



Ilyushin

# Il-2 Sturmovik

"Our Red Army now needs Il-2 aircraft like the air it breathes, like the bread it eats."

—Stalin

The Ilyushin Il-2 Sturmovik, which turned out to be the most produced military aircraft of all time, goes back to a proposal made in January 1938 by Sergej V. Ilyushin for a "Winged Tank". The first prototype, designated TsKB-55, took flight on October 2nd 1939. Unlike any plane before, the TsKB-55 was built around an armor shell, made of 4-5mm thick armor plates for the engine and even thicker for the pilot and gunner and even the canopy windows were armored. After problems with the cooling system had been resolved, an order for ten pre-production aircraft was issued, under the designation BSh-2, meaning Bronironwaniy Stormovik - Armoured battle aircraft.

But Soviet Leadership preferred a single

seat bomber which could penetrate enemy territory and ordered the Il-2 to be converted. The single-seater first flew on October 12th 1940 and showed improved flight characteristics. Because of reliability issues with the originally intended 7.62mm guns, the production variant included two 20mm cannons. This change to more powerful guns later became one of the key factors of the Il-2's success. In January 1941, as production had started, the BSh-2 was renamed to Il-2.

When the Il-2 arrived at the frontlines, there were only few pilots trained to fly it, and none had test fired the weapons, which led to disastrous results in the first weeks, but as the pilots got used to the Il-2, it proved quite successful. The German Wehrmacht

was not prepared for this new enemy, that could easily destroy their armored vehicles. Its rockets could destroy tanks with a single hit, but achieving that hit proved extremely difficult, so the cannons became the primary weapon of the Il-2. German ground soldiers feared the Il-2, and gave it nicknames such as "Der schwarze Tod" (the black death) or "Der Schlächter" (The Butcher). The Soviet troops in contrast took a liking to the aircraft, which gave them such close support, calling it "the flying infantryman" or "the flying tank".

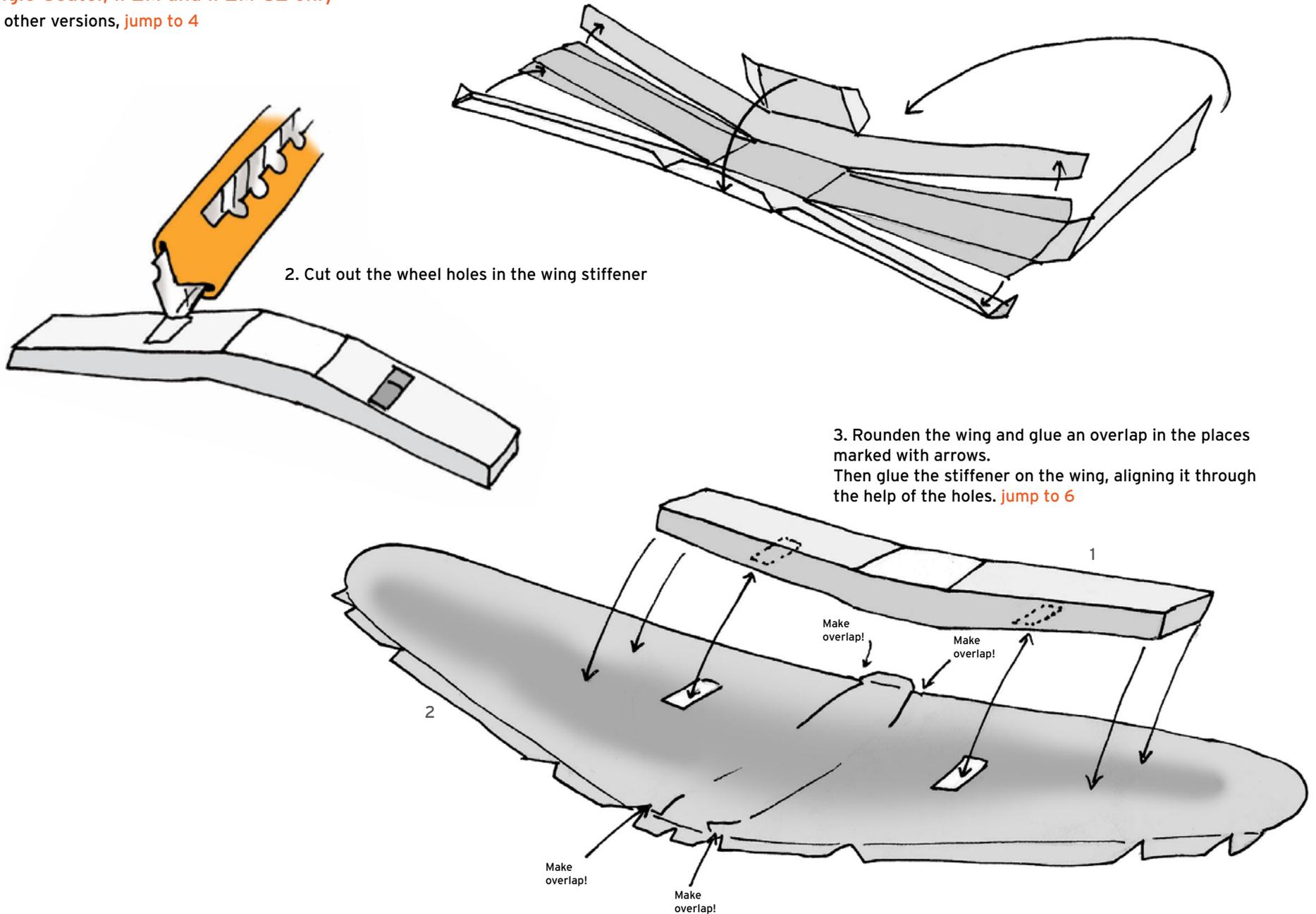
Because it could only be attacked on certain vulnerable spots, Luftwaffe pilots called the Il-2 "Betonvogel" (concrete bird), "Zementner" (concrete guy) or "Eiserner Gustav" (Iron Gustav).

