Martin B-26/JM-1

Marauder

The Martin Marauder goes back to a request of the U.S. Army Air Corps for a fast medium bomber, made in 1939, still before world war two broke out in Europe. The B-26 was meant to replace the obsolete B-10 and B-18. The design of Glenn L. Martin Company was ordered straight off the drawing board and not even a prototype flew before.

The first aircraft to be produced became the quasi-prototype and made it's maiden flight on November 25th, 1940. The first B-26's were delivered to operational squadrons in 1941, after having been tested at the the airbase Patterson Field, today the site of the U.S. Air Force museum.

The Marauder showed a much better performance than its contemporary, the B-25 Mitchell, but it's wings were comparably small and it had the heaviest weight to wing surface ratio until then. This led to a very long take-off distance amd required fast landing speeds, because the wing would have a stall in too slow speeds, leading to a crash. Another problem were chronic breakdowns of the front landing gear strut, due to bad weight distribution. This again was a result of the new turbo turrets not being installed yet.

The worst problem were those of the propellers and of of sudden loss of power on the engines, especially during take-off. These problems led to numerous crashes, which made the B-26 a feared type among flight students. It led to various nicknames for the B-26 such as "Martin Murderer", "Widowmaker", "Flying coffin", but also "Flying Prostitute", because the wings were so small and the plane had "no visible means of support". Since the flight trainign was held in Tampa Bay, Florida, it also led to the phrase "A Marauder a day in Tampa Bay"

Modifications on the airframe and improved flight training let the B-26 pilots to be better able to control the plane and less accidents occured. But it was still considered impossible to fly a B-26 with only one engine. This was however disproved by a number of experienced pilots, most notably Jimmy Doolittle.

Even though B-26's were deployed mostly in Europe, their first mission took place in the south pacific, conducting an attack on a japanese base on Rabaul from an australian base. Four Marauders were also used as torpedo-bombers during the battle of Midway.

Even though the missions in the pacific had been successful, the Marauders were withdrwan there and replaced by the older B-25 Mitchells, becuase they were more suited for the island-war thanks to their long range and short take-off distance. The first mission of a B-26 in Europe was flown on May 14th 1943, and the second one became a disaster, as ten aircraft were lost from flak-fire and midair collisions. The tactics were modified after that, and low-level attacks were given up in favour of level-bombing: The new average height for the bomb drops was 10000–15000ft (3048–4573m) This supposedly helped to

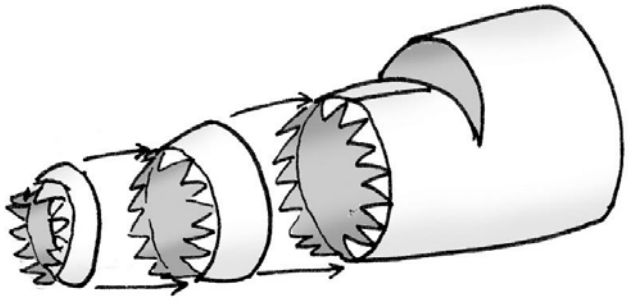
let the Marauder have the lowest loss rate of all allied planes later on. The Marauder first proved its usefulness during the invasion of normandy, providing tactical support to the advancing troops. Later on, the Marauder became the main target of the first german jetfighter, the Me-262.

The Royal Air Force also had a lot of problems with the Marauder at the beginning, using it in North africa and the middle east. The Marauder was replacing Bristol Blenheims, which required a huge adaption by the crews, because while the Blenheim was easy to fly, but highly vulnerable, the Marauder could sustain a lot of damage, but was unforgiving with flying mistakes. The Royal Air Force used the Marauder quite succesfully as a torpedo bomber and Naval Reconnaisance, as well as a interceptor for german transport aircraft crossing the mediterranean.

The U.S. Navy used a number of Marauders under the designation JM-1. These machines were stripped of all unrequired equipment, such as turret, machine guns, bomb racks and navigational equipment to make them as light as possible for their new role as target tugs. The targets were pulled by a steel line and fired upon with paintball munition by Navy fighters.

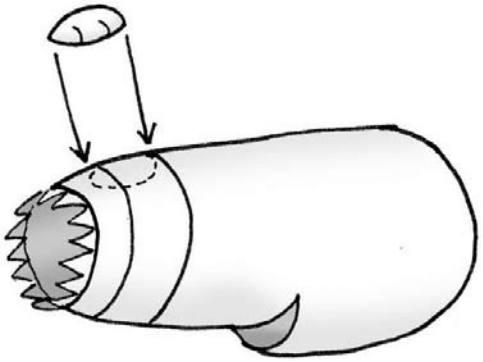
Altogether, over 110000 missions have been flown with the B-26. When the war ended in Europe after the german capitulation, most B-26's were decomissioned and scrapped. The designation of B-26 was passed on to the Douglas A-26 Invader, which was used until long after the Korea war. Only few of the 5266 Marauders build survive until today, and there is only one airworthy Marauder on earth. The most famous Marauder is undoubtedlty the "Flak bait", which turned out the single aircraft with the most missions flown in world war two. Its forward fuselage section is displayed in the National Air and Space museum in Washington, DC today.

1. Glue together the three nose parts

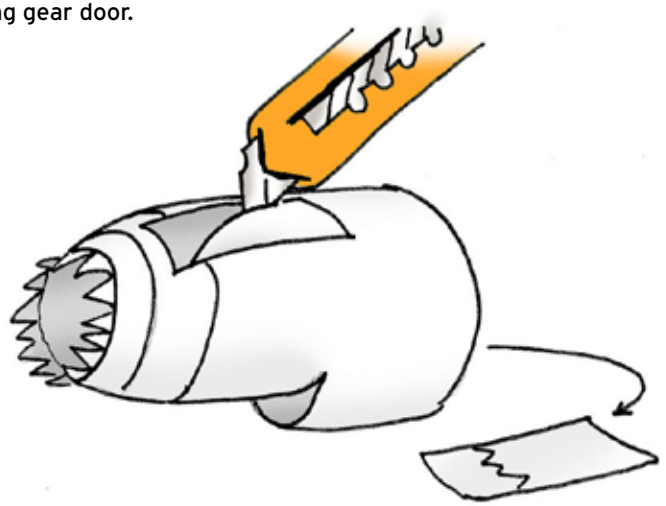


If you want to build the landing gear down, jump to 3.

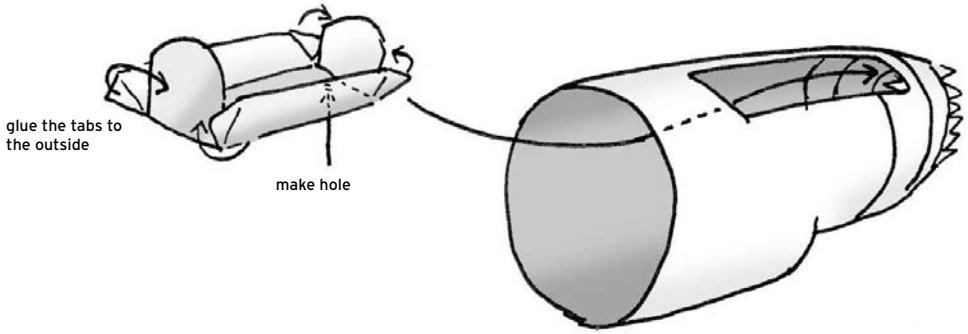
2. Attach the bulge in the front of the forward landing gear doors
Then jump to 6

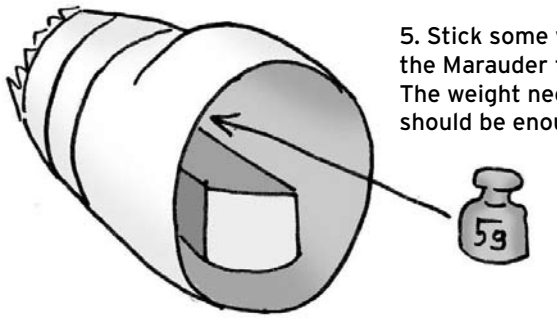


3. Cut out the landing gear door.



4. Build the wheel well and glue it into the nose.
Make a hole for the landing gear



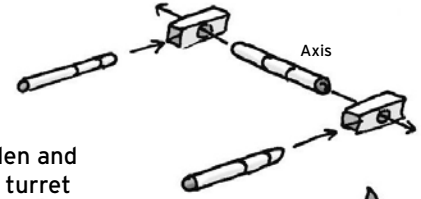


5. Stick some weight on the top of the wheel well to avoid the Marauder from falling on its tail.
The weight needed is about 5g. A small coin or a iron screw should be enough. But if it's not, you can add more later.

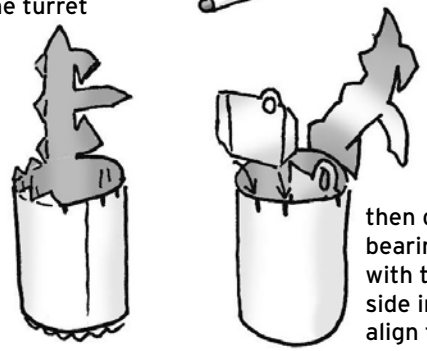
If you're building the JM-1, jump to 26

Detailed turret.
For the simplified turret, jump to 17

6. Build the guns and stick them on the axis to the marked position.



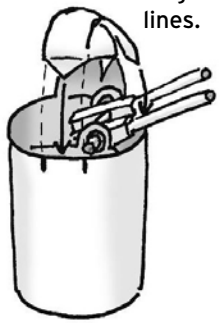
7. Rounden and glue the turret body,



then glue the bearings into it, with the printed side inward and align them to the short lines on the turret body.

8. Bend the bearings outward to stick the guns' axis between them. Don't glue.

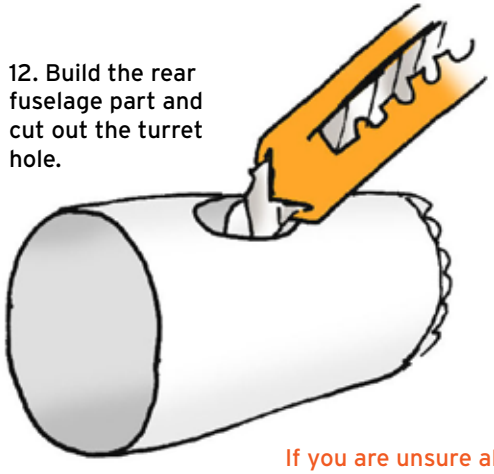
9. Rounden and glue the canopy. Align it by the small lines.



10. Glue the middle window between the guns.

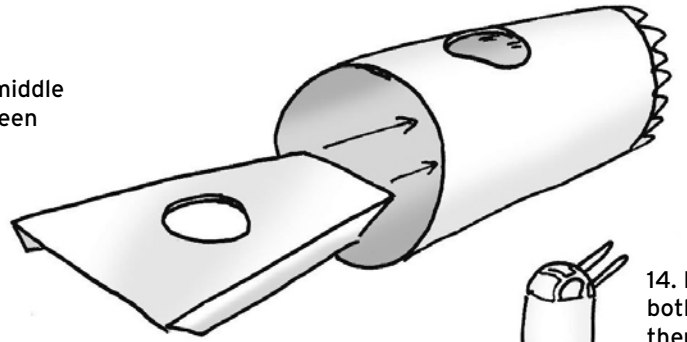
11. Rounden and glue the canopy rear on the back.

