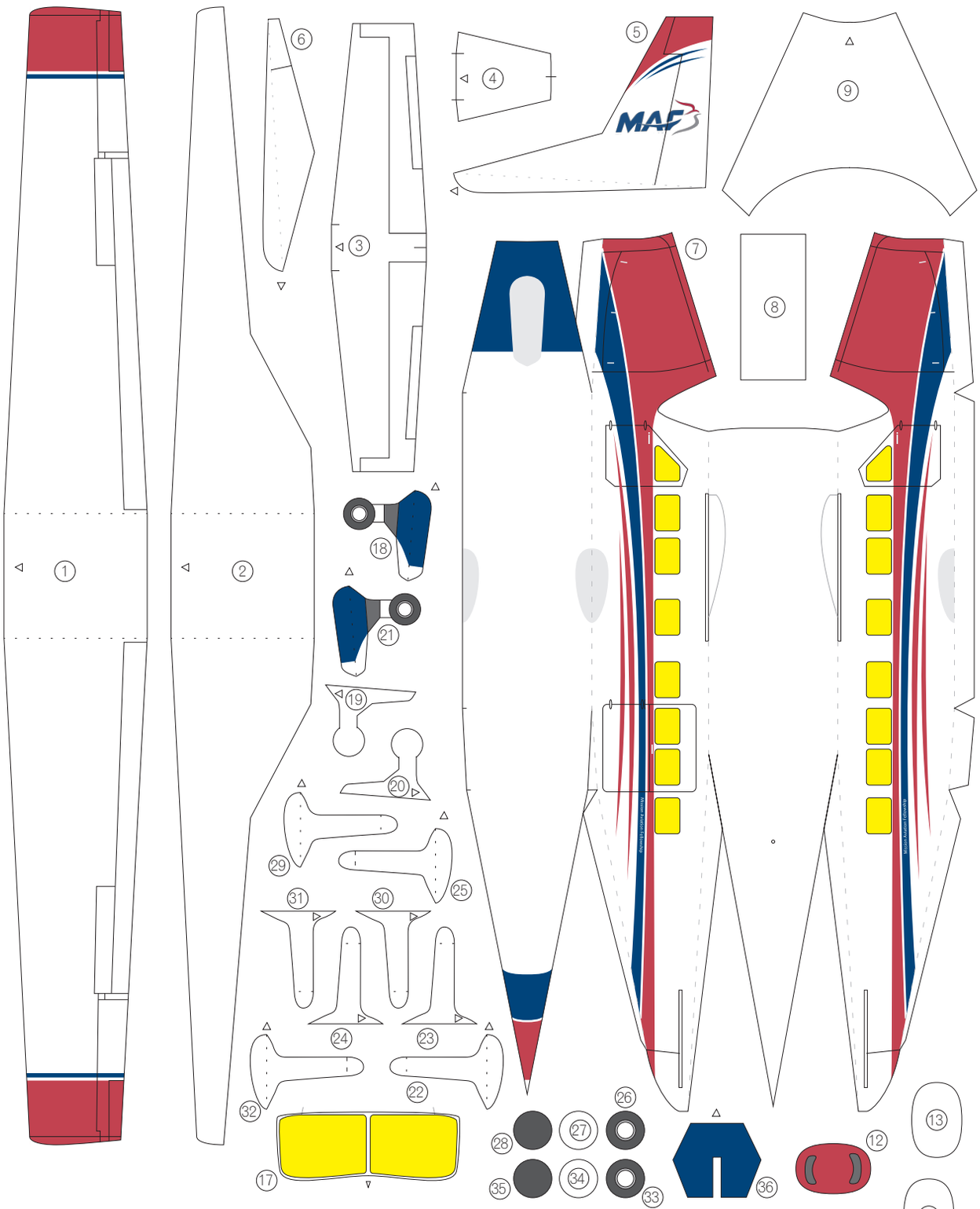
Cessna 208 **Caravan**



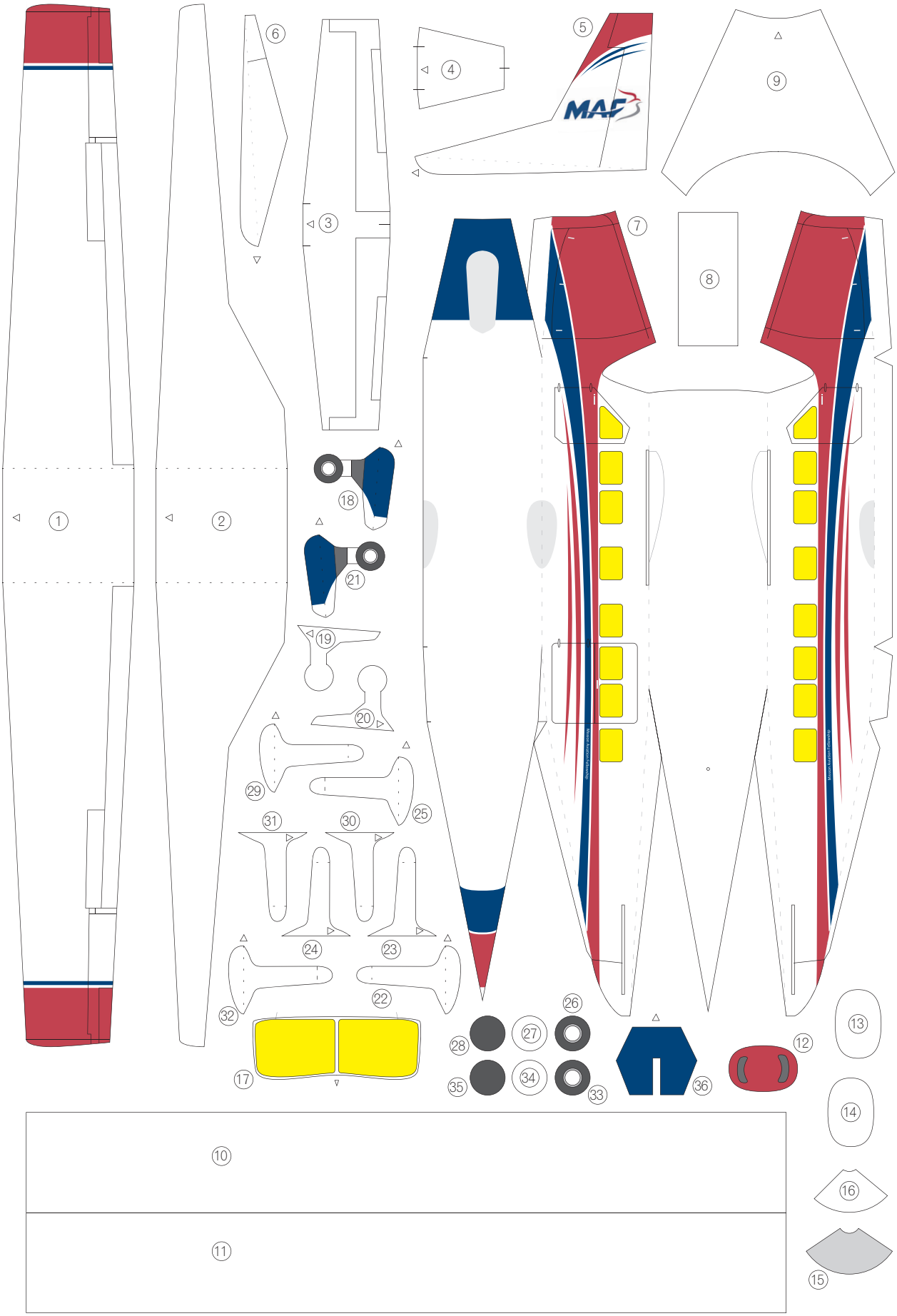
- - - - - - - - - - - mountain fold

. . . . . valley fold

Kami Papercraft Workshop
Andrew Dewar
kamipapercraftworkshop@gmail.com

MAF

Cessna 208 **Caravan**



- - - - - - - - - - - - mountain fold

. . . . . valley fold

