Old Guy RC

Rudder Only - Radio Control
Park Flyers

Swappable Power Pod
fits all planes in 5 mins
Free 1 sheet 1/8" Foam Board Plans

1 hour build time
rudder and electric motor throttle

Instructions Part 1

You will need 1 sheet of Dollar Tree foam board. The nominal thickness is 3/16". The total weight of the foam board is 4 ounces and you will use about 1/2 - 2/3 of the board for the actual airframe.
You will also need:
Bamboo skewers
3/32" music wire 3 feet
and some very light gauge music wire (0.01")
Hot melt glue gun
Xacto knife

Getting started:
Print out the tiled sheets and carefully tape them together using a straight edge to make sure they are aligned. Make sure to study the plans so you know how things will go together. You will only be cutting through on heavy solid lines. Dotted lines are for 50% cuts and bends or lighter lines for position of other parts.

A simple way to hold the plans in place on the foam board is to cut the plan out on the border line and tape over and under the board. As you cut the plans tend to stay in place

Cut out all parts. Make 50% cuts where shown. Remove the pattern except for the wheels.

Instructions Part 2

Trial fit the formers AA, BB, and CC along the fuselage half to make sure they are square and the right length.

Take a dull pencil and run across the 50% cut lines. Run over a second time holding the pencil at a shallow angle dragging the wider part through
Try bending up the fuselage sides and check with your square tool.

Run a thin bead of hot melt glue along the folded section only and hold square until the glue sets.

Position the formers AA, BB, CC and servo tray checking they are square and glue in.

Now, bend the fuselage sides to meet towards the tail. It s very important that this step is done on a flat surface and both sides are square to the surface.

Bring up the other fuselage half and glue along the fold and formers while holding square. Then finish gluing toward the tail making sure the tail meets perfectly.

Importance of alignment for good flight.
The rudder,stabilizer and wings all need to be perfectly aligned for straight and level flight. Trying to trim out a crooked alignment is tough.

Put a small spot of glue on the stabilizer just where it meets at the very end of the tail. Now measure carefully both sides to make sure the stabilizer is centered. Make a pencil mark along the sides of the fusealge. Now apply glue to the stabilzer trying not to break that first glue joint. Hold square along the fuselage pressing down the fuselage into the stabilzer. This will ensure the stabilizer is square, centered and level.

Cut out some material along the rudder hinge line at a 30 degree angle both sides of the hinge and bend the rudder back and forth 1/2". Now run a very thin line of hot melt glue along the hinge line and then pull the hot tip back and forth to smooth out the glue so it is more of a thin film. Hold the rudder hinge open until the glue dries. Once dry, check that the rudder is free to move.

Prepare your rudder control horn from a popsicle stick. Pre drill a small hole halfway through the wood by hand, using the xacto in a twisting motion. Now poke a hole through with the control rod.

Install the control horn through a slot cut in the rudder and bed in with glue extending a 1/4" around to give it good strength.

Install rudder to the fuselage making sure it is aligned straight and square.

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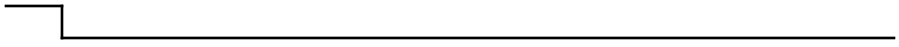

Instruction Part 4

Feed both of these control rods through the servo access through the holes in former CC and out the slots cut in the fuselage. They will overhang the rudder by several inches.

Install the servo arm onto the control rods using the outside holes. Install the control arm to the servo. Now switch on the radio and center the trim. Reinstall the servo arm so that it is centered. Bring the rods up to the rudder control horn and mark exactly where the bend needs to be to slide down into the control horn.

You will bend the wire down at a 90 degree angle and snip off at 3/4".
Check the rudder control with the radio. At neutral the rudder should be centered. Install the servo arm retaining screw.

Glue the wheel templates using wood glue to the foam board so they are decorated.
Cut out the wheels and drill with a 1/8" bit right in the center. install a coffee stirrer through both halves and spin on your lading gear unil they are true. Wiggle and adjust until they turn smooth and the glue the halves together around the perimeter with hot melt glue making sure they are still true. Run a little glue around the axle (stir stick) and check again.

Glue tail skid to underside of stabilizer at rear.

Balancing

Install the propeller. The plane should balance on the wing right where the angle is. Balance means that the stabilizer is level with the plane balanced at the CG (center of gravity) This will ensure a smooth glide. If the plane is at all tail heavy, it will stall and nose dive.

The plane should balance side to side down the centerline. Add a small weight to a wingtip if necessary. A small bit of solder or penny glued under a wingtip is good.

Down and side thrust
The motor turns counterclockwise and this will cause the plane to torque clockwise.
To counter this with power on you will shim the upper screw with one or two small washers. You want 2 degrees right thrust and 2 degrees down thrust. If under power the plane climbs too steeply add more down thrust a degree at a time.

Test Gliding

Take the plane out on a calm day and hand launch at shoulder height, level and with a smooth push and release. It should glide out 25-30 feet, fly level and hit with its wheels first. Take note of any tendency to go left or right. Trim with the radio until you see a level straight flight.

Happy Fling!