

Mikoyan-Gurevich

MiG-15



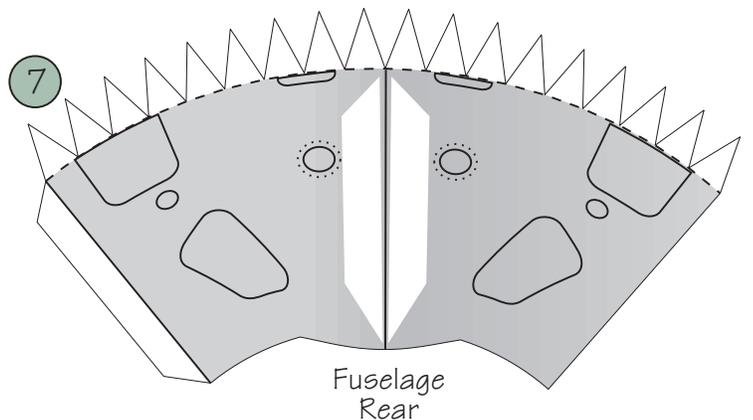
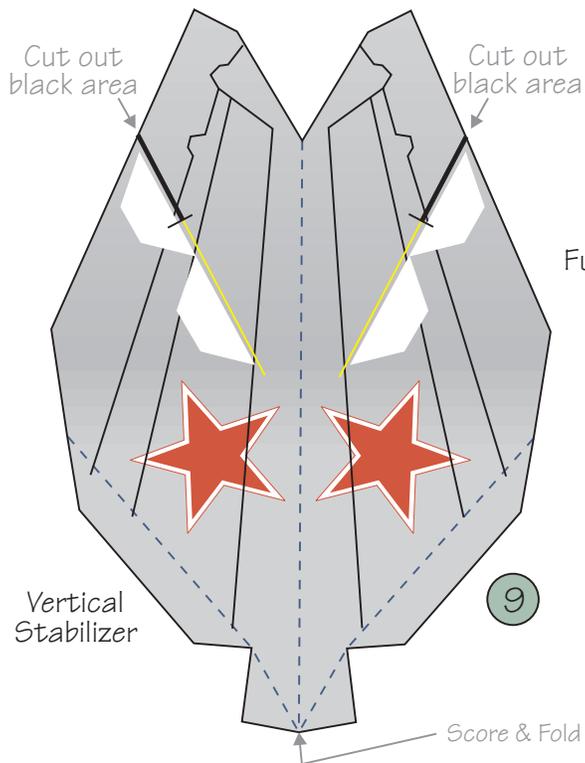