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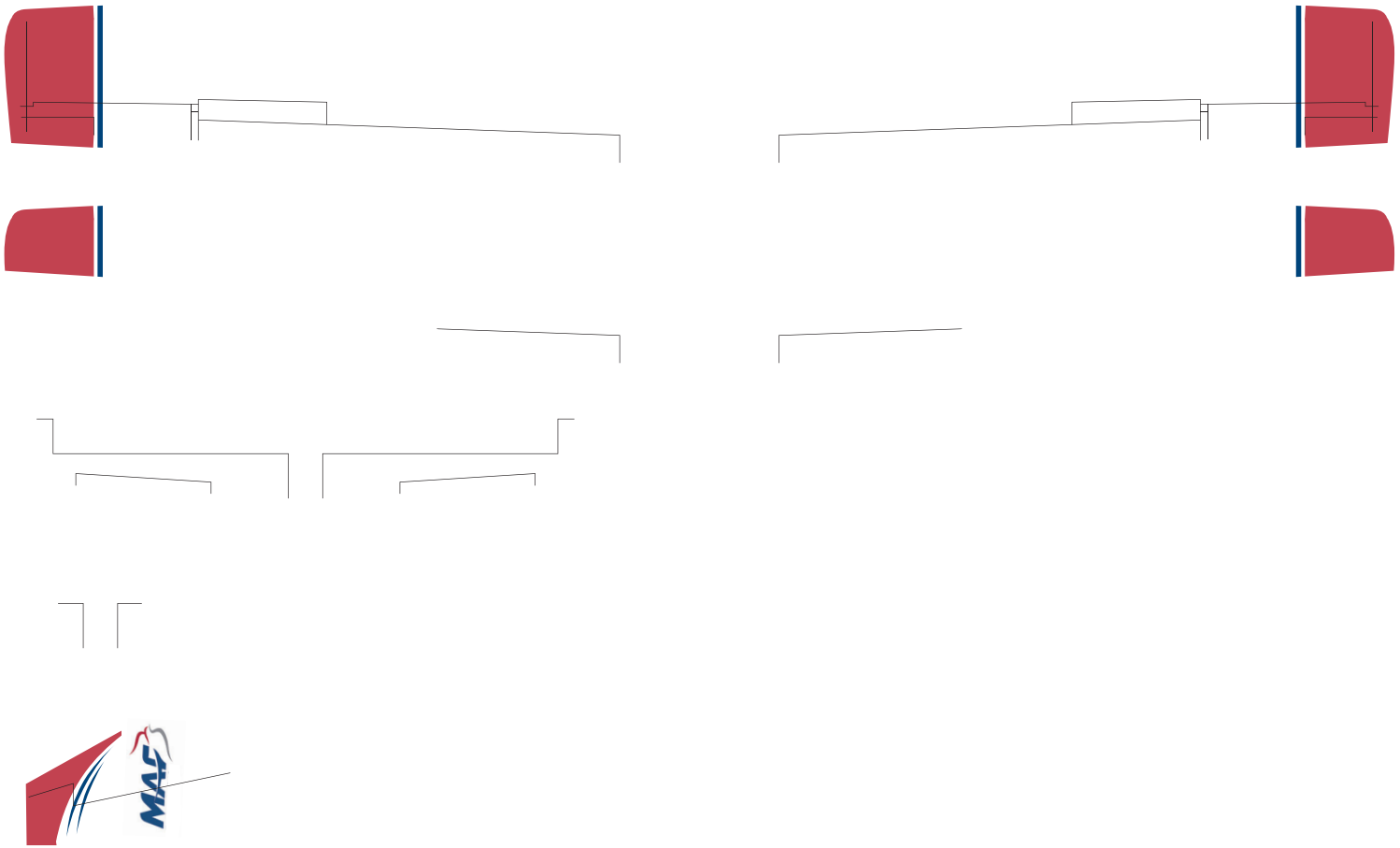
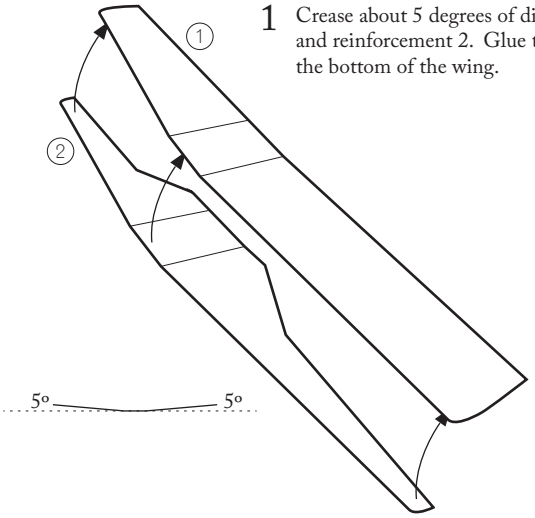
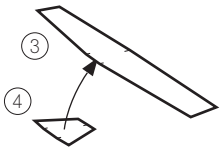


Cessna 208 Caravan

We recommend making the airplanes on 170gsm matte card stock

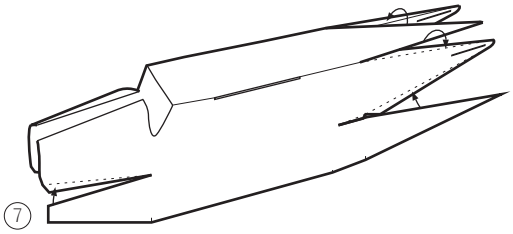


1 Crease about 5 degrees of dihedral into wing 1 and reinforcement 2. Glue the reinforcement to the bottom of the wing.

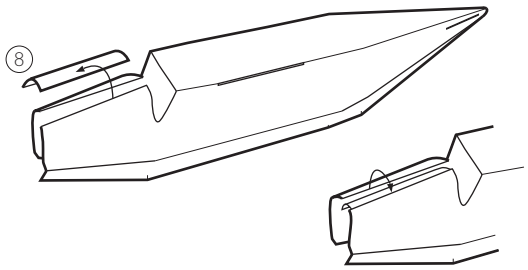


2 Glue reinforcement 4 to the bottom of the stabilizer 3. Make sure the marks line up!

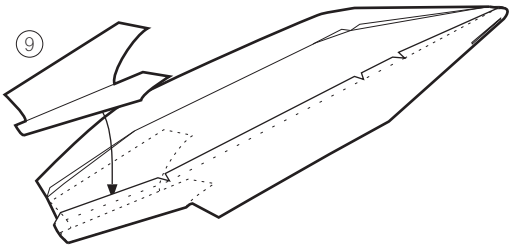
3 Fold rudder parts 5 and 6, and glue them together as shown.



