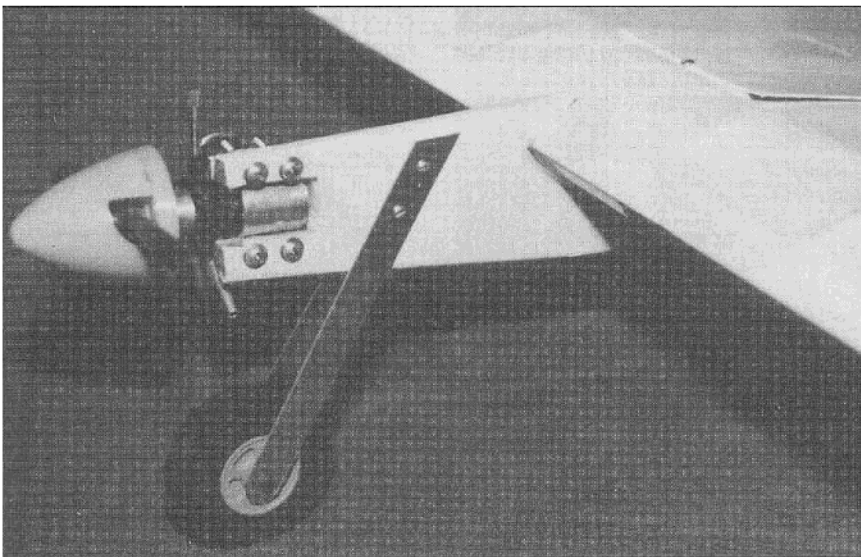
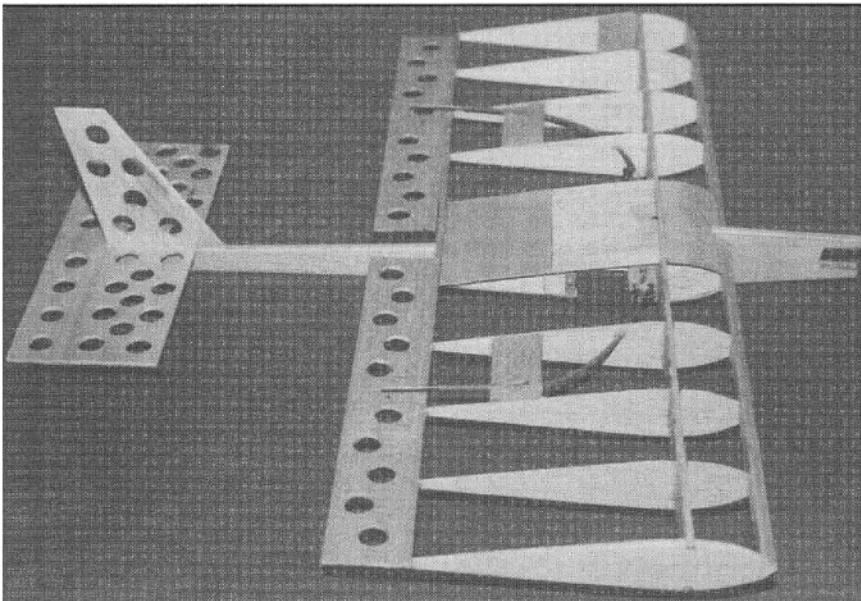
1/32" plywood as a doubler to reinforce these ribs. Pin the bottom spar over the plans. Using scrap balsa, shim up the trailing edge of the ribs (R2, R3) so that they are level, and glue in place. Glue the top spar in place, then add the 1/2" triangular leading edge and the 3/16" sq. trailing edge, and sand to shape. Add ribs R1, making sure they are centered on the leading and trailing edge. Vertical grain 1/32" shear webbing is added between the top and bottom spars in all but the center bay. Glue outrigger reinforcements to inside of wingtips. Mount the servos securely to



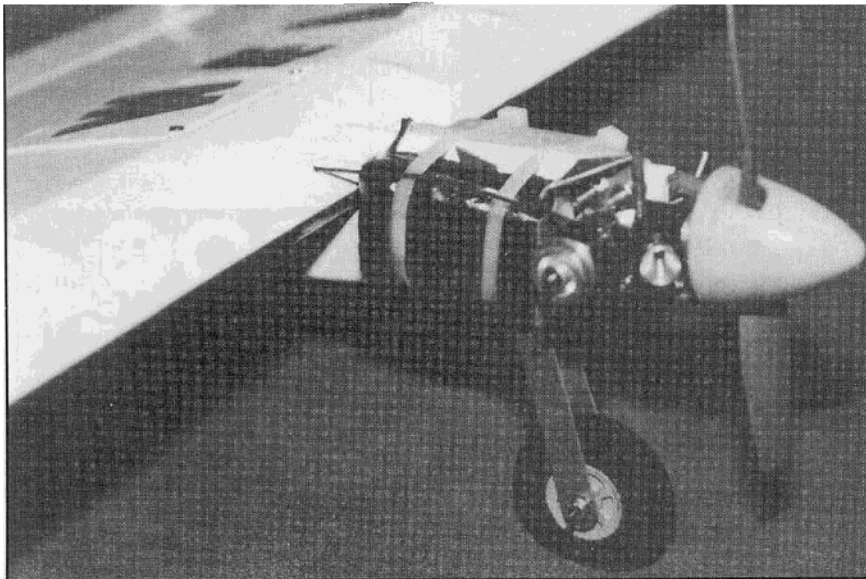
Wing center section hatch is shown in place; wing is ready for ailerons and final sanding.