12. Build the rear fuselage part and cut out the turret hole.

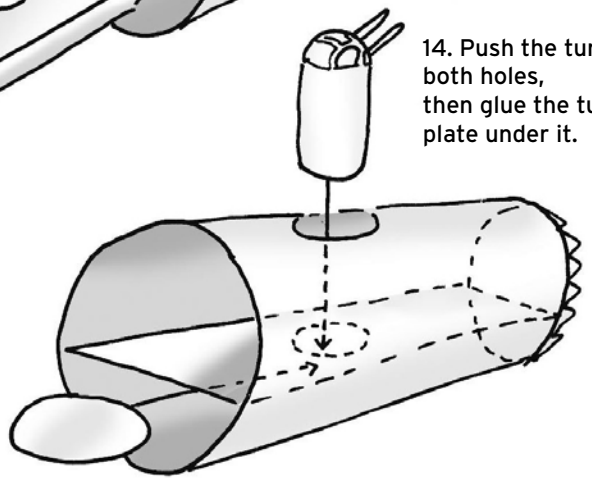


If you are unsure about this part, have a look at step 16 first (next page)

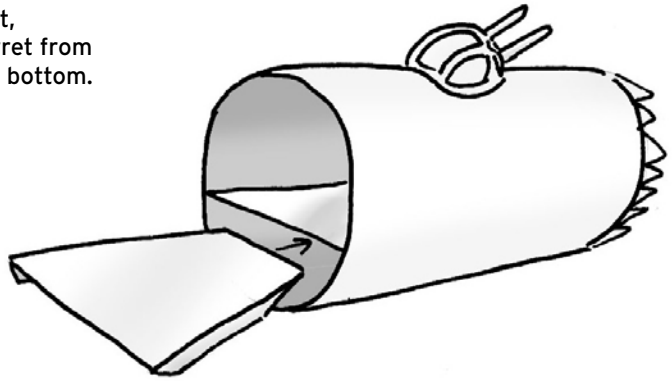
13. Glue the stabilizer plate into the fuselage part. Make sure to align it in the vertical center at both ends.



14. Push the turret through both holes, then glue the turret end plate under it.

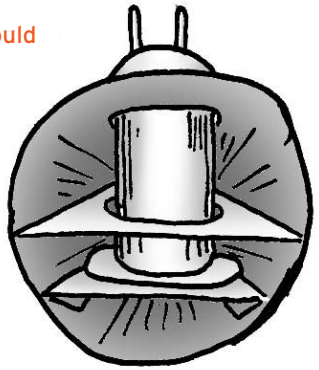


15. Glue the second stabilizer under the turret, to avoid the turret from dropping to the bottom.



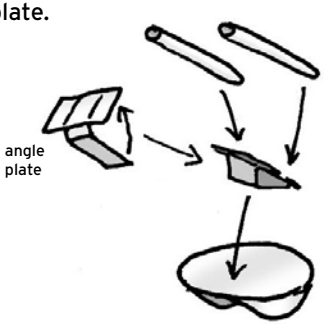
16. When finished, it should look like this:

Jump to 20



Simplified turret.

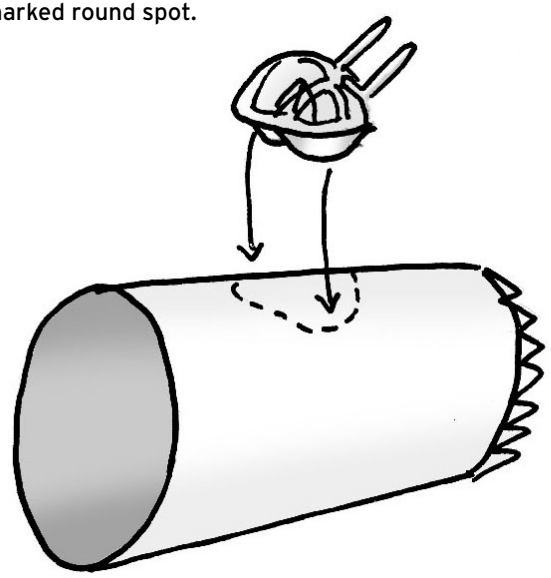
17. Glue the guns on the angle plate and the angle plate on the base plate.



When finished, it should look like this:

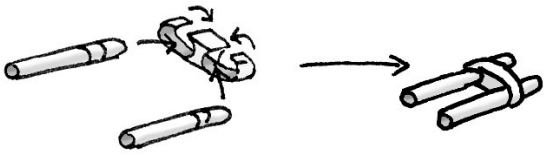
18. Build the canopy and glue it on the base plate.

19. Glue the turret on the marked round spot.

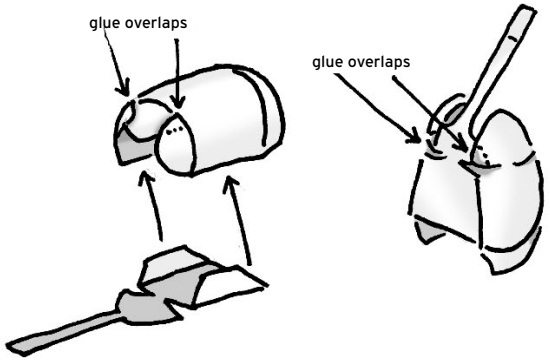


Rear turret.

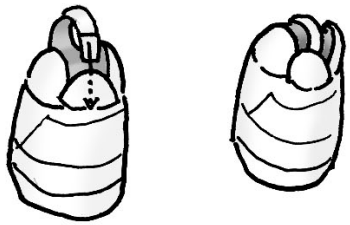
20. Wrap the middle part around the guns.



21. Rounden the rear flaps, and glue together the overlaps.
Glue the middle part on the edges.

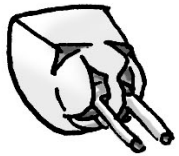


22. Rounden the middle lug and glue it
to the bottom, aligned on the small line

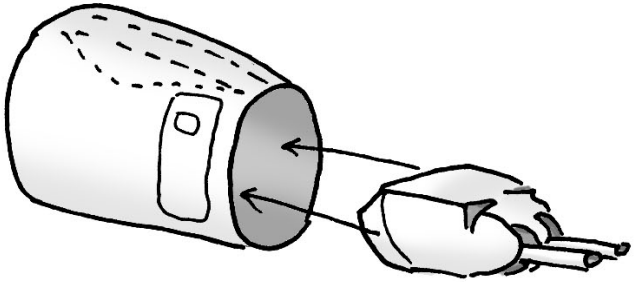


23. Glue the guns into the holes.

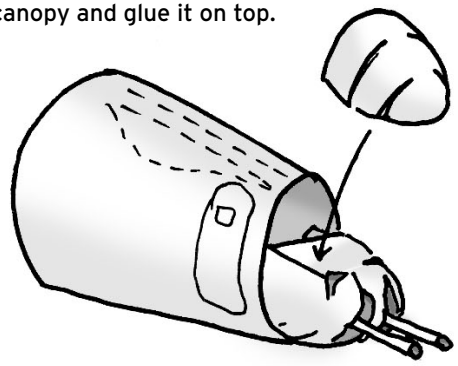
When finished,
it should look
like this:



24. Build the rear fuselage part, then attach the
rear turret to the back fuselage part.

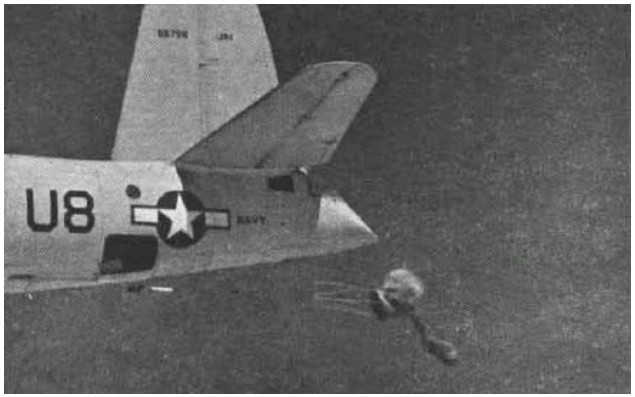


25. Build the canopy and glue it on top.



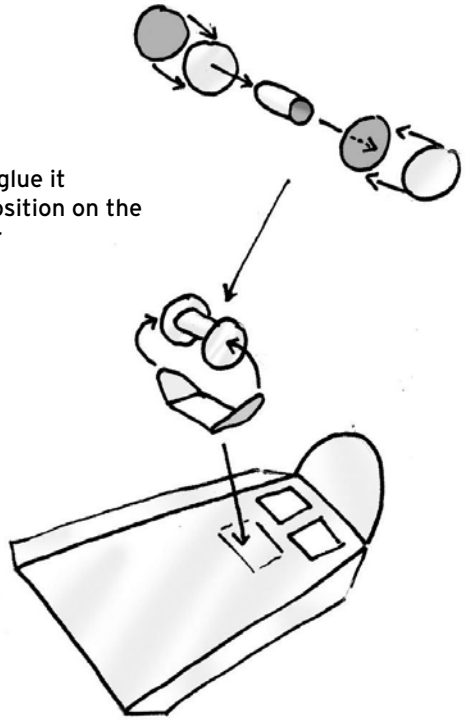
Jump to 33

JM-1 Target tug

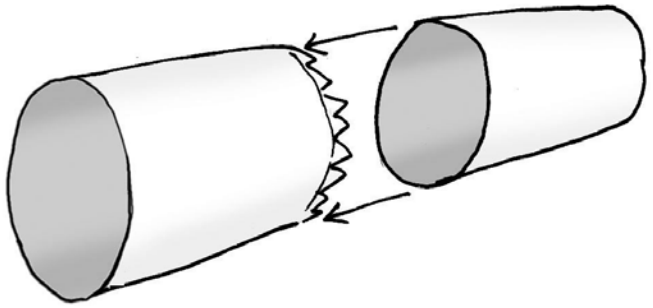


Apart from featuring no turrets or machine guns, the Navy-Version JM-1 featured a modified rear cabin for the observator and a winch in the rear fuselage. It was typically flown with open rear side doors, through which the wire to pull the targets was let out. Both the modified rear cabin and the open side doors can be seen in this picture.