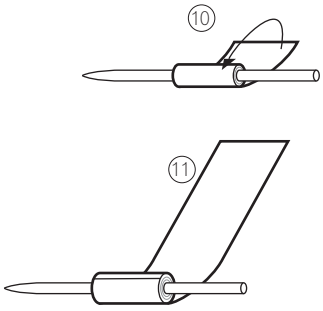
4 Cut the slits in the fuselage 7 for the wing and stabilizer. Carefully fold the sides, bottom, and glue tabs as shown. Glue the top of the tail and the left side of the fuselage.



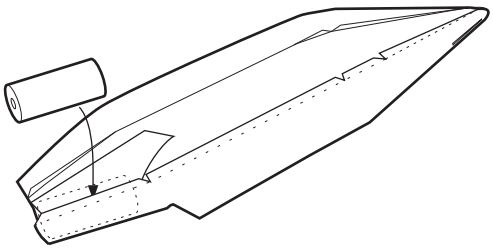
5 Carefully shape the top of the nose and glue tab part 8. Glue one half of part 8 inside the nose, and when it is secure, glue the other half with the edges of the nose just meeting. (Step 14 shows how it will look.)



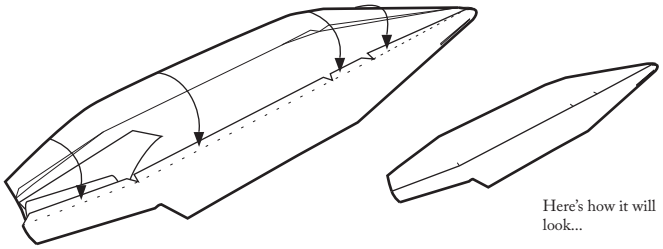
6 Bend nose reinforcement 9 into shape as shown, and glue it inside the nose. The dotted lines show the position.



7 Use a toothpick to roll ballast part 10. Fasten the end with a tiny bit of glue. Then attach part 11 and roll and glue it the same way. Remove the toothpick.

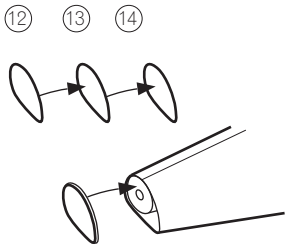


8 Glue the ballast roll inside the nose. The dotted lines show the position.

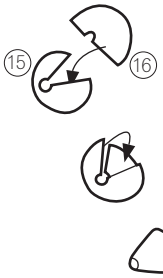


Here's how it will look...

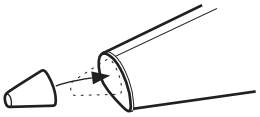
9 Glue the remaining side of the fuselage bottom to the glue tabs as shown. Line up the marks with the corners carefully, so the fuselage doesn't end up twisted!



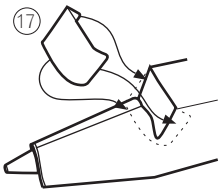
10 Glue together nose front parts 12 to 14, and then glue them to the front edge of the nose.



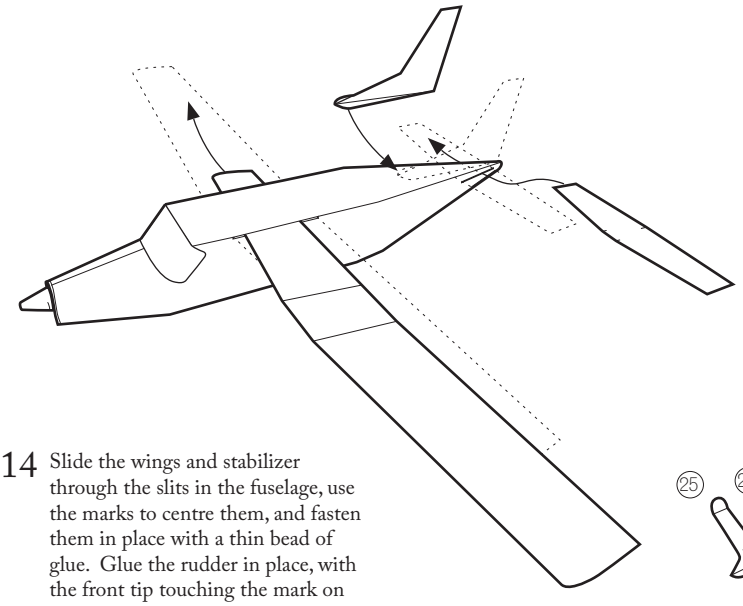
11 Carefully shape spinner parts 15 and 16. Glue half of part 16 inside one side of part 15, and then glue the remaining half to make a cone.