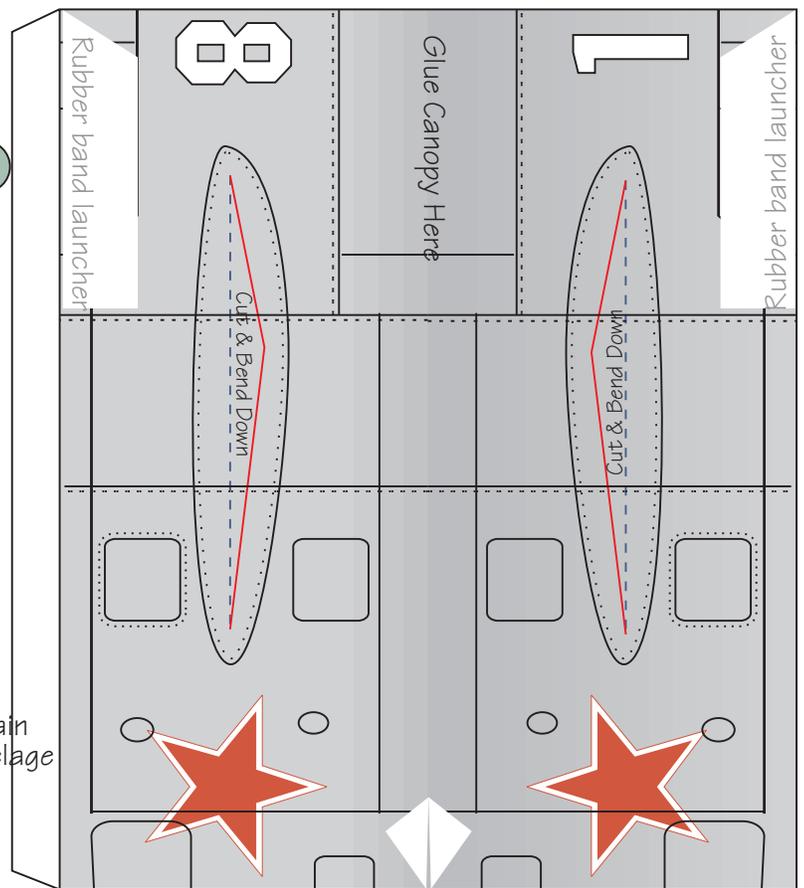
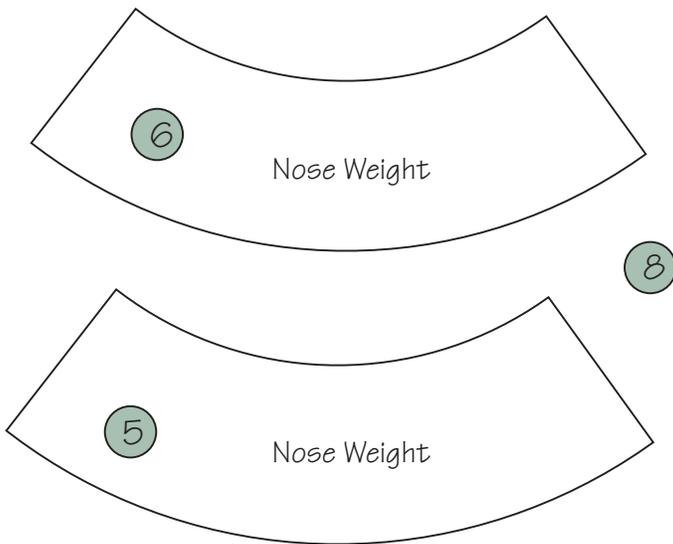
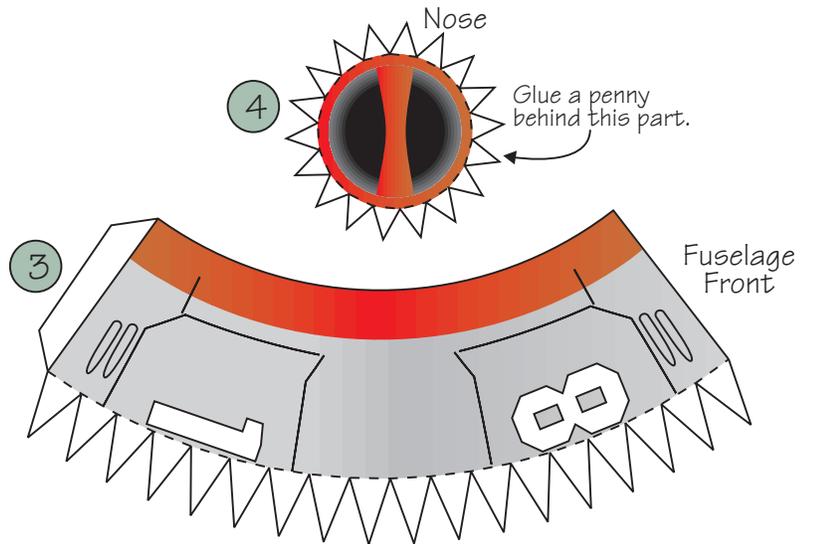
Flying Paper Airplane

