

Mig 15

Mark pivot for stabilizer. Cut rudders away from fin, and bevel sand the hinge joint. Put a tape hinge between layers and glue together. Then make hole for elevator bearing. Sand all edges to streamline shape.

Roll paper tube with white glue around bamboo skewer. Paper strip is magazine paper 3/8" x 3"

Glue in

7/16" maximum travel

Canopy Profile

Insert in nose of Mig 15

F1B

Cut back rear fuselage after fuselage is complete

Mark centerline on foam with light pencil indentations as reference points

Mark canopy location with light pencil indents

wing position

0 degrees incidence

wing tab doubler shape to contour inside fuselage

F1A

F1

F2

F3

F4

Mig wing mounts midway on fuselage vs Sabre's lower mount

1-1/2" at tips

6 degree dihedral angle

Engine wrap

cut out for engine wiring after curled and dry

wing tab doubler

wing tab doubler shape to contour inside fuselage

Pod

Fuselage Joiner

wing doubler

position wing doubler

104 sqin

Mig 15

wing doubler

position wing doubler

104 sqin

Mig 15

Cut stabilizer - it will straddle vertical fin closely - but will still move up and down

Mig 15

2.5" Bamboo skewer glued flush into foam

Mig 15

Old Guy RC Jet Instructions

Tape plans together. Make sure to tape in the middles of large pieces to hold pattern together. Trim edges to bold line and tape to foamboard at a few spots. Cut half deep through pattern with sharp Xacto. As you do, remove the pattern to verify its been cut all around. Save patterns to locate holes, slots and alignments after parts have been formed. Once all half deep cuts have been made, remove pattern and go over all cuts with a soft dull pencil to help you see the cuts. Now cut out all parts and set aside. Remove paper backing from all parts. Lightly sand all edges to debur - 120 grit paper works well. Take a minute to verify which way some parts line up and which direction they will curl. For instance the main fuselage piece looks close to square but will have a long side. Use the pattern to mark which way is lengthwise before curling.

Important
Use the pattern to mark where the wing slot doublers go on the inside of the curl. This is important so you locate the doublers exactly. The wings should be oriented such that you don't accidentally make the curl upside down on one.

Fuselage
Using a comfortable length of 1" rod (mine is 24" long) Place the part on a firm cushion and roll back and forth pushing down. The part will curl. Usually 2-3 passes is enough. Wings take 2 passes (don't overdo the curl on the airfoil. If you do you can press it out a bit on a flat surface. Test fit the fuselage sections and trim as necessary so both ends meet square. With your hands bring the edges together and form the circle until you are confident the part will come together. Now run a bead of hot melt glue along one edge and place the part on a flat surface and bring the edges together tight while the glue dries. A little will squeeze out on the seam. You can try and wipe it with a scrap of foamboard before the glue dries or trim it with a sharp knife later. Usually the seams are bottom on most builds.

Important
Install any nose detail before gluing section together. The Mig 15, F84 for instance get an intake splitter. This piece is hard to install later. **Fuselage assembly**
Test fit the sections and glue them together.

Wings

Glue the wing doubler to the bottom of each wing. Sand the LE and TE slightly to establish a nice entry into the airstream. A little bevel will help reduce drag. The wing slot doublers are important. They keep the wing from breaking the fuselage and are a positive location stop for the Jet Pod. The doublers should get a slight curl to fit inside the fuselage. Glue the doublers and quickly place in the fuselage. Be prepared with a wooden dowel or spoon handle to move this part to line up with the marks you made. Then press down with the dowel until the glue sets.

Wing slots

Take the main fuselage pattern and tape around the center fuselage where the wings will go. There may now be a gap because the foam was stretched. Make sure the pattern is straight and any gap is even at the seam. Tape it on so it doesn't move. Now, think about the angle of the wing to the radius of the round fuselage. If you were to cut straight into the fuselage the wings would not have the correct dihedral. Looking from the front hold your knife along the slot pattern. If your cut is somewhat close to the correct angle you will be fine. Cut all the way through both layers of fuselage and doubler. Test fit wing and trim as necessary. There are a lot of complex angles coming together at this join. If you cut the pattern closely the wing should conform well to the fuselage. Glue around each slot and press wing in and hold the wing so that the dihedral is close. For the jets this is about 3/4" higher at tip than fuselage. Do both wings, and then verify the wing incidence is 0 degrees or level with a straight line down the fuselage. A scrap of foam board makes a good calibration piece. When satisfied, run a thin bead of hot melt along bottom joint to fuselage. Make sure dihedral is even both sides. Even is more important than the exact amount. Now run a thin bead along top joint.

