

MICRO VAGABOND

Designed for the new miniature radio systems, this 18" span replica of Bryce Petersen's popular Vagabond is a must for the small field flyer.

By
Bryce
Petersen

It has been said, "the bigger the model, the better." It all has to do with Reynolds Numbers and air molecules. Models are getting bigger and bigger because modelers are striving for realism which is a product of efficiency.

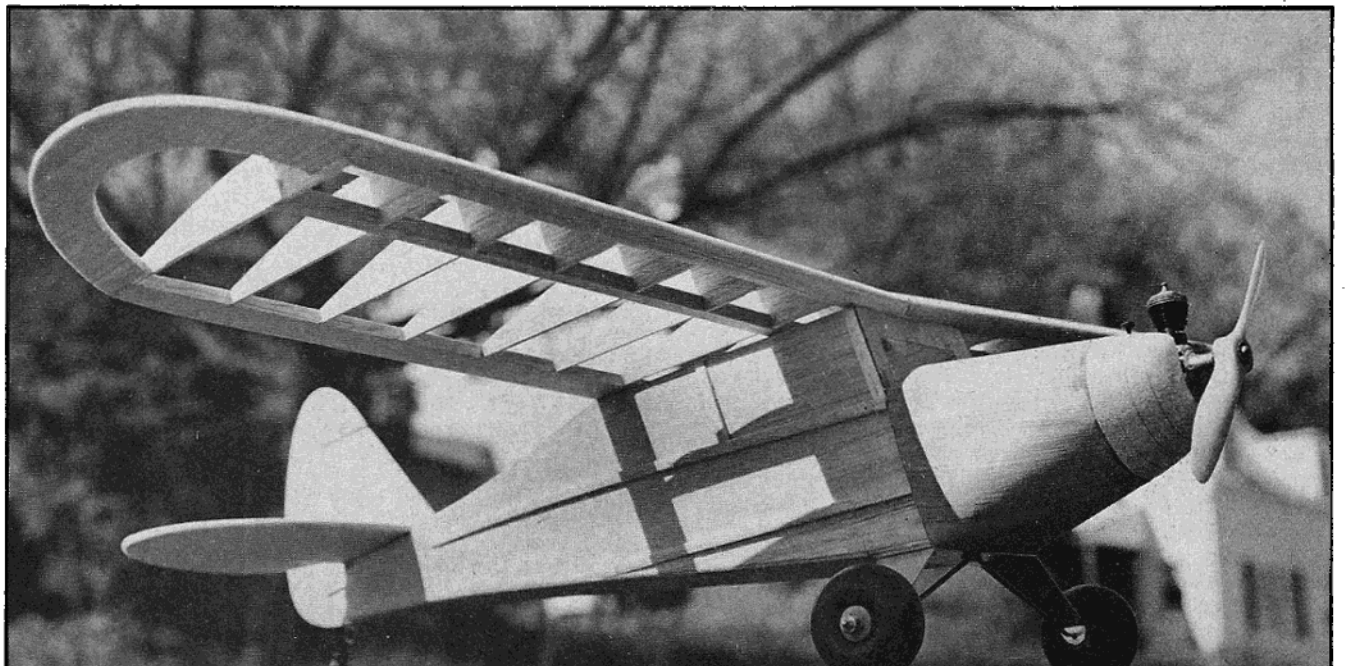
The idea of a small 18" R/C model flying around in a scale-like manner might seem like the impossible dream. Those of us who used to build the little rubber powered models surely have day dreamed about the day we could radio control a model that size. It has been tried with the standard radios, with the usual result of a heavy wing loading causing the super-fast, barely