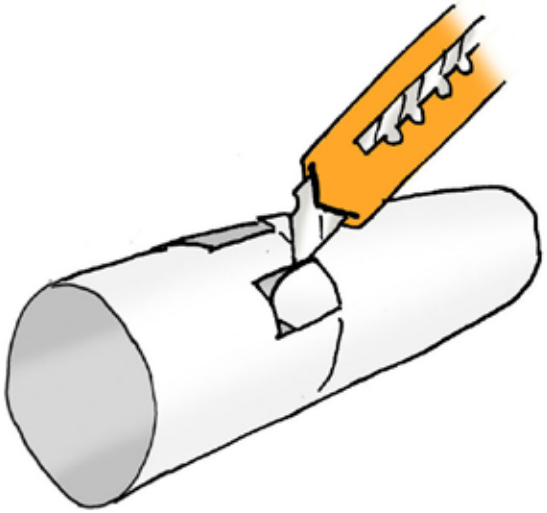
26. Build the winch and glue it to the square-marked position on the rear fuselage inner layer



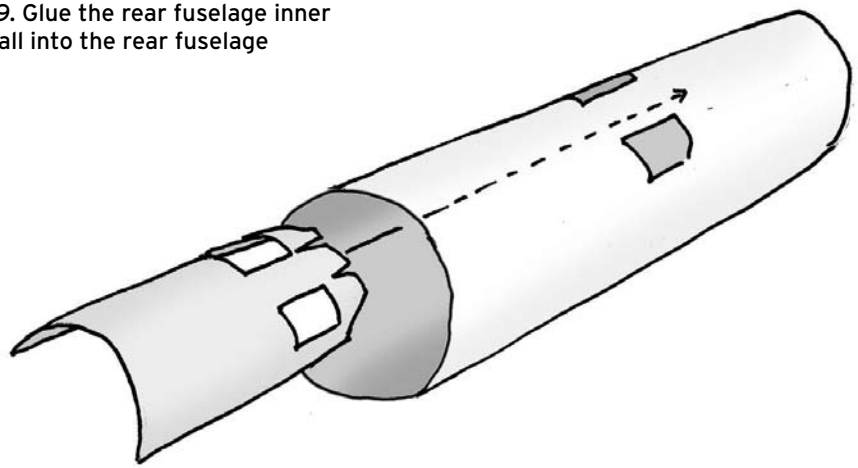
27. Glue together the two rear fuselage parts.



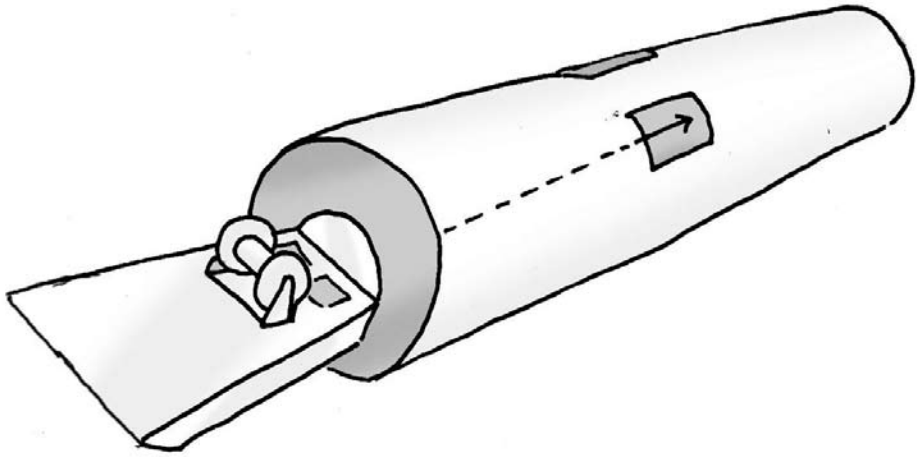
28. Cut out the two side doors



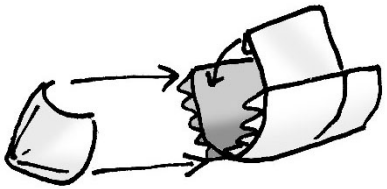
29. Glue the rear fuselage inner wall into the rear fuselage

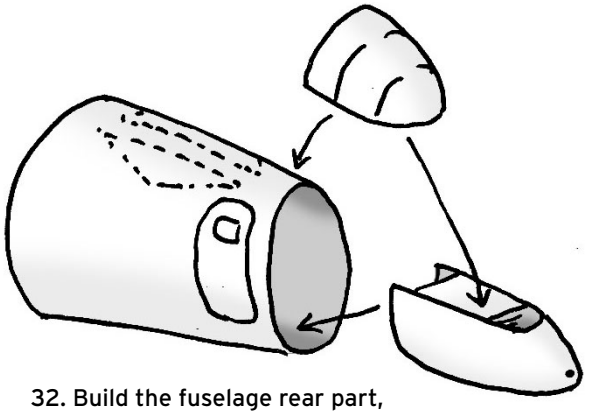


30. Glue the Winch and level assembly into the fuselage



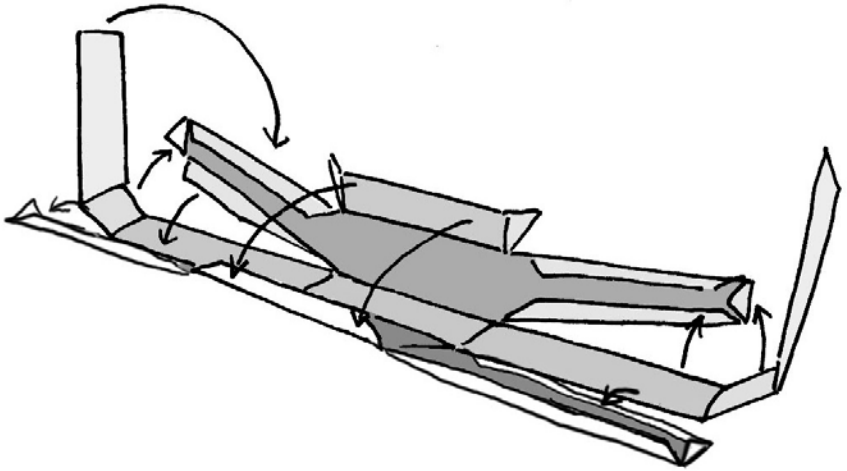
31. Make a cone from the fuselage end, then glue it on the cabin.