The original Il-2 was, in spite of its armor, very vulnerable to attack by enemy fighters as it was defenseless, if attacked from behind, leading to an unnecessarily high attrition rate. This prompted the engineers of many frontline squadrons to help themselves, by installing a provisional gun turret in the position behind the middle fuselage fuel tank. As a reaction, a two-seated version was developed, the Il-2M, which included a gunner position in the same position as field modifications had placed it. The rear gunner's position was very spartan, as any unnecessary equipment would have increased weight. The introduction of the rear gunner's position proved a success in the beginning, but Luftwaffe pilots found ways to avoid it. Another problem was, that the rear gunner's position changed the balance of the Il-2 and made it even more sluggish and hard to handle than it already was. This problem was fixed by a swept back outer wing section and resulted in the Type 3 or Il-2M-3, which became the definitive version of the Il-2.

A very unique version of the Il-2 was the Il-2M-82 (also known as Il-4): When the Soviet factories were moved to behind the Ural mountains after the German attack on the Soviet Union, Soviet officials feared a shortage of inline engines and ordered a modification of the Il-2 with the Shvetsov M-82 radial engine. A single Il-2 was modified. This version was based on the single-seater, and was refitted with the M-82 and a rear gunner seat. The new plane was labeled Il-4, but it proved inferior to the inline-engine powered Il-2, so it was cancelled, when it became clear that there would be no shortage of inline engines.

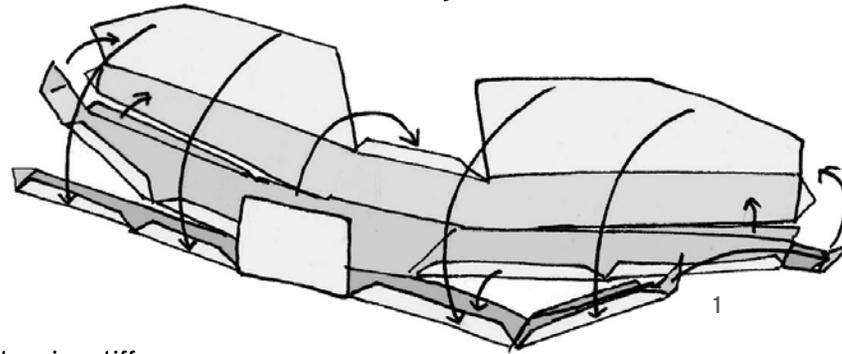
After the end of the war, most Il-2's in Soviet service were quickly replaced by its predecessor, the Il-10, but a number of Il-2's remained in active service deep into the fifties in allied countries. In these late days of its service, the Il-2 received the NATO codename "Bark".