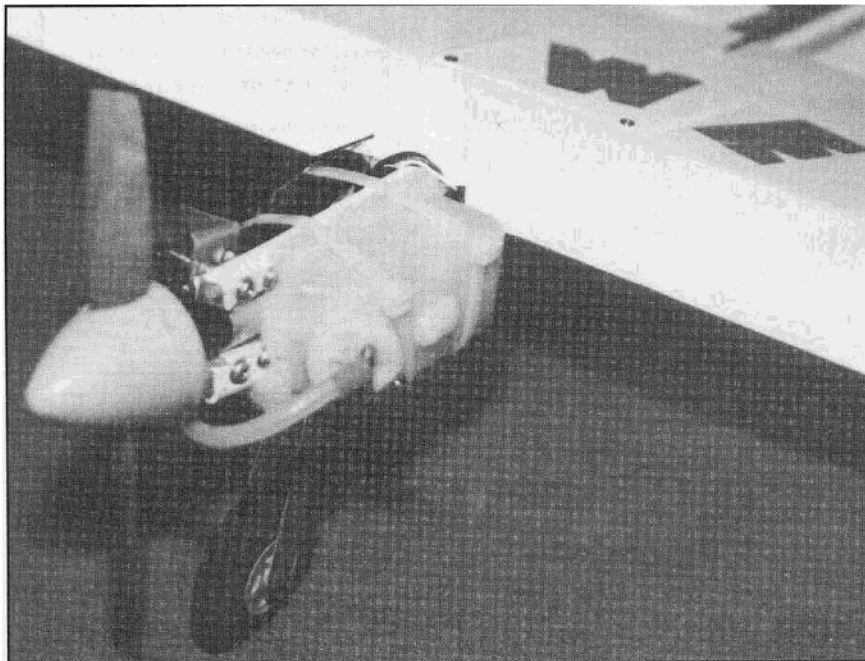
Completed airframe, ready for covering.



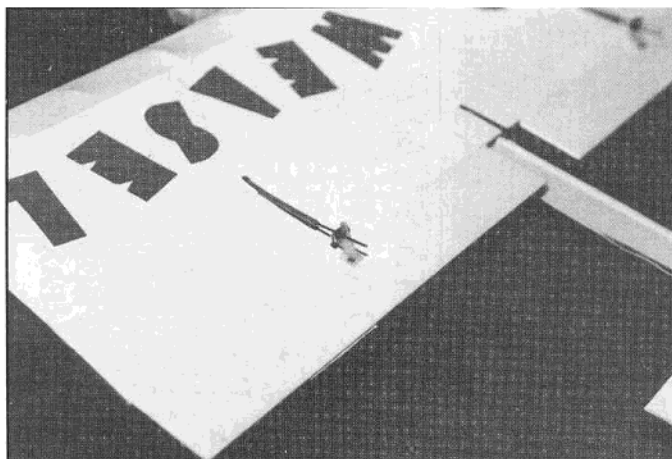
Landing gear struts are made up from lightweight metal or plastic, then bolted to fuselage. A lightweight foam wheel completes the main gear.



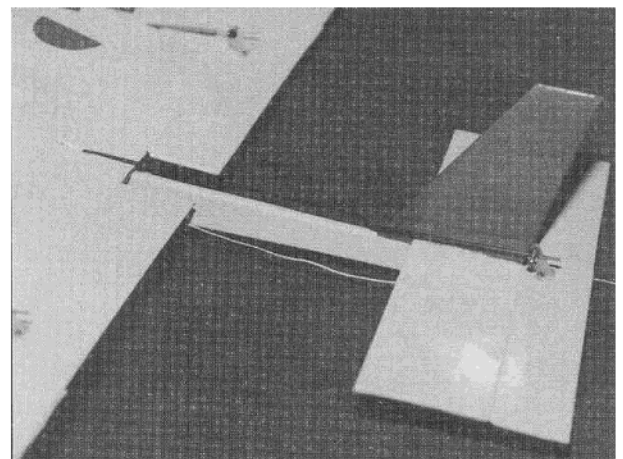
270 mA battery pack is mounted behind the engine. Note: Throttle cable is routed over battery pack to sleeve type throttle.