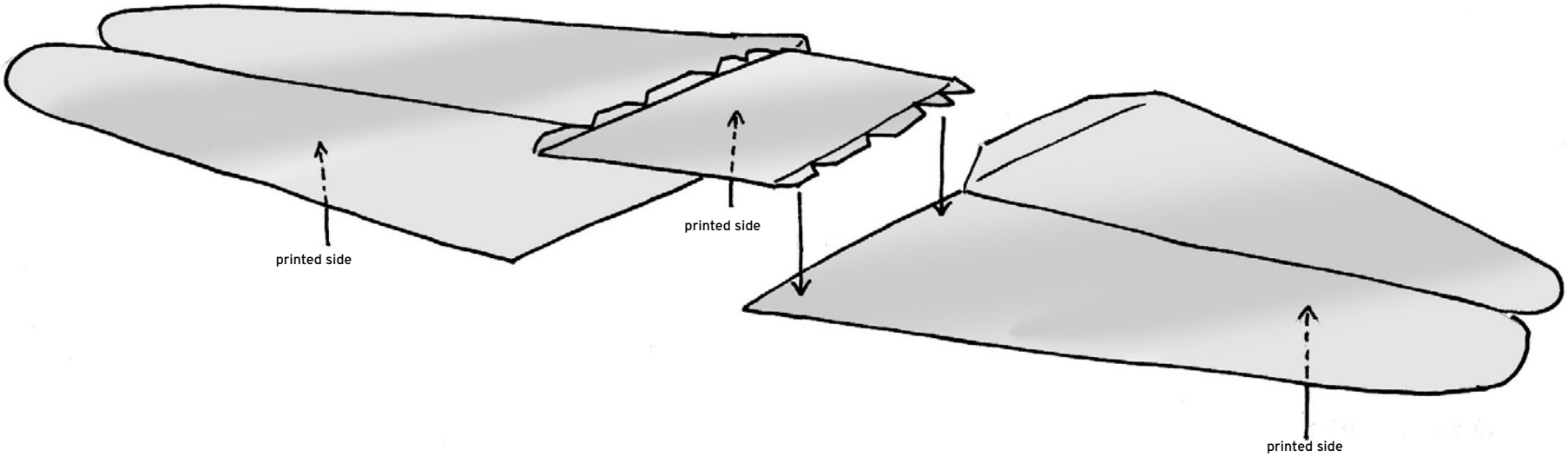


32. Build the fuselage rear part, then attach the rear cabin and glue the canopy on the top.

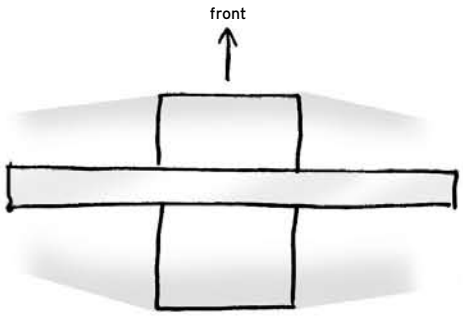
33. Glue together the wing stabilizer

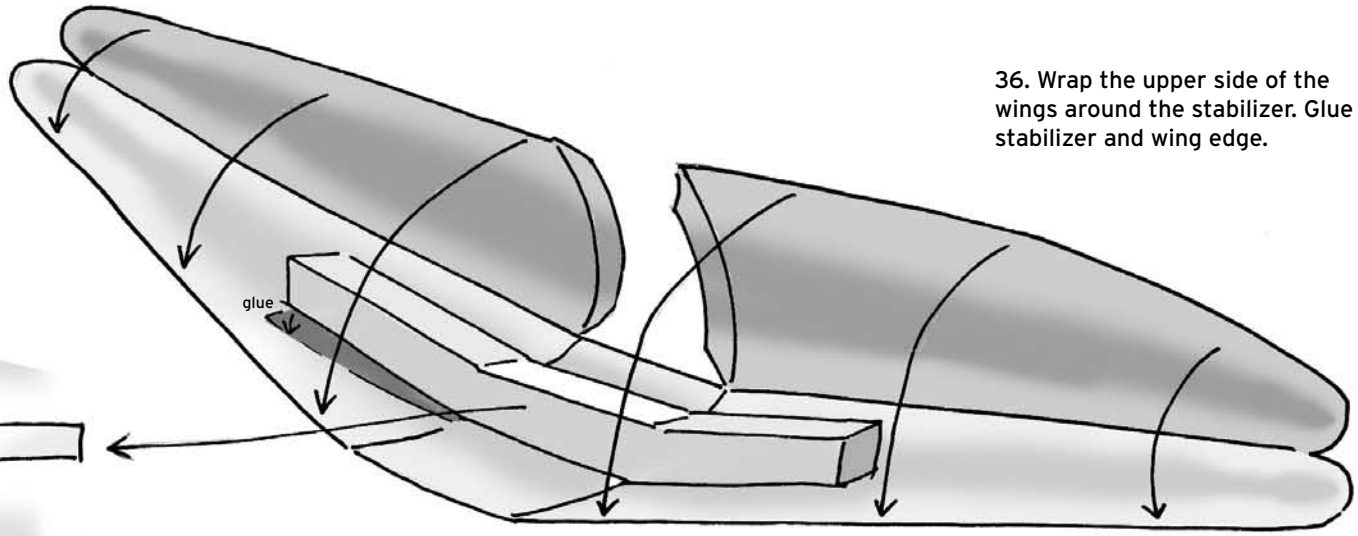


34. Glue the lower middle part between the two wings. Then rounden the wings.



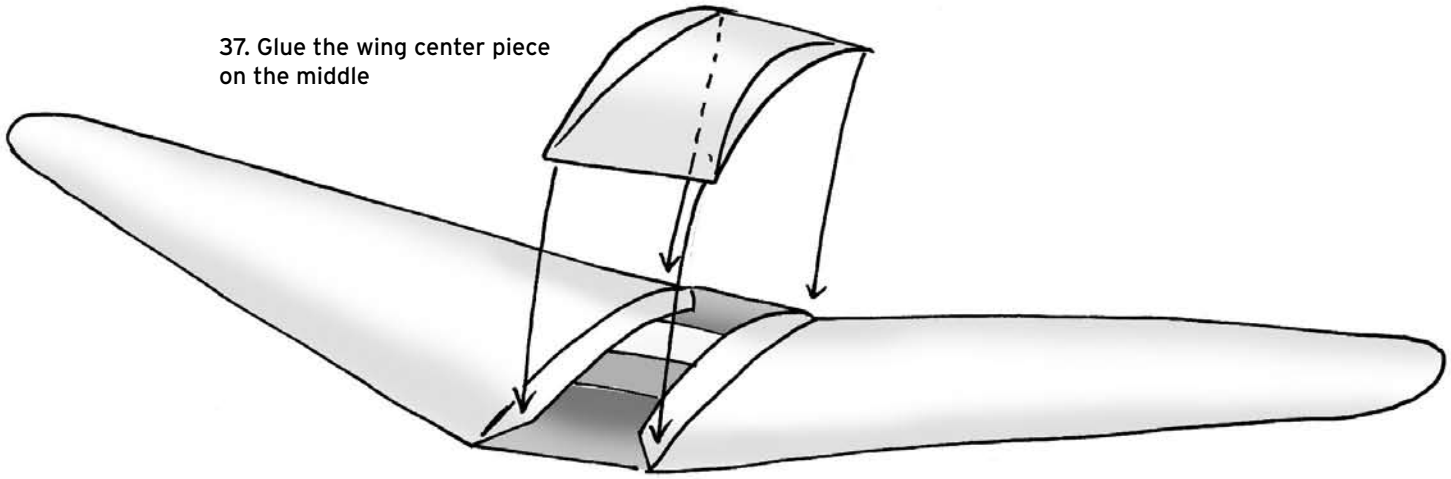
35. Glue the stabilizer on the wing, in a position at the third sixth from the front. Use the wing section as cut out from the fuselage and the picture below as reference.



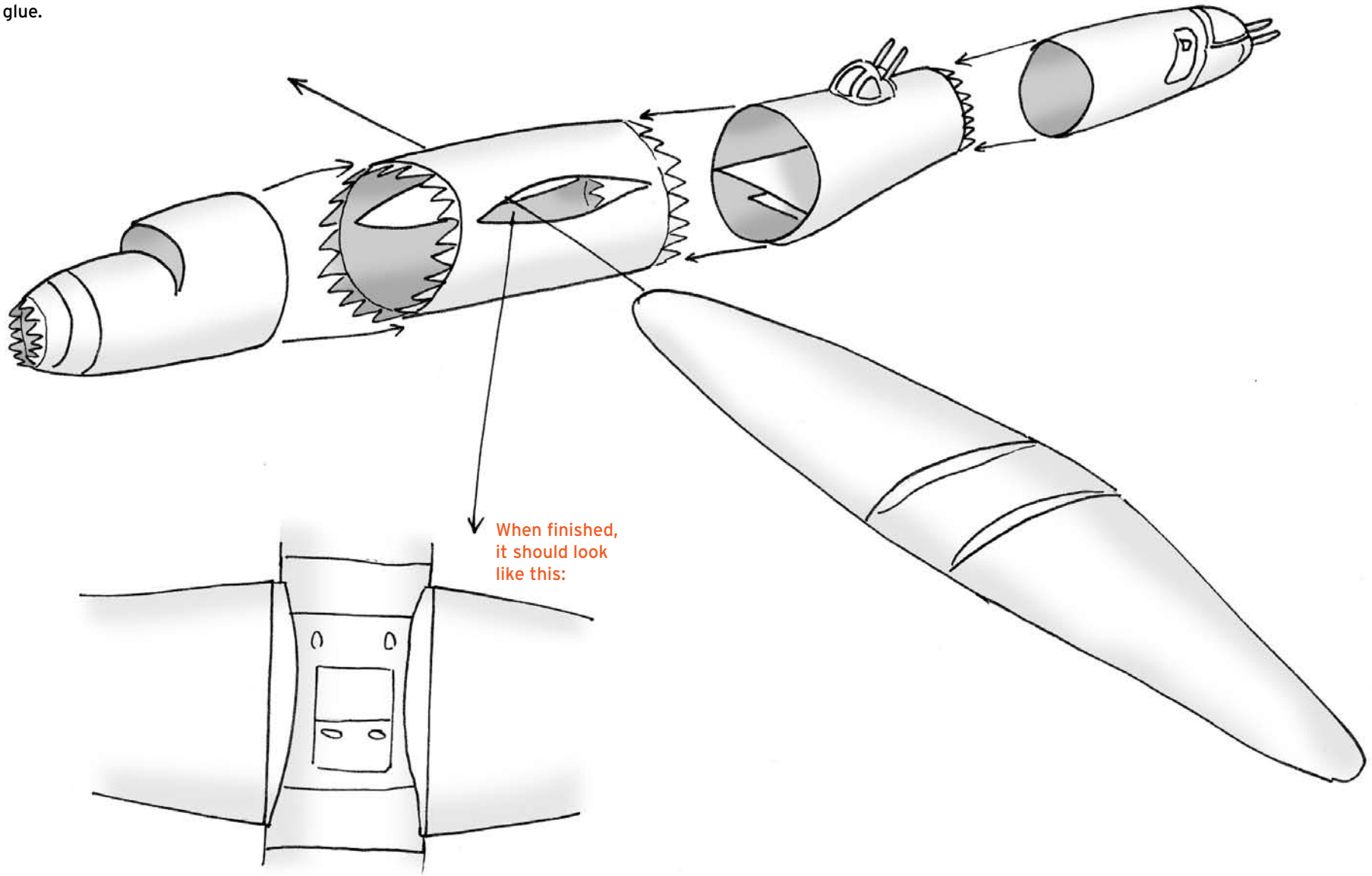


36. Wrap the upper side of the wings around the stabilizer. Glue to stabilizer and wing edge.

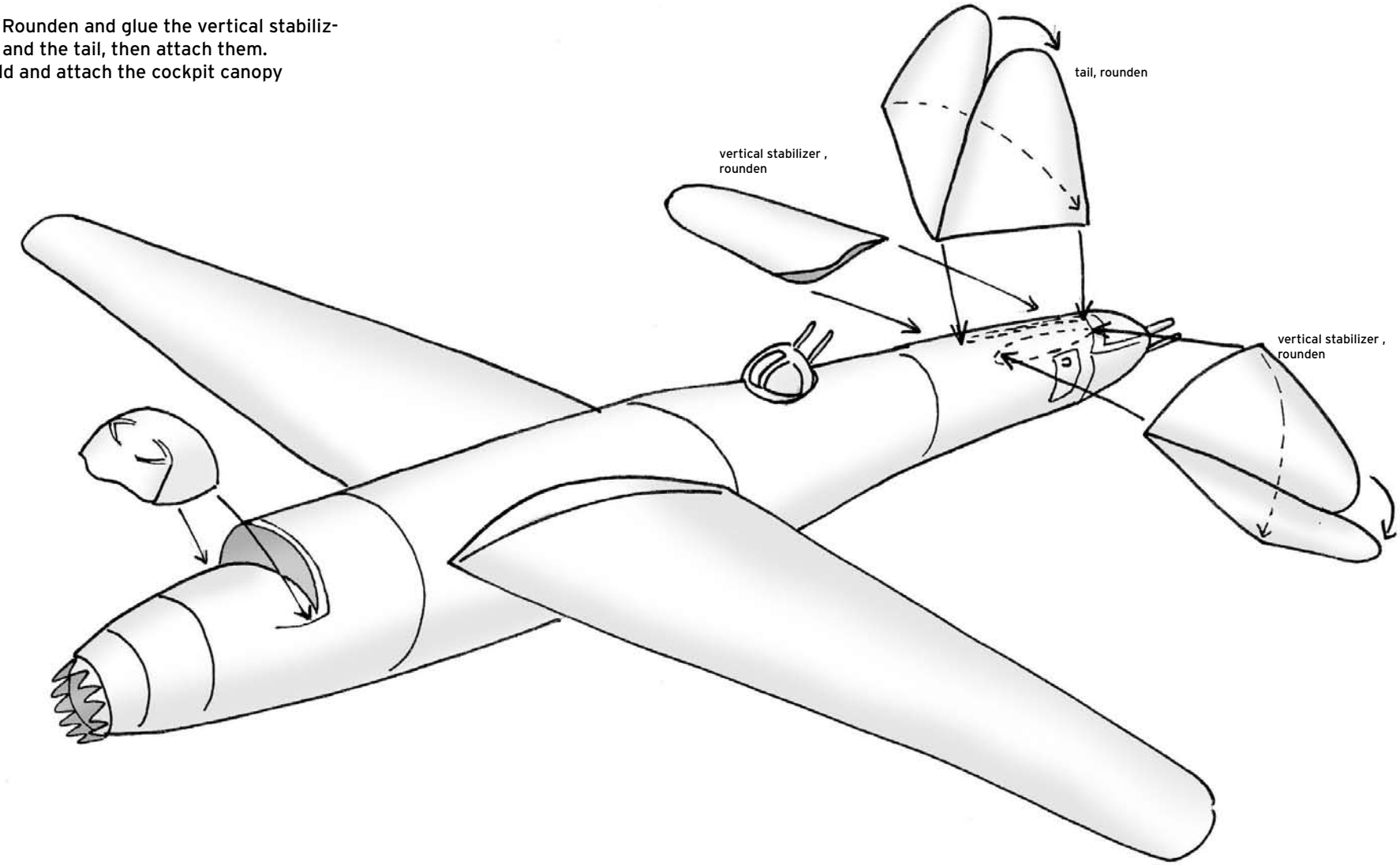
37. Glue the wing center piece on the middle