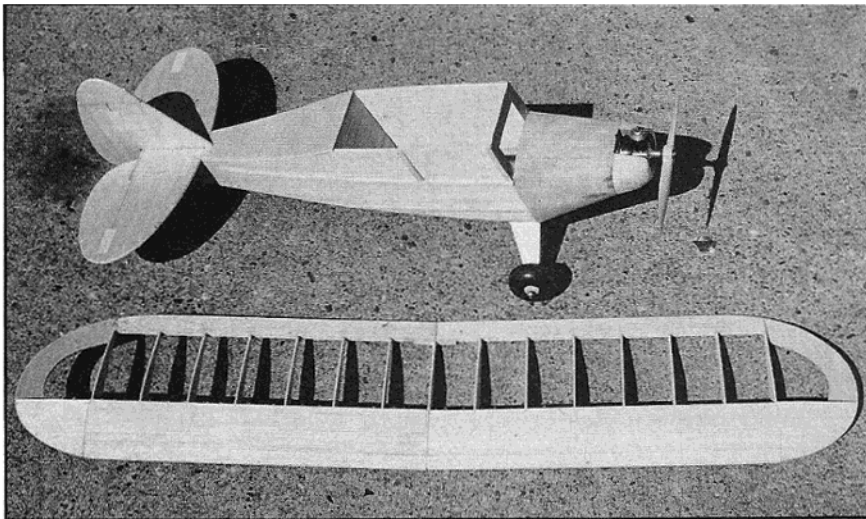
controllable bomb.

When you look around today at the "state of the art" in electronics and engines, it is almost inconceivable that you can purchase a servo that weighs only 1/2 oz. and a .020 engine with a dependable throttle.

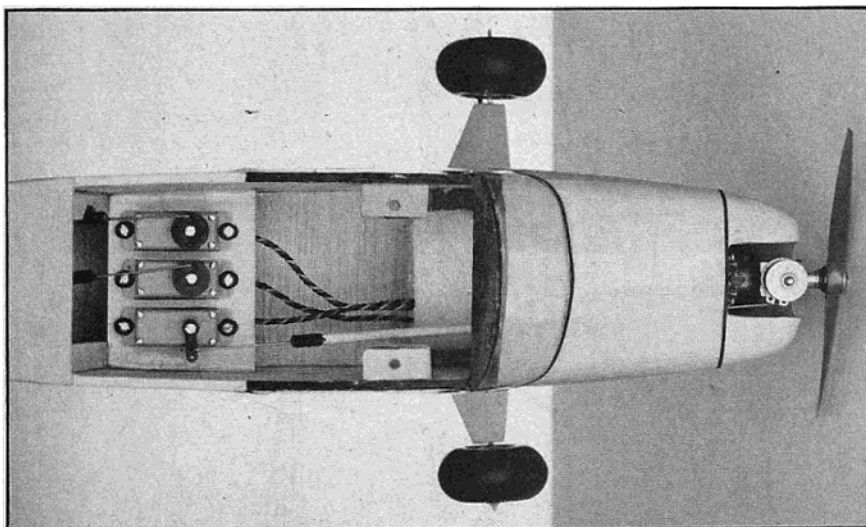
All this was too much for me, so I had to give it a try.

I feel that everyone would like to build a "cute little airplane", but hesitates because of the size and weight of the radio gear. Well, fellows, the time has come. Team up a set of Kraft KPS18 servos with a Cox .020 with throttle; add a small receiver with a 125 mah battery and you come out around 5½ oz. With

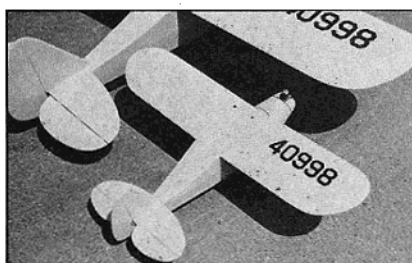




The Micro Vagabond all framed up and ready for covering. Note the simplicity of the construction.



Looking into the radio compartment shows the new Kraft KPS-18 servos mounted 3 abreast. Throttle servo goes to a Cox .020 Pee Wee with Cox throttle.



The Micro Vagabond shown trying to get some shade under mother's wing.

one servo in motion, the current drain is around 100 milliamps so you can have a comfortable 45 minutes flying on one charge.

To make the project more interesting, I promised my friends I would build an R/C model with full control and shoot "touch and go's" in a gymnasium.

Because of the low Reynolds Numbers involved, you should choose a stable design. This is why I scaled down my full size Vagabond model. It is so

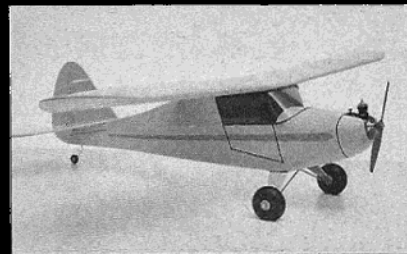
stable in the air, it is almost unfair to enter it in a fun-fly contest.