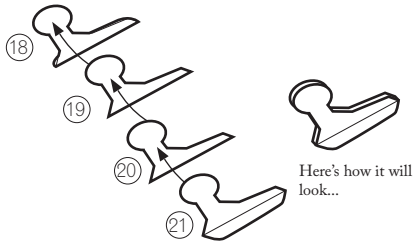
12 Glue the spinner to the nose front as shown, with the seam at the bottom.



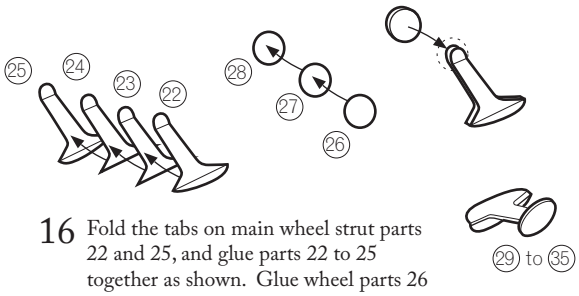
13 Carefully bend the windscreen 17 into shape, and glue the edges around the opening in the fuselage as shown.



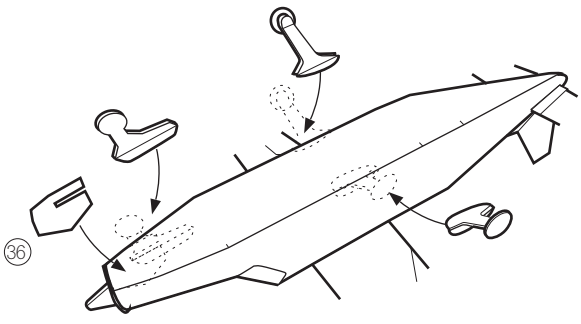
14 Slide the wings and stabilizer through the slits in the fuselage, use the marks to centre them, and fasten them in place with a thin bead of glue. Glue the rudder in place, with the front tip touching the mark on the top of the fuselage.



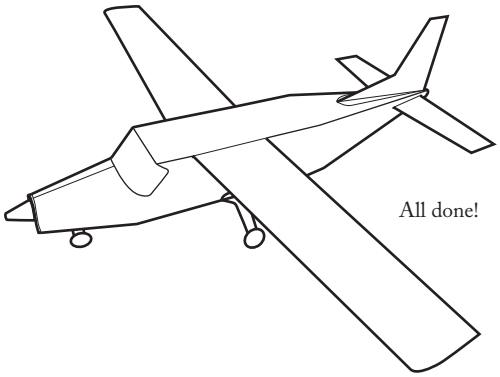
15 Fold the tabs on nosewheel parts 18 and 21, and glue parts 18 to 21 together as shown.



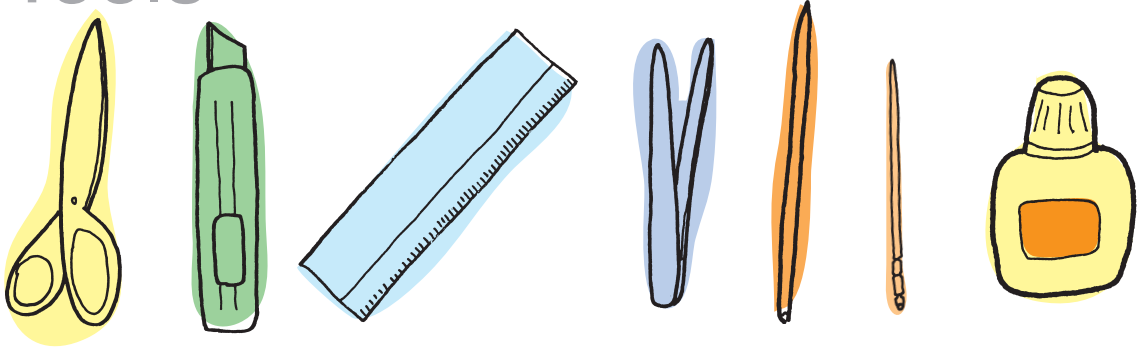
16 Fold the tabs on main wheel strut parts 22 and 25, and glue parts 22 to 25 together as shown. Glue wheel parts 26 to 28 together, and then glue 28 to the strut. Repeat with parts 29 to 35 to create the other main wheel.