You can install wing tanks or other details to front section.

Canopy

You can get fancy and make a form for a vacuum formed canopy. You can use the pattern for a canopy made from a plastic water bottle. You can cut a profile 1 dimensional canopy from foam and glue to the centerline.

A profile canopy works while you are learning. Scale details should come after you get good at this. Weight savings at the front really don't help. Any weight you can save at the tail helps a ton with balancing and better flights.

Tail Section

It is best to prepare the vertical fin and rudder, stabilizer and elevator now before assembling the tail. For these small light jets, cut the control surface where shown. lightly sand the adjoining hinge points so the edges are rounded. This will prevent controls from binding. Cut any material away from adjacent part that may be too close. Tape with scotch clear tape. It is surprisingly strong and has a really good grip. Allow a 1/32" gap Tape top side only. Mig, FW 183 and Sabre get taped in the middle between fin doublers. Look at the plans and see how the stabilizer is setup. For the Mig FW 183 and Sabre the entire stabilizer pivots because the parts are so fragile. The stabilizer should be cut and parts put close to the fin to keep them square. Slop here is not good. For the F84, the elevator is traditionally setup with a coffee stirrer run through a hole in the fin linking the two sides. The coffee stirrer should be close to the center of the axis (right on the hinge point).

Test fit the parts and then make a mark on the rear fuselage where the fin will go. Verify that it is straight and centerlined. Cut the slot for the fin and recheck alignment 3x, then spot glue a few places and recheck, then run a small bead along edges of the join.

Install stabilizer taking note of how it sets up. Horizontal or somewhat angled...

Temporarily tape the front fuselage and rear together making sure vertical fin is vertical and horizontal stabilizer is horizontal in relation to wings.

Balance model where shown on the plans. Usual taping a variety of dimes, nickles, pennies with masking tape to the nose will balance.

Adjust the elevator to absolutely level with bottom of central fuselage. Make a light pen or pencil mark under the stabilizer/elevator on the fin for reference. You can lightly tape rudder and elevator to hold straight.

Test glide

With an ever so slightly downward push see if the model will glide out on the line. If it is tail heavy it will nose up and fall on its tail "bad" If it is nose heavy it will glide steeper and steeper and nose in. Adjust balance until model tracks on a shallow descending line.

Once you have the model gliding empty, make a definite mark on the bottom fuselage for future reference.

Controls

Cut two 1" section of coffee stirrer tubing. Poke the lightest music wire you can find through and put a Z bend on with needle nose pliers. From the rudder lay the wire along the fuselage and snip it 1" in front of the fuselage joint.

The rudder servo is on the left side of the ! System Jet Pod. Poke a hole through the rudder 1/4" in back of the hinge point. This hole will usually be as close to in line with servo as possible. However, the Mig and FW 183 require a smooth arc up the fin. Rudder control! Squirt a bit of hot melt glue in the hole you punched. Now work the control horn into the hole keeping in mind the way the wire pivots. Hold the control horn at a 90 degree angle to the control surface while glue dries. Put a dab of glue on the back side of the control horn. Cut a length of coffee stirrer leaving 1.5" of exposed wire both ends. This will act as a pushrod guide. Put a small dab of hot melt at a midpoint to temporarily hold the guide keeping the run as smooth and direct back to the servo control horn. Repeat for the elevator. setting up the control horn on the right under side.

install the Jet Pod

The jet pod will wiggle and slide in to the front fuselage until it hits the wing doublers. Trim a notch for the servo where they protrude through the fuselage. Once the notch is cut, slide the rear fuselage on. Cut a notch for the servos if needed.

With the control surfaces set straight make a Z bend in the control wire lined up with the servo control horn. Turn on radio and adjust the trims to neutral. Install the control wires on the servos and clip the control wires leaving 3/16"

Check balance again

With all RC gear installed check the balance. Usually a penny is needed if any at the nose to bring balance back on the mark.

Test Flight

A tiny amount of up trim (1 degree) is usually needed on the first maiden flight. That reference line you drew comes in handy now. Try 1/2 throttle over some tall grass and a moderate push and level launch. You should get a glide similar to your empty glide. The model should track out straight and on a shallow descent.

Now try 3/4 throttle and a harder push out at launch. The model should climb. Avoid using too much elevator until you can fly with rudder and throttle only.