The Micro Vagabond will fly in a scale-like manner and gives the pilot plenty of time to react. Nice lazy Figure Eights around the antenna is pure joy. Because the model is never far away, I installed the antenna in the wing. This keeps that horrible looking wire from dangling from the rudder. The receiver switch is a small shorting plug instead of the usual switch. With the new two-wire power packs, you simply, break one of the leads.

The model is simple to build. The woodwork can be completed in three evenings.

When it comes to installing the pushrods, things get a little tight. The pushrods are 1/8" dowel and .035 music wire. The control horns are handmade from soft aluminum.

If you are a beginner in this sport, I would suggest that you build several trainers before trying the Micro Vagabond.



MICRO VAGABOND

Designed By : Bryce Petersen

TYPE AIRCRAFT

Micro Sport Scale

WINGSPAN

25 5/8 Inches

WING CHORD

5-7/16 Inches

TOTAL WING AREA

130 Square Inches

WING LOCATION

High Wing

AIRFOIL

Clark "Y"

WING PLANFORM

Constant Chord

DIHEDRAL, EACH TIP

1 1/8 Inch

OVERALL FUSELAGE LENGTH

17 3/8 Inches

RADIO COMPARTMENT AREA

(L) 5" x (W) 2 1/4" x (H) 2"

STABILIZER SPAN

10 Inches

STABILIZER CHORD (incl. elev.)

3 Inches (Avg.)

STABILIZER AREA

30 Sq. In. (Approx.)

STAB AIRFOIL SECTION

Flat

STABILIZER LOCATION

Top of Fuselage

VERTICAL FIN HEIGHT

2-5/16 Inches

VERTICAL FIN WIDTH (incl. rudder)

3 1/8 Inches (Avg.)

REC. ENGINE SIZE

Cox .020 W/Throttle

FUEL TANK SIZE

On Engine

LANDING GEAR

Conventional

REC. NO. OF CHANNELS

3

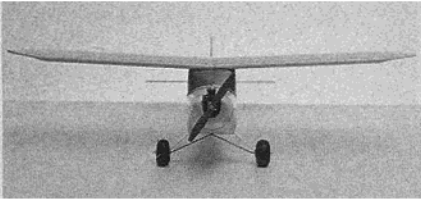
CONTROL FUNCTIONS

Rud., Elev., & Throt.

BASIC MATERIALS USED IN CONSTRUCTION

Fuselage	Balsa & Ply
Wing	Balsa & Ply
Empennage	Balsa
Wt. Ready-To-Fly	11.2 Ounces
Wing Loading	12.4 Oz/Sq. Ft.





From RCModeler Oct. 1978

CONSTRUCTION

Start the fuselage by cutting the two fuselage sides from soft 1/8" balsa. Prepare F-1 from 1/16" plywood and lay it on a flat table. With the two fuselage halves pointing up, epoxy F-1 in place. F-2 comes next and can be held in place by pulling the tips of the tail together which is also secured at this time. Be sure to check the fuselage alignment with a straight line on your work table.

Prepare two F-3's and one F-4 that make up the nose area. Check the location marks on F-4. Using masking tape, place the parts together until everything lines up straight. This can be simple by placing the fuselage on a flat table and weighting it down with a book. With another weight butting up against the firewall (F-4), double check your alignment and tack glue the parts with Hot Stuff. When things feel solid enough, apply the epoxy to it. F-5 and F-6 can be hand fitted. Dress the nose area with the top side and bottom fillets. Wrap the wax paper around the nose area and mark off a pattern for the nose sheeting. I used a light veneer for this, but any light material — like 1/32" balsa will do. The nose block should be prepared slightly oversized with the U-shapes cut-out for the engine. Epoxy in place and sand to shape. Add the landing gear mounting plate and stringers and sand everything lightly.

Tail:

All tail surfaces are cut from soft 1/8" balsa. The ends are rounded with light sanding.

Wing:

Build your wing from tip to tip on a flat table. Before sheeting the leading edge, cut the middle and add your dihedral and plywood doublers for strength. Cover your model with your favorite covering material.

The model is one of those "almost scale" designs. The nose has been thinned down for better prop efficiency.

For those of you who like the model and hope to use an 8 oz. to 12 oz. radio, I honestly believe it is too small for fun and games in the air. If you want to use an .049 engine instead of the .020, you will have a bumble bee.

Indoor and backyard flying is here. Build the Micro Vagabond and have a ball next winter. □