17 Glue each of the landing gear elements to the fuselage at the marks. The main wheels should be angled enough that the plane is level when sitting on the wheels. Glue nose reinforcement 36 around the nose gear at the position shown.



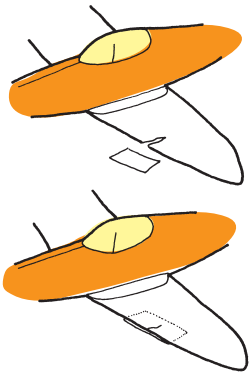
Tools



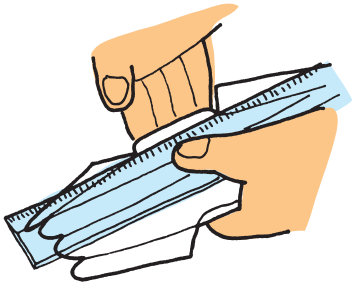
scissors | craft knife | ruler | tweezers | bamboo skewer | toothpick | glue (gel or white glue)

Cutting

Cut the parts out carefully with scissors you are comfortable with. The ideal is to cut right down the middle of the line. It is much easier if you separate the parts roughly before doing the final cutting. Don't worry if you accidentally cut the wrong thing. In most cases you can patch up the cut from the inside with a small tab of paper. Butt the two cut edges together and glue the patch behind it, or between two parts. If the patch is small, it won't affect the balance of the airplane. This is also the best way to fix cuts and tears caused by rough landings.



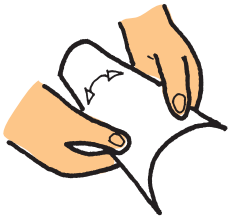
Folding



Use a ruler to make crisp and accurate folds. This is especially important when folding narrow parts.

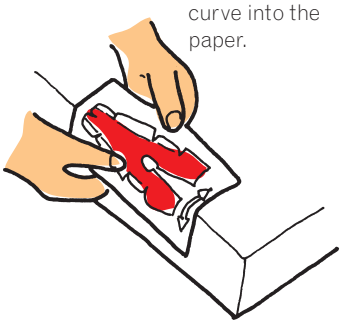
These are the types of symbols used in the kit pages.

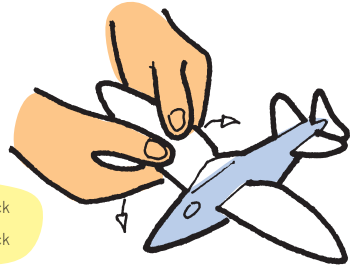
- mountain fold
- valley fold
- arrow pointing front



Bend curved parts into shape carefully, a bit at a time, with your fingers. Too sharp a bend will crease the paper.

Use the edge of a table to "train" a curve into the paper.



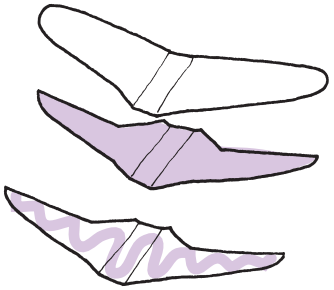


straight wing — front — back

swept wing — front — back

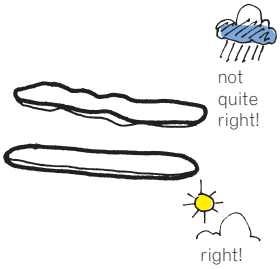
The camber, or curve, in the wing is what creates the lift that holds the plane up. Add camber by gradually bending the wing as shown. In the case of swept wings, just bend the leading edge down slightly.

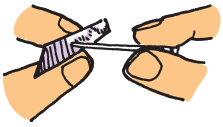
Gluing



Spread glue evenly over the whole of surfaces to be glued together. Just a bead of glue will not be strong enough to hold the plane together in flight!

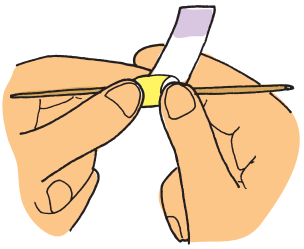
If you are using a water-based glue, like white glue, spread it as *thinly* as possible when gluing together wing parts, or the water in the glue will warp the finished wing.



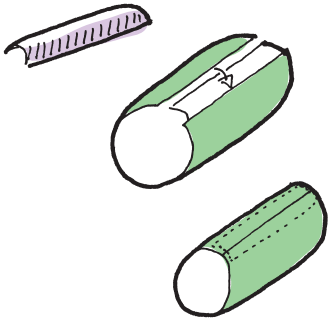


You can use a toothpick to spread glue *thinly* and *evenly* over the paper.