- Launch with a rubber band for extra long flights!
- Aerodynamic design will produce exciting barrel rolls and loops.
- Simple constructions techniques get you flying with a sturdy plane that can take a beating.

Mikoyan-Gurevich MiG-15 Flying Paper Airplane Model

Print on 80 pound card stock paper.
Design Page 2 of 2

Always be careful of people around you when flying your plane.



Assembly Instructions

Tools: Scissors, White Glue, Ruler, "Dead" Pen (no ink left) & Hobby Knife.

1. Begin by printing the two design (pattern) pages on 65#-80# cover weight card stock. This is important because your plane will not fly if printed on too heavy or too light paper. You can usually find this type of paper at an office supply store. Check your printer's instructions for printing on heavy paper.

2. Using your "dead" pen & ruler, score all of the blue dashed lines on both design pages. Try to score as accurately as possible to ensure you plane goes together properly.

Tip: Cut out the parts as they are needed so you don't lose track of which part is which.

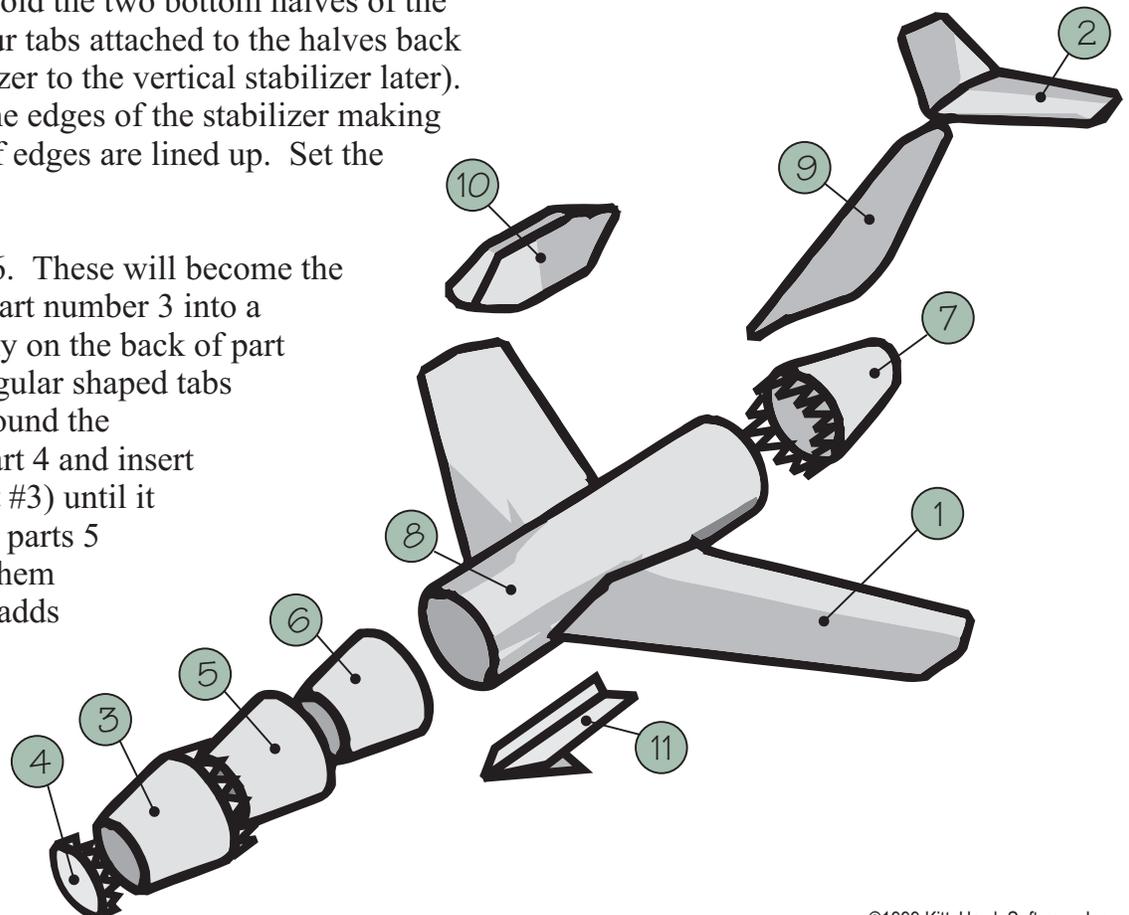
3. Cut out part number 1. This is the wing for your plane. Fold the part along all of the score lines. The tabs on the back and bottom of the wing are folded over flat. Run a line of glue along the tab and wingtip areas. Fold the top of the wing over and down on top of the glue areas. Carefully line the edges of the wing halves. You'll notice the top of the wing has a crease and is slightly raised above the bottom wing, this is to add strength to the wing. Repeat this on the other side of the wing.

Fold the tab on the center front of the wing down flat. Run a line of glue along the white areas of the two wing halves and tab and fold the center section over. Before the glue dries, make sure the bottom of the wing is flat and not twisted. This makes a big difference in the performance of your plane. Set the wing aside.

4. Cut out part number 2. This is the horizontal stabilizer. Don't forget to cut the black slit in the front of the stabilizer. Fold the two bottom halves of the stabilizer over. Fold the four tabs attached to the halves back (these will attach the stabilizer to the vertical stabilizer later). Run a line of glue around the edges of the stabilizer making sure the top and bottom half edges are lined up. Set the horizontal stabilizer aside.

5. Cut out parts number 3-6. These will become the nose of your plane. Form part number 3 into a cone and glue. Glue a penny on the back of part number 4 and fold the triangular shaped tabs down. Put a line of glue around the triangular shaped tabs on part 4 and insert it into the nose section (part #3) until it is flush with the front. Roll parts 5 then 6 into cones and glue them inside part number 3. This adds strength to the nose of your plane.

6. Cut out part number 7. This will be the rear end of the



fuselage. Form the part into a cone and glue.

7. Cut out part number 8. This will be the main section of the fuselage. Don't forget to cut the two red lines on each side for the wing. Form the part into a tube and glue.

8. Glue part 7 (fuselage rear) into the back of part number 8 (nearest the red stars). Make sure you line up the seams on the bottom of the two parts.

9. Glue the nose section on the front of the fuselage. Make sure you line up the seams on the bottom of the parts.

10. Cut out part number 9. Don't forget to cut out the black slits on the top of the part. This is the vertical stabilizer. Fold the four tabs up, then fold the part in half. Run a line of glue around the top and back edges. Do not put any glue along the tab edges as the part will need to open up slightly like an envelope.