One ounce fuel tank is mounted on the side opposite the engine/battery. Cable ties are used to secure both the battery and fuel tank.



E-Z type connectors are used to connect all control surfaces to the pushrods/control horns. Gapless covering material is used to hinge all control surfaces (see text for details).



ribs R1, because once they're in, they are not at all willing to come back out!

The same goes for the aileron servo. Mount this to a 1/16" plywood servo plate so that the control arm extends just past the rear edge of the spars. Using a Kwik-Link and a short piece of piano wire, determine where the flexible control cable will pass through the ribs, and cut holes to fit. Use pieces of 1/16" balsa sheet to make cable exits, and glue in place. The cable guide is a good place to secure excess servo leads with a couple of zip-ties.

Use 1/32" balsa to sheet the center section. The photos show the way the prototype was done, but the hatch area can easily be altered to suit your individual taste and radio. I mounted the receiver with Velcro glued to both the receiver and the bottom of the radio compartment. The Velcro provides vibration protection as there is no room for any effective amount of foam rubber. Switch positioning can be a little tricky. To avoid this problem, I use an aileron extension from the receiver which is simply plugged into the battery to turn on the radio.

Fuselage:

The fuselage is simplicity itself. Use the wing to ensure a tight fit in the wing saddle area. When cutting the engine mount, remove only the wood that is necessary. I would add that you should build it straight, but you would really have to work at it to make this fuselage wrong! (Do note that the front half of the fuselage is solid, while the rear is hollow.) Just follow the plans and you should have no problems.

Tail Feathers and Control Surfaces:

All control surfaces are cut from 1/8" balsa sheet. Lightening holes are cut in these using a piece of brass tubing. To do this, sharpen a large piece of brass tubing (.50"-.75") inside and out with a file, then notch the edge as well. Lay the sheet on a piece of hardwood, and cut out the holes with a twisting motion. The results are well worth the effort!

Covering:

Not a lot needs to be said about covering except **keep it light!** My personal choice is Hobby Shack Flite Kote, but others like it, work equally well. It's important when cov-

ering the wing that the top and bottom contrast sharply: When the Weasel has been rolling, you need a quick fix on its orientation when you center that stick!

Covering material makes great hinges too. It's easy to apply, and offers the added benefit of sealing the hinge gap. Sand the leading edge of the control surface to a 45° angle as shown in Figure 1, then hold the edges to be hinged against each other. Iron on the covering material to both surfaces, move the control surface in the other direction, and repeat. Voila! The result: perfect hinges with no binding, no glued hinges, and without ugly, inefficient gaps.

Final Assembly:

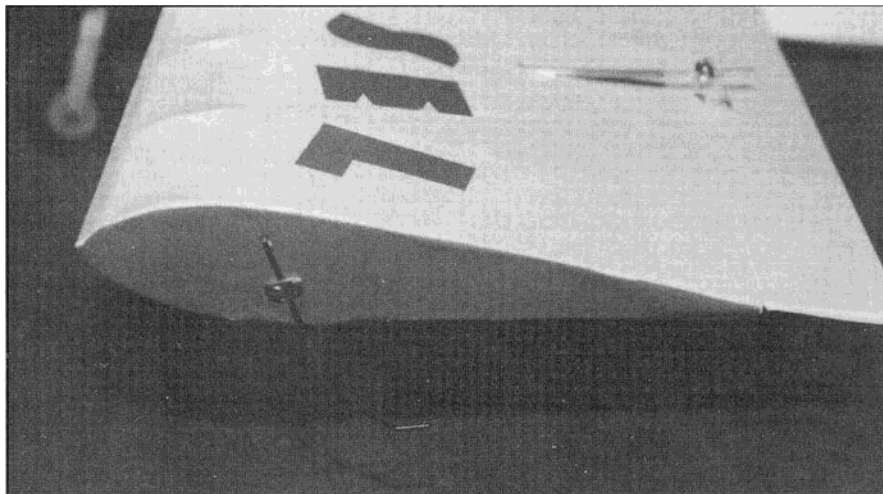
Use epoxy to mount the wing to the fuselage. Take care to mount it straight and level, as there is not much fuselage to "eyeball," and once the wing is on, it's there to stay. As the vertical fin is keyed into the fuselage, use this to ensure a square horizontal stabilizer.