38. Glue together the main fuselage parts. Stick the wing through the fuselage and glue.

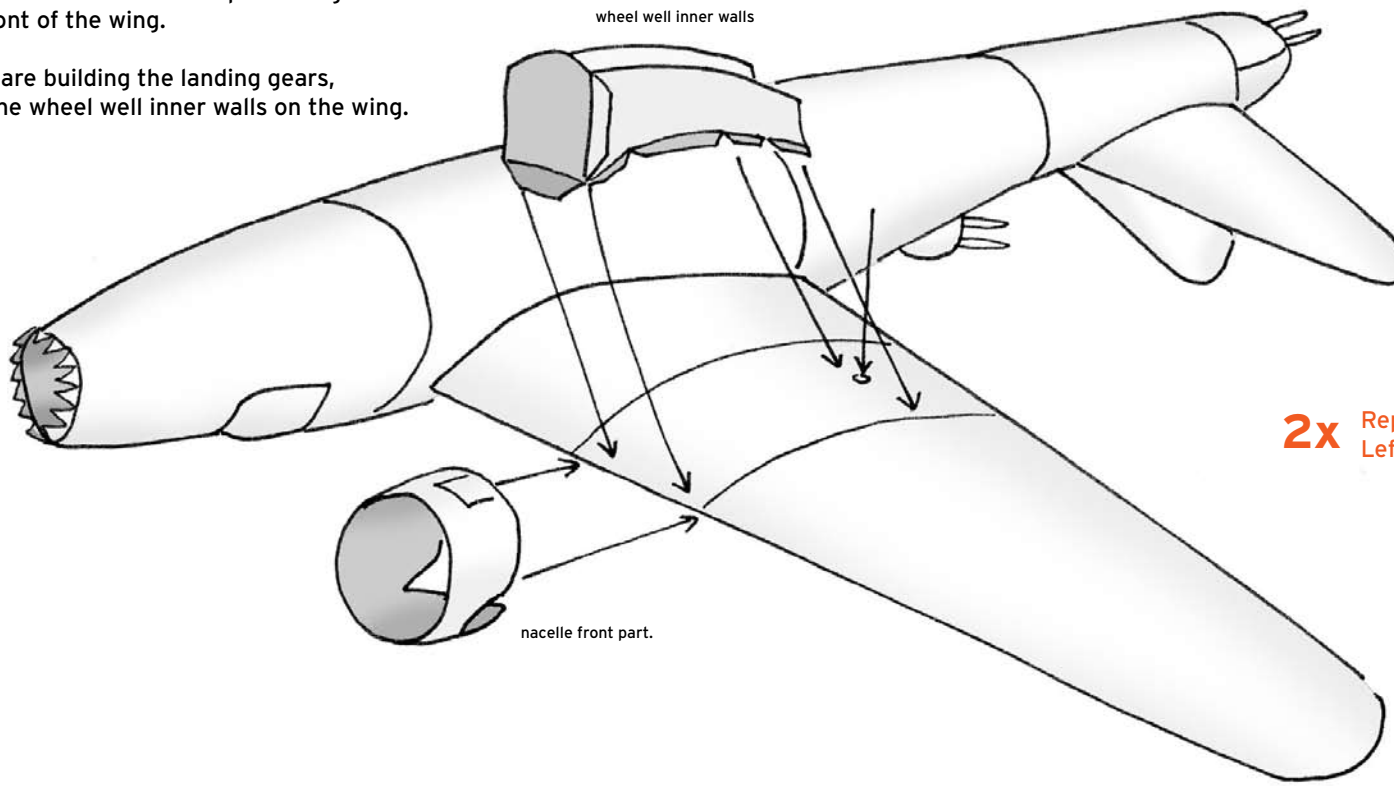


39. Rounden and glue the vertical stabilizers and the tail, then attach them.
Build and attach the cockpit canopy



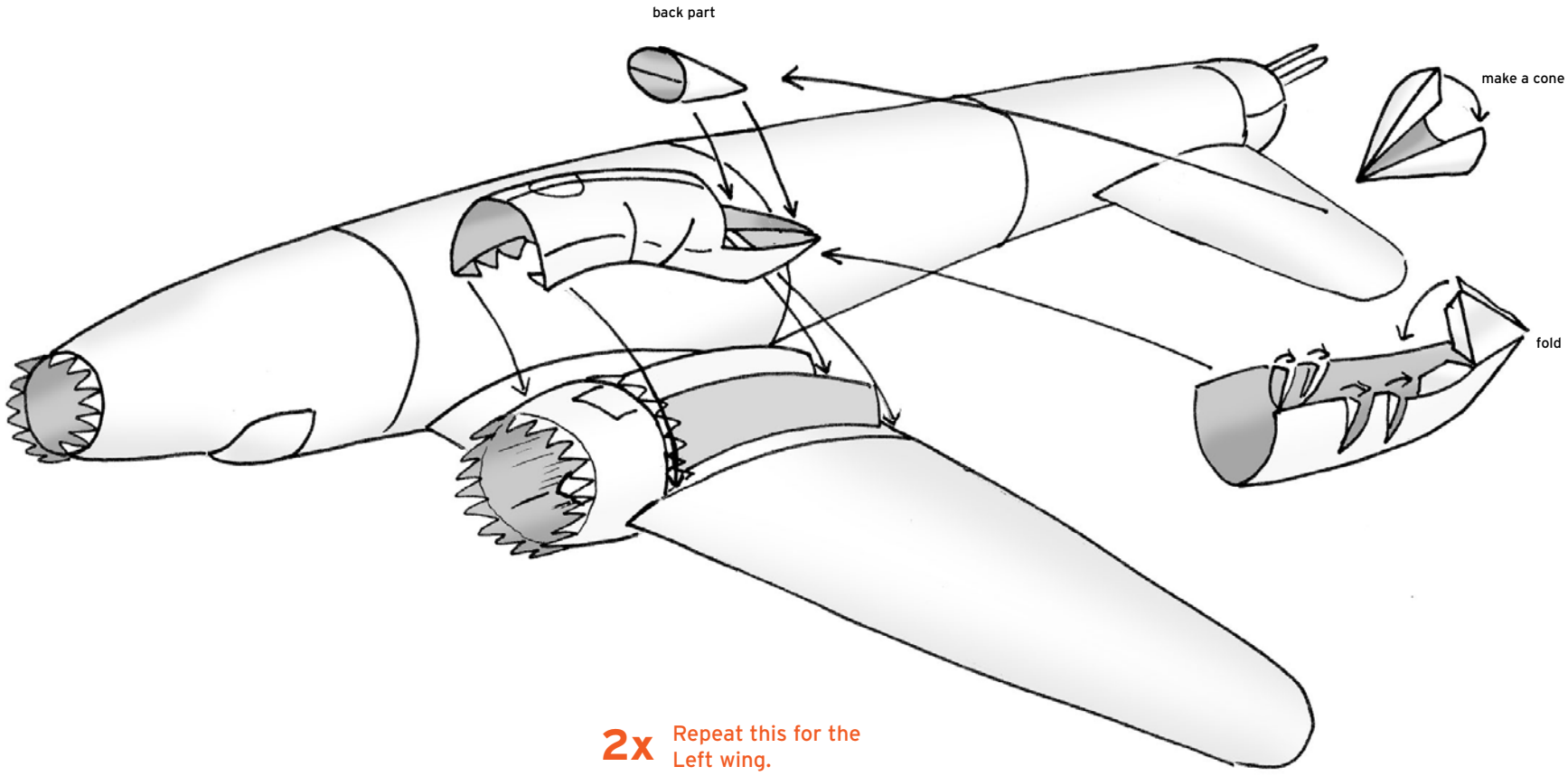
40. Build the nacelle front part and glue it to the front of the wing.

If you are building the landing gears, glue the wheel well inner walls on the wing.



2x Repeat this for the Left wing.

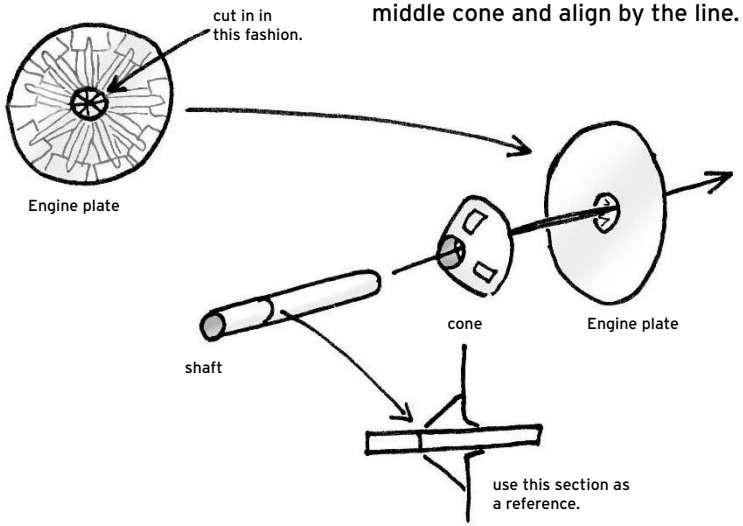
41. Build and attach the nacelle main part. Make a cone for the back part and glue it into the triangle opening at the back.



2x Repeat this for the Left wing.

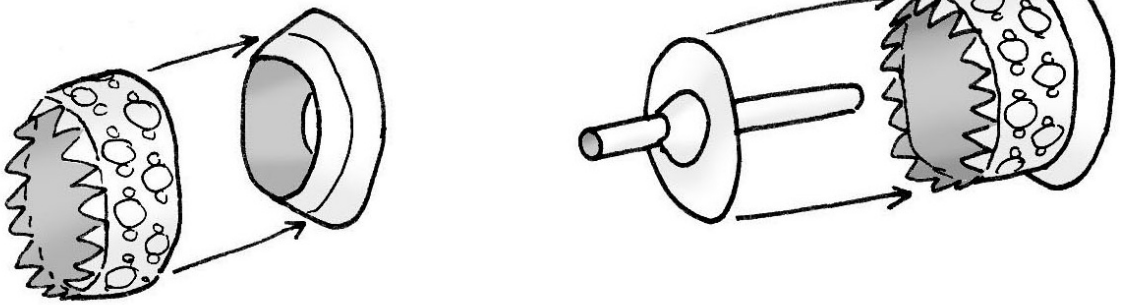
Engines

42. Cut a hole in the engine plate. Wrap the propeller shaft around a toothpick so the toothpick can comfortably move inside. Push it through the holes in the engine plate and the middle cone and align by the line.

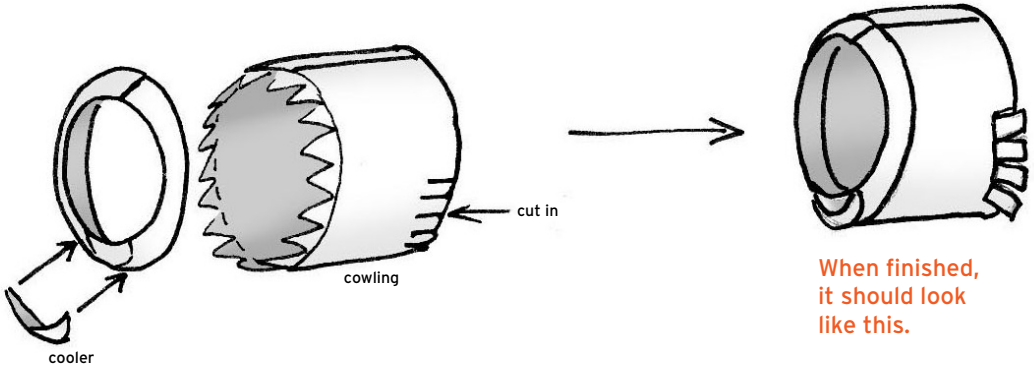


2x Both engines are build the same way

43. Glue together the engine ring and the conic part.
Then glue the just assembled part on it.
Align the cylinders the right way.