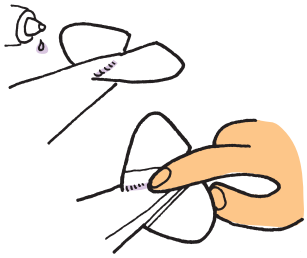
The finished plane will look much nicer if you wipe away excess glue. A scrap of paper works well.



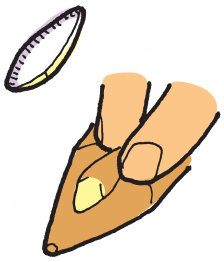
Ballast parts are rolled tightly around a toothpick. Glue only the last half inch of each long strip, and the first half inch of each strip after that. When the last strip is glued in place, pull out the toothpick and square up the end of the ballast roll.



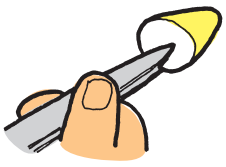
The top of the nose is joined by a separate glue flap, which is glued in place half at a time. After the first half is firmly set, spread glue on the remaining portion, and close the nose with the edges butting together.



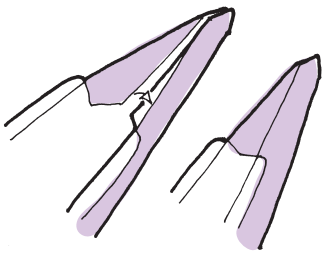
Make glue fillets by applying a drop or narrow bead of glue to the seam and spreading it with your finger or a toothpick.



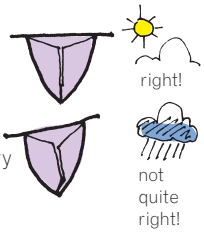
For the windscreens, put a thin bead of glue around the inside edge, and hold them in place gently until the glue grips.



For smallish parts, use tweezers to press the glue flaps firmly in place.

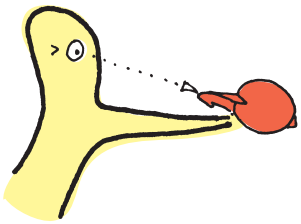


When gluing together the fuselage, align the sides carefully to avoid twisting. Check by looking at the part from behind. If it is twisted, carefully pry apart the seam and reglue it.

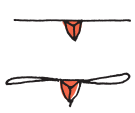


Test Flying

The upturn of the wings is called dihedral. It helps keep the plane level, because when the plane banks the lift created by the more level wing increases, and straightens the whole plane until the lift is equal again.



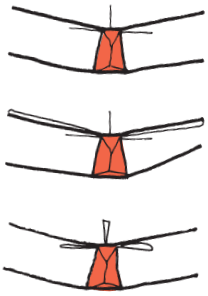
Your plane won't fly well if the wings are warped or twisted. You can check the alignment by holding the model at arm's length and examining it from the front and back.



Just right!

Not quite right.

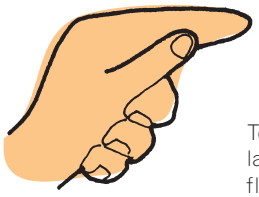
Fix warps by gently twisting the wings and tail with your fingers.

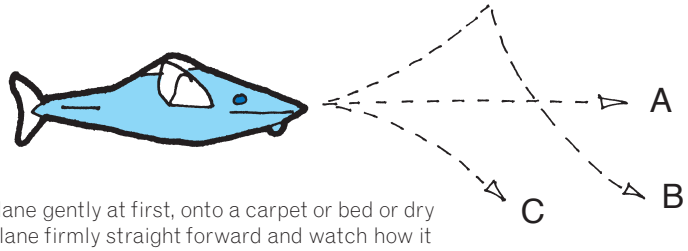


Just right!

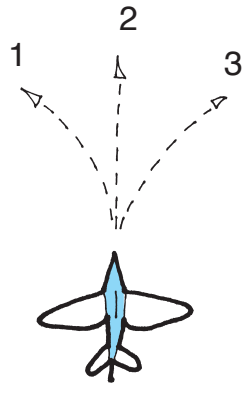
Warped wings!

Warped tail!



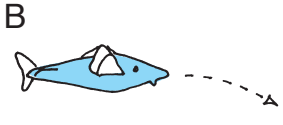


Test fly the airplane gently at first, onto a carpet or bed or dry lawn. Toss the plane firmly straight forward and watch how it flies. If it stalls or dives, adjust it and test fly again, until it glides gently like pattern A.



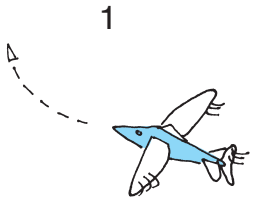
If the plane turns to one side or the other, adjust it until it flies straight as in pattern 2.