Use Kwik-Links on all control horns, and bend a control rod to shape for smooth elevator control. The engine is mounted using 4-40 bolts, and an extra washer should be added under the front engine mounts to give the engine some right thrust. The pictures show a homemade aluminum exhaust deflector that is bolted to the engine mount. This keeps the battery from getting as oily as it would without it; either way, the battery should be wrapped in a plastic bag.

The landing gear is pretty minimal; its entire purpose is to keep the plane from getting scratched up on landing. Use strips of an appropriate sheet metal or plastic for the landing gear, and mount with 2-56 nuts and bolts. If you're planning any of those kamikaze-style touch and go's, you'll need to make it really beefy. I tried this once and collapsed my rather light aluminum gear. A lightweight foam wheel helps keep the weight down while acting as a shock absorber as well. The tail skid is a Carl Goldberg wingtip skid.

The wingtip wire skids are bent from music wire and placed in slots cut in the wingtips. The end of the wire is bent 90° and placed in a hole drilled at the top of the slot. A landing gear strap is used to hold the skid in place.

Throttle linkage is a 2-56 control rod if throttle control is desired. Ace makes a nifty little throttle sleeve for the TD, as well as a fine-thread needle valve assembly, both for under five bucks each. These are among the best deals in the hobby business, and no Weasel is complete without 'em. (That is, of course, if you can resist that new throttled and muffler-equipped

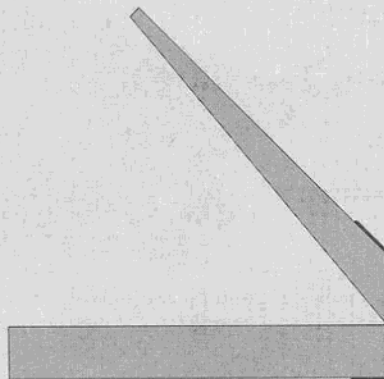


Bent music wire is attached to wingtips to prevent them from dragging the ground.

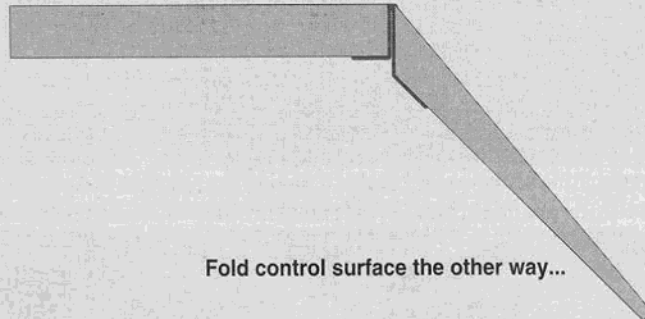
Easy Iron-On Hinges



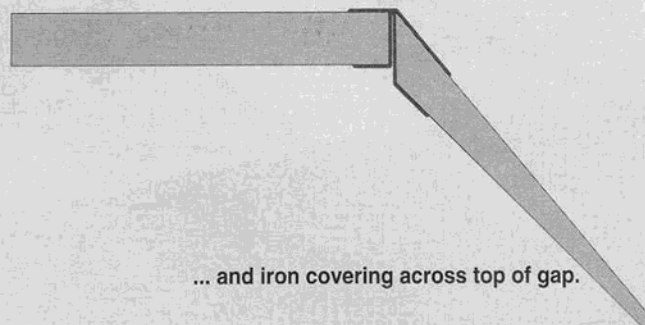
Start by sanding the leading edge of the control surface to a 45 degree angle.



Hold surfaces as illustrated and iron covering across gap.



Fold control surface the other way...



... and iron covering across top of gap.

Cox .051 that is now widely available.)

The battery pack and one ounce slant tank are mounted to the fuselage sides using two large zip-ties. Mounting the tank on its side makes for a neat installation. Use foam rubber under both of these to provide protection from vibration. The foam from a cheap computer-mousepad is perfect for this, as it is dense enough to protect the tank and battery from the landing gear screws.

Flying:

For initial flights, control throws should be set at 1/4"-3/8" up and down, and gradually increased to suit your tastes. The Weasel should balance at the center of the main spar for the first flight. Again, this can be adjusted to suit your individual preferences and ability.

Since this is a hand-launched model, it's a good idea to add a couple of pieces of sticky-backed sandpaper to the fuselage sides under the trailing edge. You'll be glad you did, as this will give your fingers "traction" when it's covered with fuel.

When the engine is running just right, face into the wind, take a few steps forward, and give the Weasel a good toss. Better yet, have someone else toss it for you the first few times. It's a well-behaved plane, provided you're quick on the sticks. The glide rate is good for a plane of this type, so dead stick landings are easy. Even though mine is throttled, I prefer killing the engine and gliding it in. When you get a good feel for it, put the rates on high and watch it go! You are now an official member of the Wild Weasel Squadron!



From RCModeler Sep. 1 1996