11. Stick a pencil or pen up inside part 9 to spread it apart slightly. Glue part number 9 (vertical stabilizer) tabs to the top rear of the fuselage on the white areas. By spreading the stabilizer apart slightly, it is much sturdier and will stand up straight.

12. Glue the horizontal stabilizer (part 2) to the vertical stabilizer. The two parts will interlock with the slits cut earlier. The tabs are glued to the white areas on the vertical stabilizer.

13. Fold the two tabs on each side of the fuselage down and insert the wing. Line the wing up so it is centered in the fuselage. Put a little glue on each tab to hold the wing in place.

14. Cut out part number 10. This is the canopy. Form the part into a half circle and glue. Fold the two tabs on the sides up and glue the canopy into place on the top of the fuselage. The front of the canopy will be right at the seam between the main fuselage and nose section.

15. Cut out part number 11. This is the attachment point for your rubber band launcher. Fold in half along the center crease and the two side panels back. Put some glue on the triangular shaped center section and glue together. Put some glue on the two tabs and glue to the bottom of the fuselage in the area indicated.

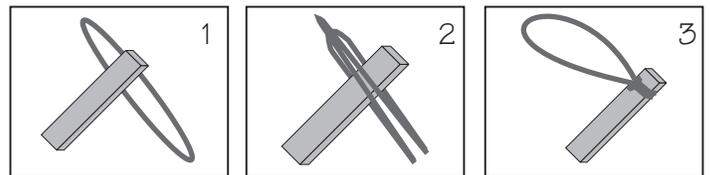
Congratulation! Your plane is now done.

Making a rubber band launcher.

1. Lay the rubber band flat on the table with a stick or pencil on top.

2. Take one end of the rubber band over the stick and feed it through the loop on the other end of the rubber band.

3. Pull the rubber band tight so that it does not slip on the stick.



To make a longer launcher, follow the same steps on the end of the first rubber band with a second and third rubber band so you have a launcher with longer rubber band.

Launching Your Plane

Once you have made a few hand tosses and have the plane flying straight and level, you are ready for a rubber band launch.

Safety is always first. When launching your plane with the rubber band, the plane leaves your hands at a high rate of speed. It is so fast that someone near you will not be able to get out of the way in time to not get hit. So make sure all people near you are far enough away and aware that you are preparing to launch your plane.

Never use the rubber band launcher indoors or near a busy street. Many of these planes can fly up to 50 feet high and over 60 yards when launched with the rubber band.

When launching, you first need to determine which direction the wind is blowing. To determine the direction of the wind, look around for a flag or at the trees. If you are still unsure, pick up a pinch of dirt or grass and toss it into the air. Watch what direction the dust or grass float down.

Your plane is a glider so the wind will greatly determine where it is going to go. Make sure that the wind will not take your plane and sail it over in a direction that is not desirable, like your neighbor's roof or in your swimming pool.

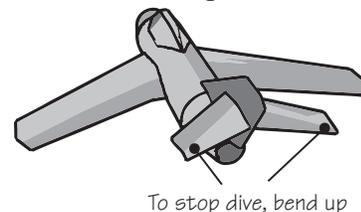
You will have the best flights when you launch perpendicular to the wind. Depending upon the wind speed you may also want to try and launch directly into the wind. If you are near a building or trees, the wind may be swirling. Try to get away from the swirling wind.

Now, with your rubber band launcher in one hand, hook the rubber band on the launching point on the plane. Hold on to the rubber band where it goes around the launching point on the plane (pinch it between your thumb and index finger). Pull back and extend your hand holding the stick forward. Make sure the plane and stick are clear of your body. Aim up at approximately 45 degrees and let go!

Flying Tips and Adjustments

Are you having troubles getting your plane to fly? First, look at the plane with the nose towards you. Make sure the fuselage (body of the plane), wings and tail are not warped and the wing and fuselage are perpendicular (at right angles) to each other. If the pieces are made well, then pay close attention to what the plane is doing and you should be able to correct it. There are four basic problems your plane can have: Dive, Stall, Fade and Spin. Here are some tips for correcting them:

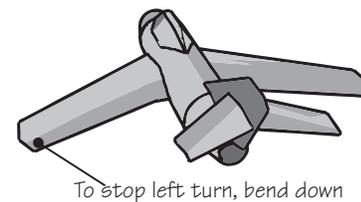
Dive: If your plane consistently dives toward the ground when you throw it, try to bend the elevators, the back edges of the horizontal stabilizer, up just a little until it stops.



Stall: If your plane consistently wants to climb upward then runs out of airspeed and tumbles to the ground, then try to bend the elevators, the back edges of the horizontal stabilizer, down just a little until it stops.



Turn and roll: If your plane constantly turns to the right or left when you throw it, then bend the aileron, the rear edge of the wing, to the side it is fading to down slightly. So if your plane keeps fading off to the right, then bend the rear most edge of the right wing, down slightly.



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