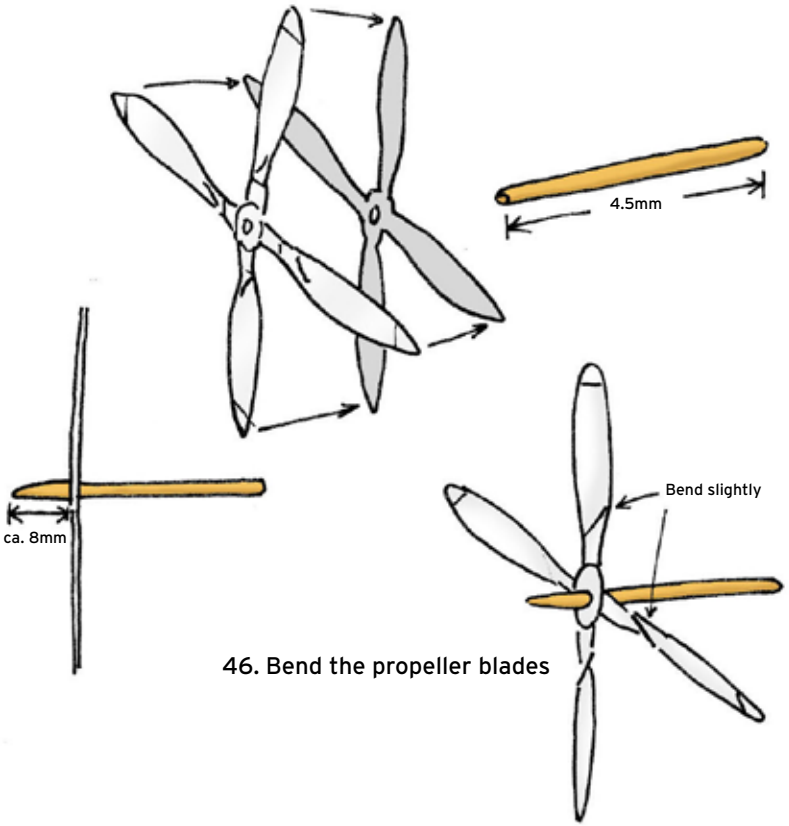


44. Build the cowling and attach the front edge. Glue the little cooler mouth on the front edge. Cut in the exhaust flaps and bend them inward.



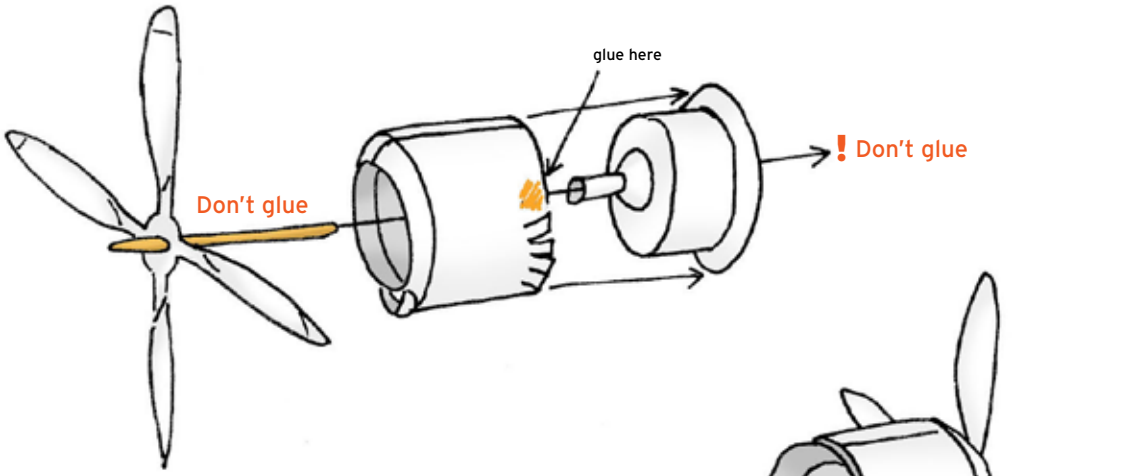
When finished, it should look like this.

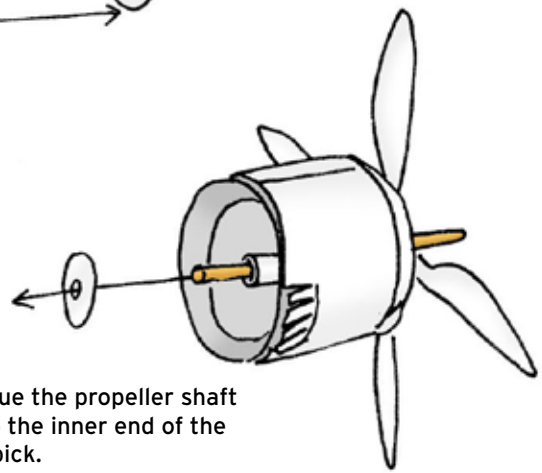
45. Glue together the propellers. The one with yellow lines in the center is the front part. Make a hole in the mittle. Then cut a toothpick to the right length and glue it in the hole.



46. Bend the propeller blades

47. Glue the cowling to the engine, glueing in the marked spot. Then push the propellers toothpick through the shaft. Don't glue!



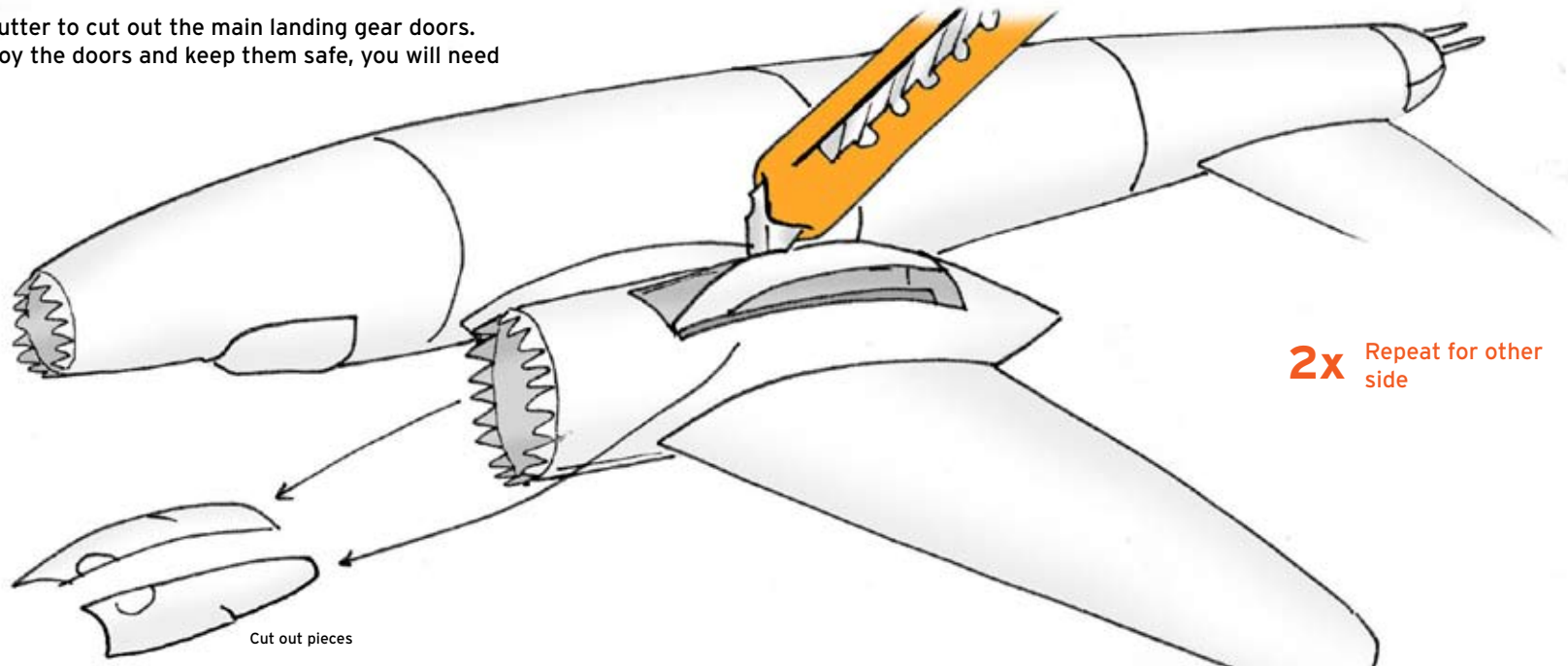


48. Glue the propeller shaft hub to the inner end of the toothpick.

2x Both engines are build the same way

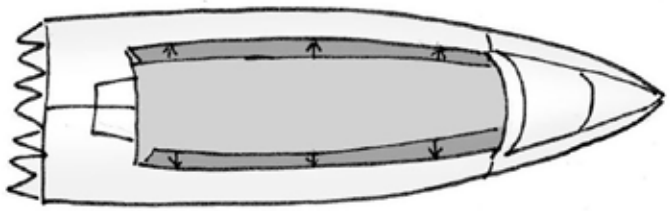
If you don't build the landing gear, jump to 51

49. Use a cutter to cut out the main landing gear doors. Don't destroy the doors and keep them safe, you will need them later.