Just right!



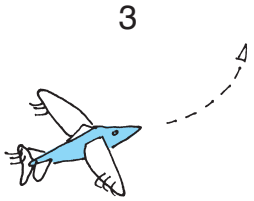
Fix a stall by bending the rear of the stabilizer down slightly.

Fix a dive by bending the rear of the stabilizer up slightly.



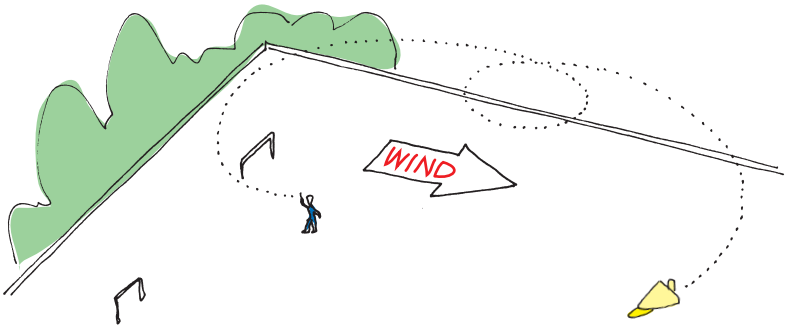
Fix a left turn by slightly bending the rear edge of the left wing down, the rear edge of the right wing up, and the rudder right.

Just right!



Fix a right turn by slightly bending the rear edge of the left wing up, the rear edge of the right wing down, and the rudder left.

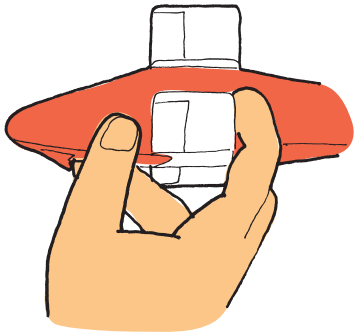
Outdoor Flying



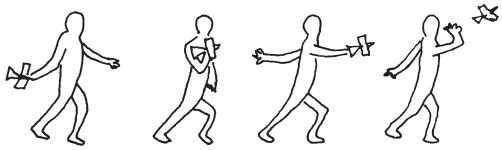
The plane can be flown outdoors, and if thrown or catapulted properly, it will stay in the air quite a long time. Choose a large grassy field for flying, and always launch from the upwind end of it. For the safety of the plane, you should avoid wet grass and strong or gusty winds.

Fly Safely

Paper airplanes fly much faster than one expects, and they can be dangerous to eyes. Always fly away from trees, power lines and roads, and never point the plane towards people or pets. I strongly recommend wearing hats and eye protection too.

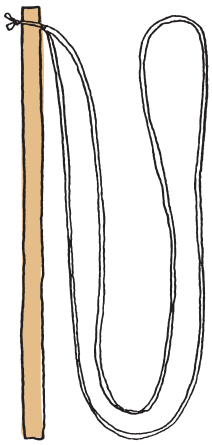


Hold the plane like this, steadying the fuselage between the thumb and ring fingers, and with the index and middle fingers behind the wings. Tilt the plane away from you and slightly upwards.

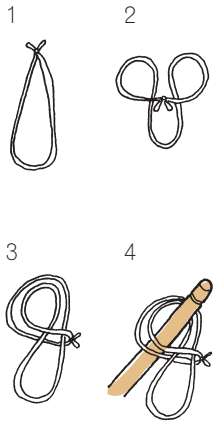


Throw the plane the way you would a ball, complete with follow through, but without snapping or spinning it. Throw the plane lightly several times to get the hang of it before putting all your strength into it.

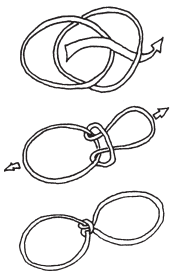
Using a Catapult



Here's the catapult. . .

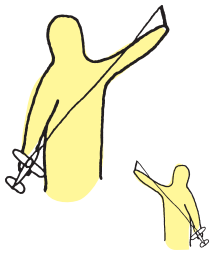


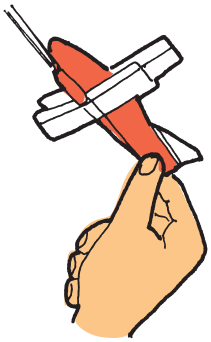
. . .and here's how to make it, using model airplane rubber and a stick or pencil.



You can also string together two or three rubber bands instead of the rubber thread.

The front landing gear can be used as a hook for catapult launching. Launch the plane 45 degrees or more from the horizontal, and at between 45 and 90 degrees of bank. If the plane loops straight into the ground, change the hands you hold the plane and catapult with.





Hold the plane gently by the very back of the fuselage.