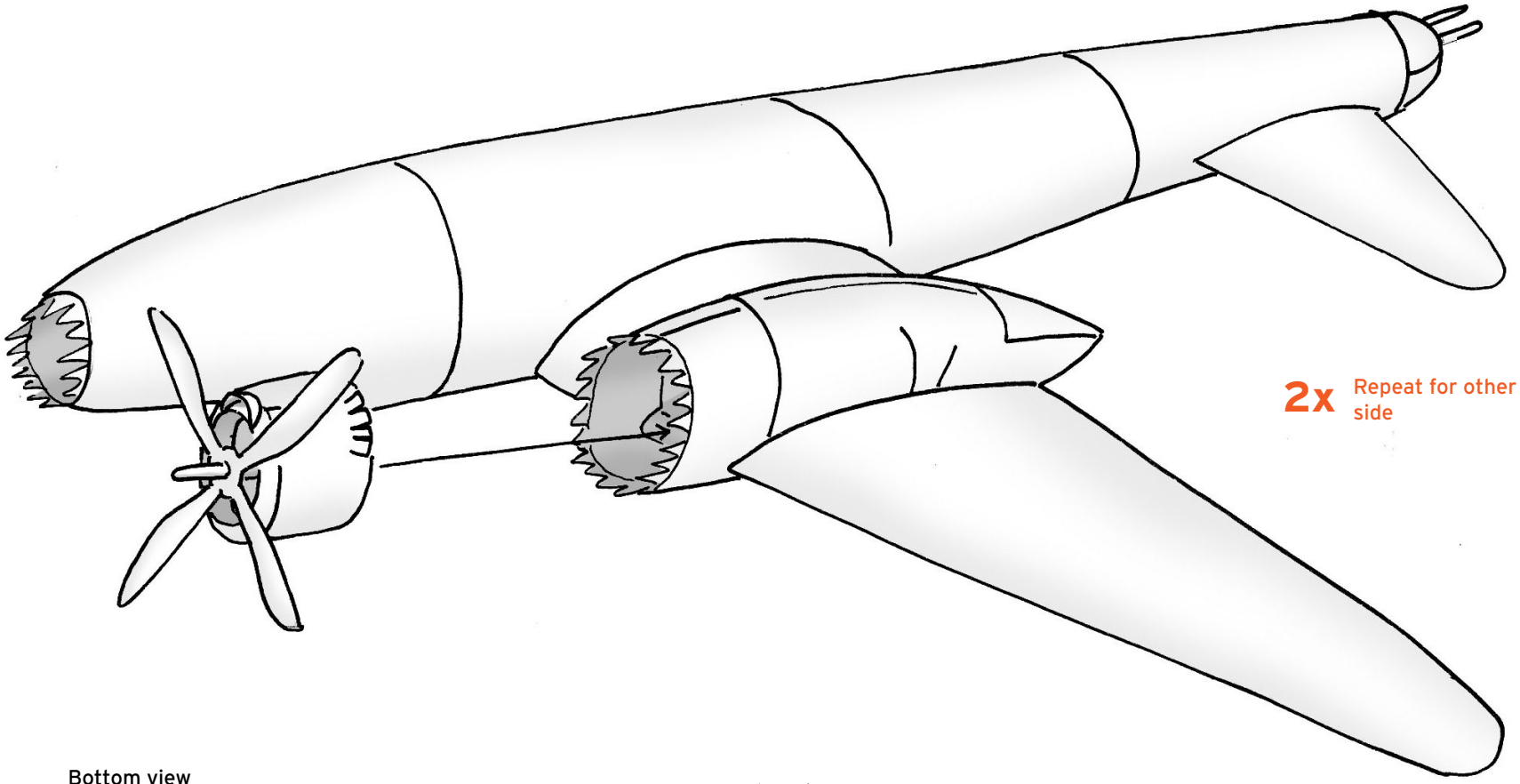


2x Repeat for other side

50. Glue the wheel well inner walls to the sides of the outer walls, so there will be no more gap between them.

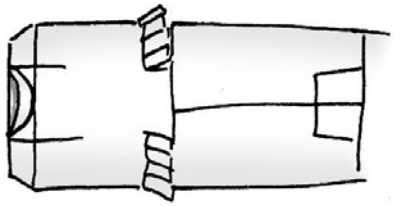


51. Attach the engines



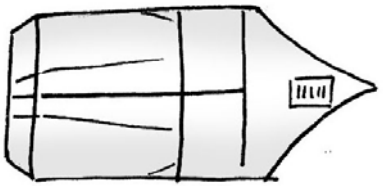
2x Repeat for other side

Bottom view

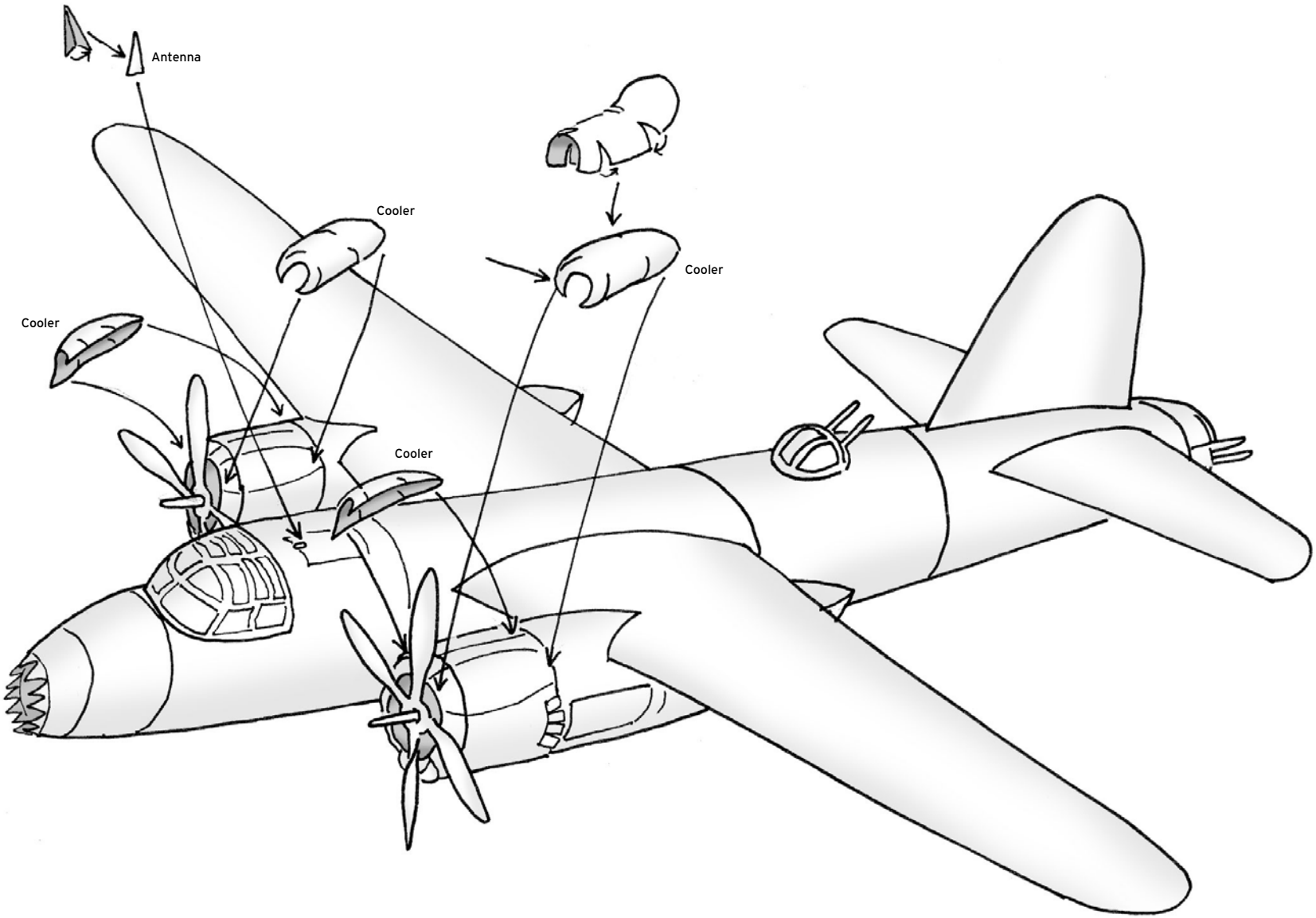


When finished, it should look like this:

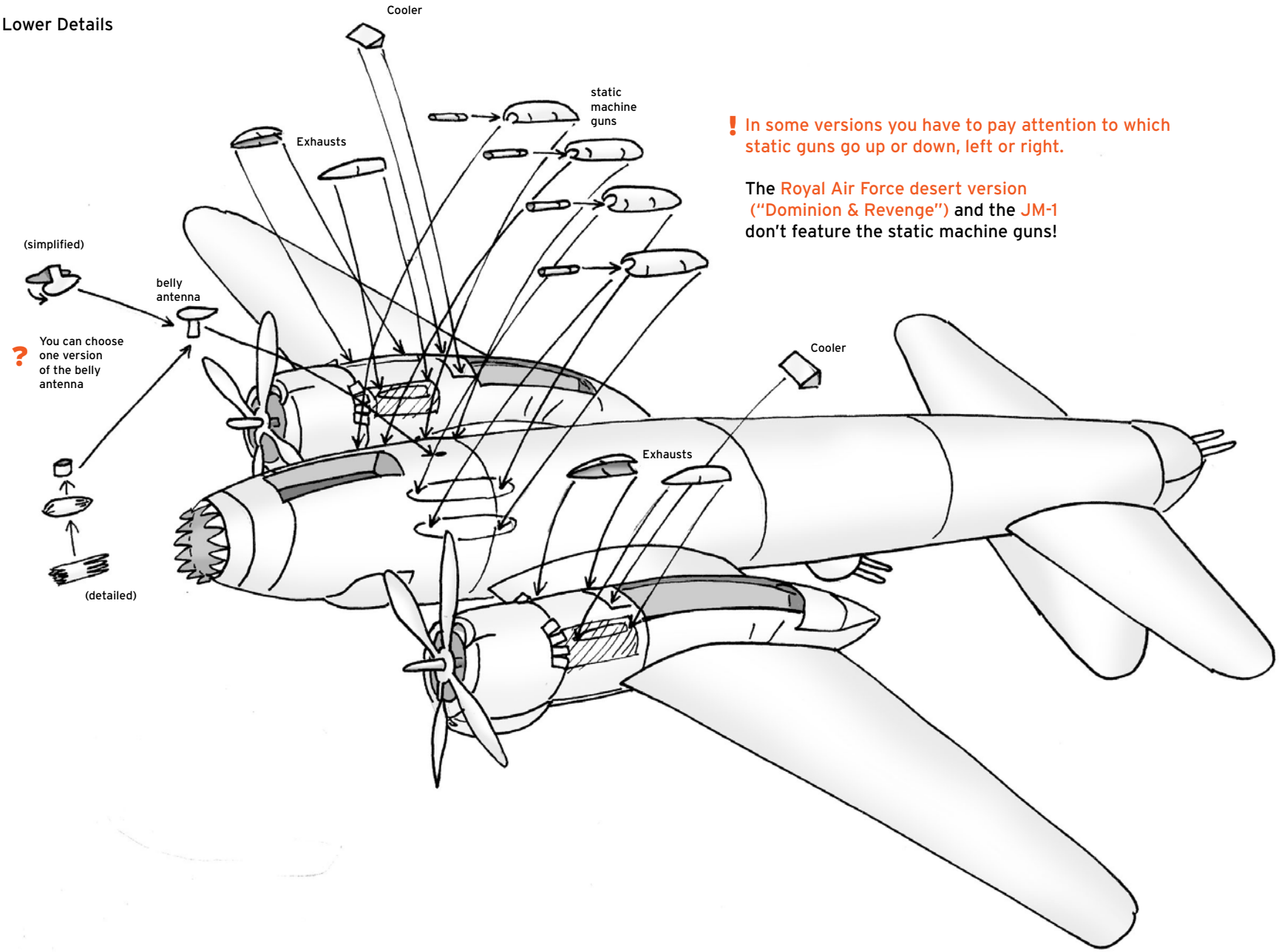
top view



52. Upper details



53. Lower Details

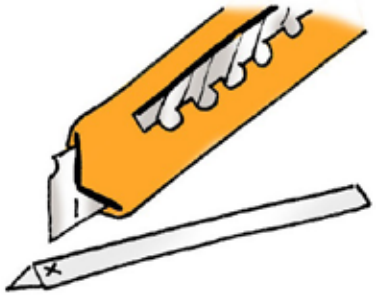


! In some versions you have to pay attention to which static guns go up or down, left or right.

The Royal Air Force desert version ("Dominion & Revenge") and the JM-1 don't feature the static machine guns!

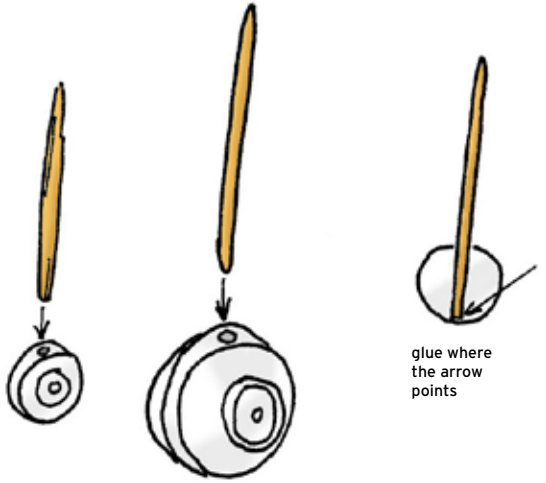
if you don't build the landing gear , jump to 60

54. Use a cutter to make a hole in all 3 wheel treads, as shown

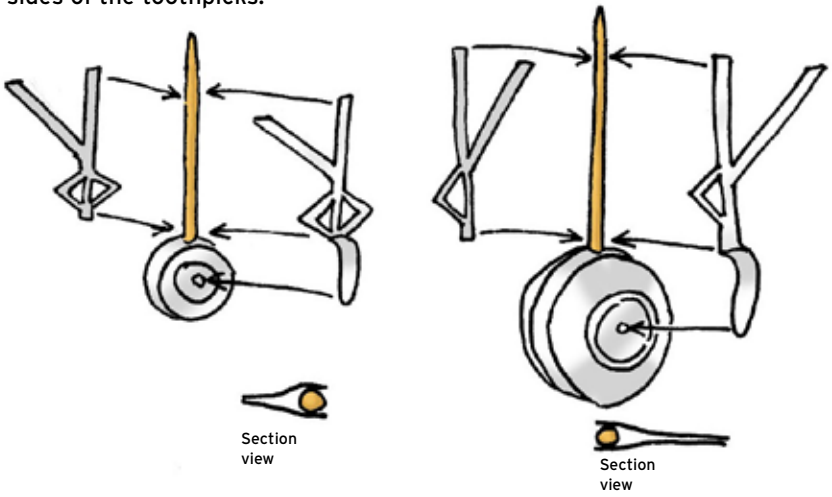


55. Build the wheels

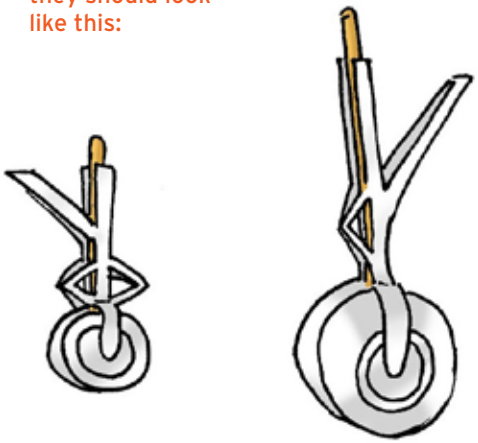
56. Push a toothpick all through the wheel and glue its tip to the bottom. (See section) **3x**



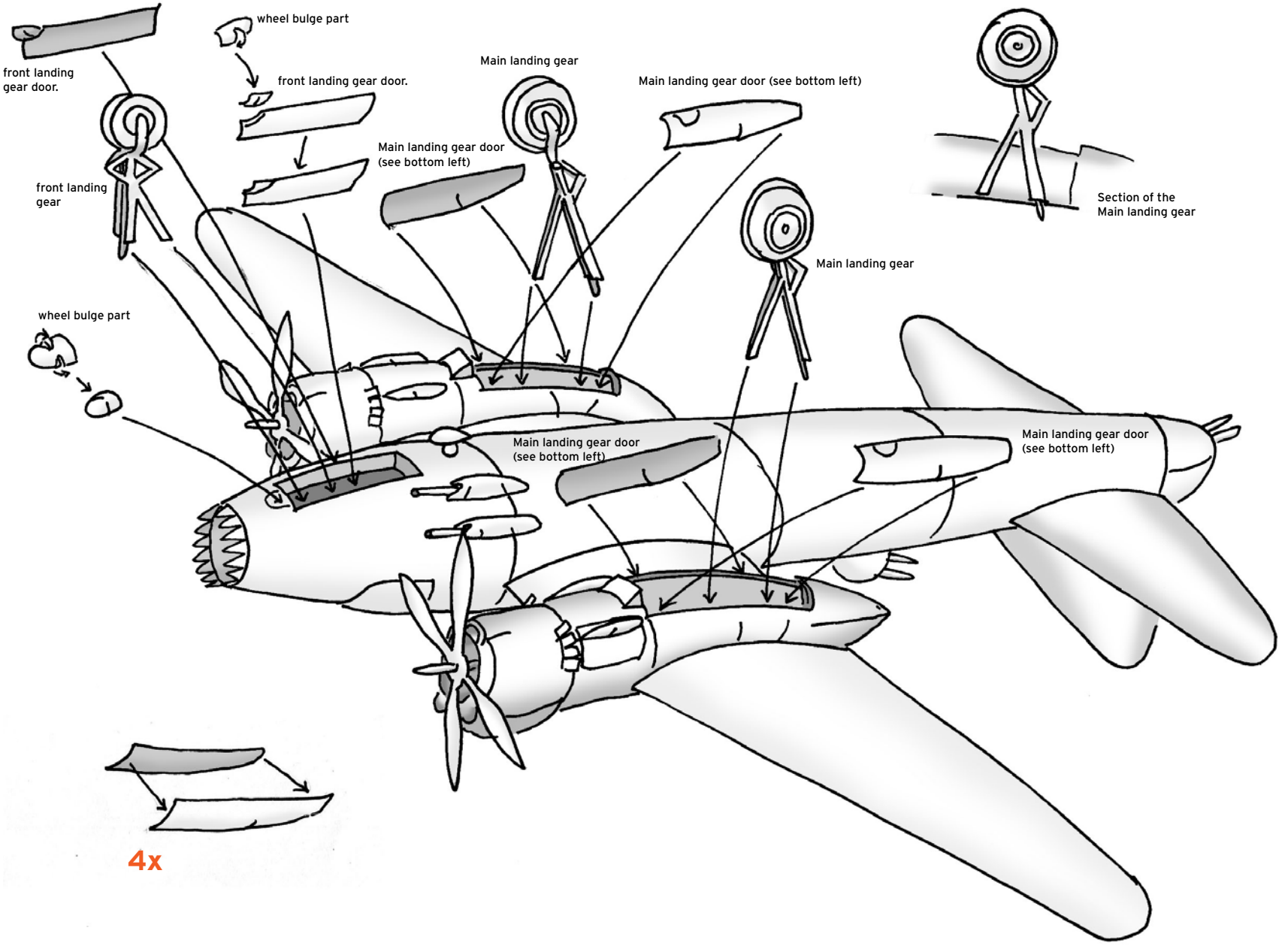
57. Glue the landing gear strut parts on both sides of the toothpicks.



When finished, they should look like this:



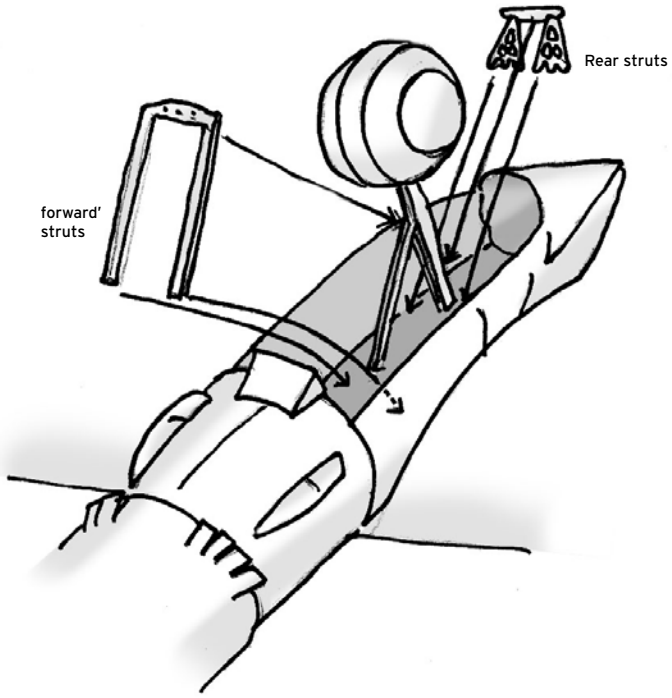
58. Attach the landing gear (check 58A on the next page if you want to add the extra detail)



? Optional parts

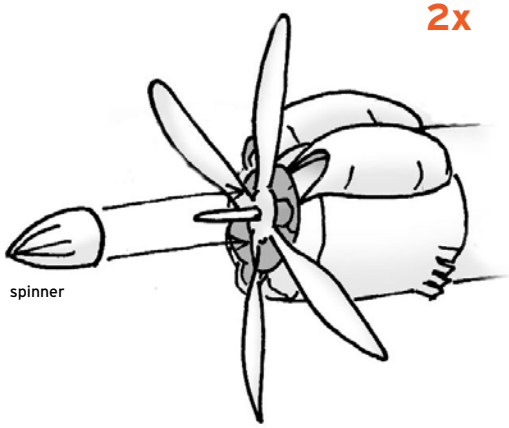
58A. The pages include parts for some extra landing gear details. They are highly optional.

If you want to build them, better install them before the gear doors.



59. The Royal Air Force desert version ("Dominion & Revenge") features big propeller spinners, required for authenticity

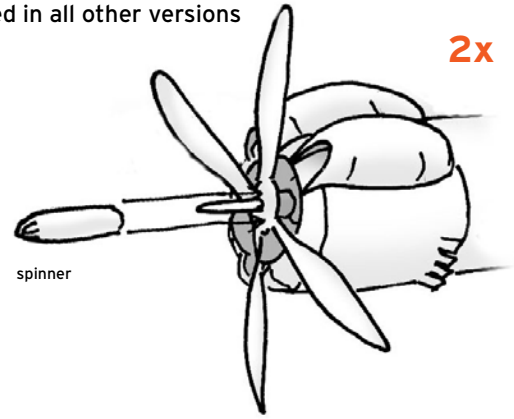
2x



? Optional parts

The spinners included in all other versions are optional

2x



60. Build and attach the glass nose.

The JM-1 has no nose gun.