Single-Seater, Il-2M and Il-2M-82 only  
for other versions, [jump to 4](#)

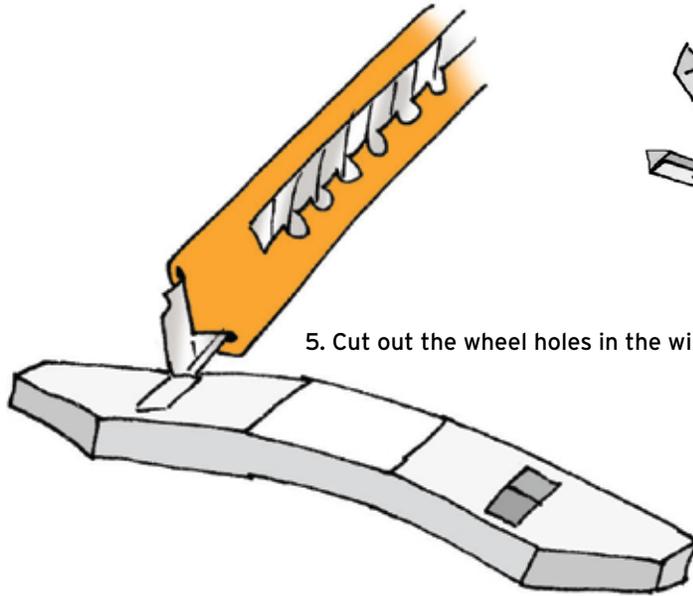


Il-2M3, Il-2T, Il-2UT, Il-2 Type 3-M

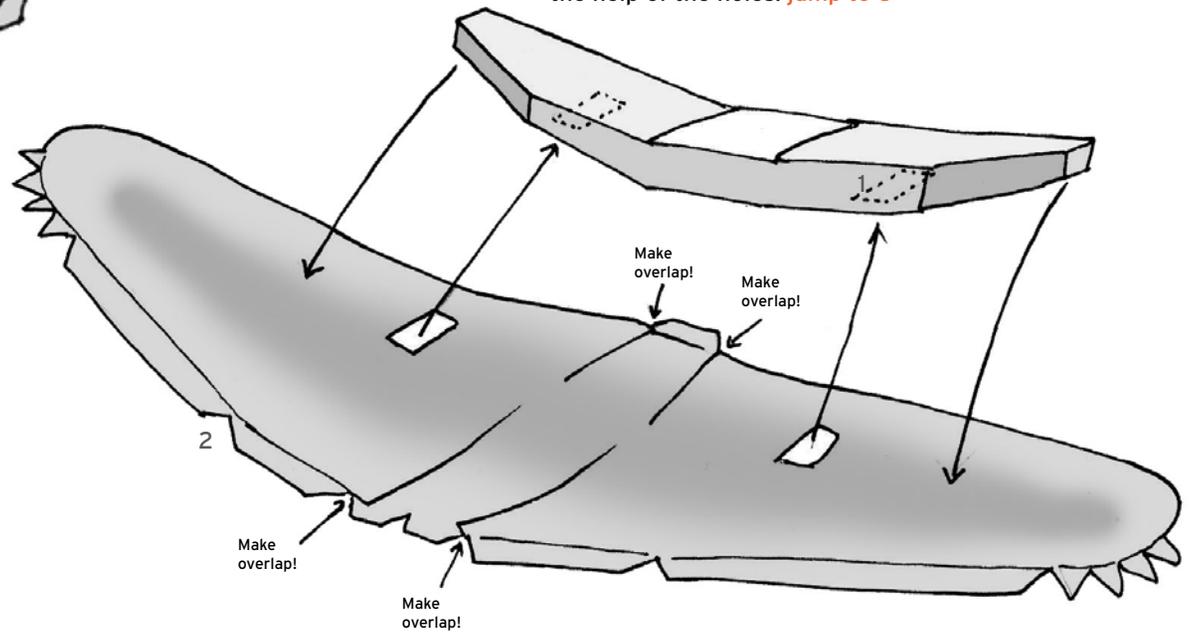
4. Build the wing stiffener



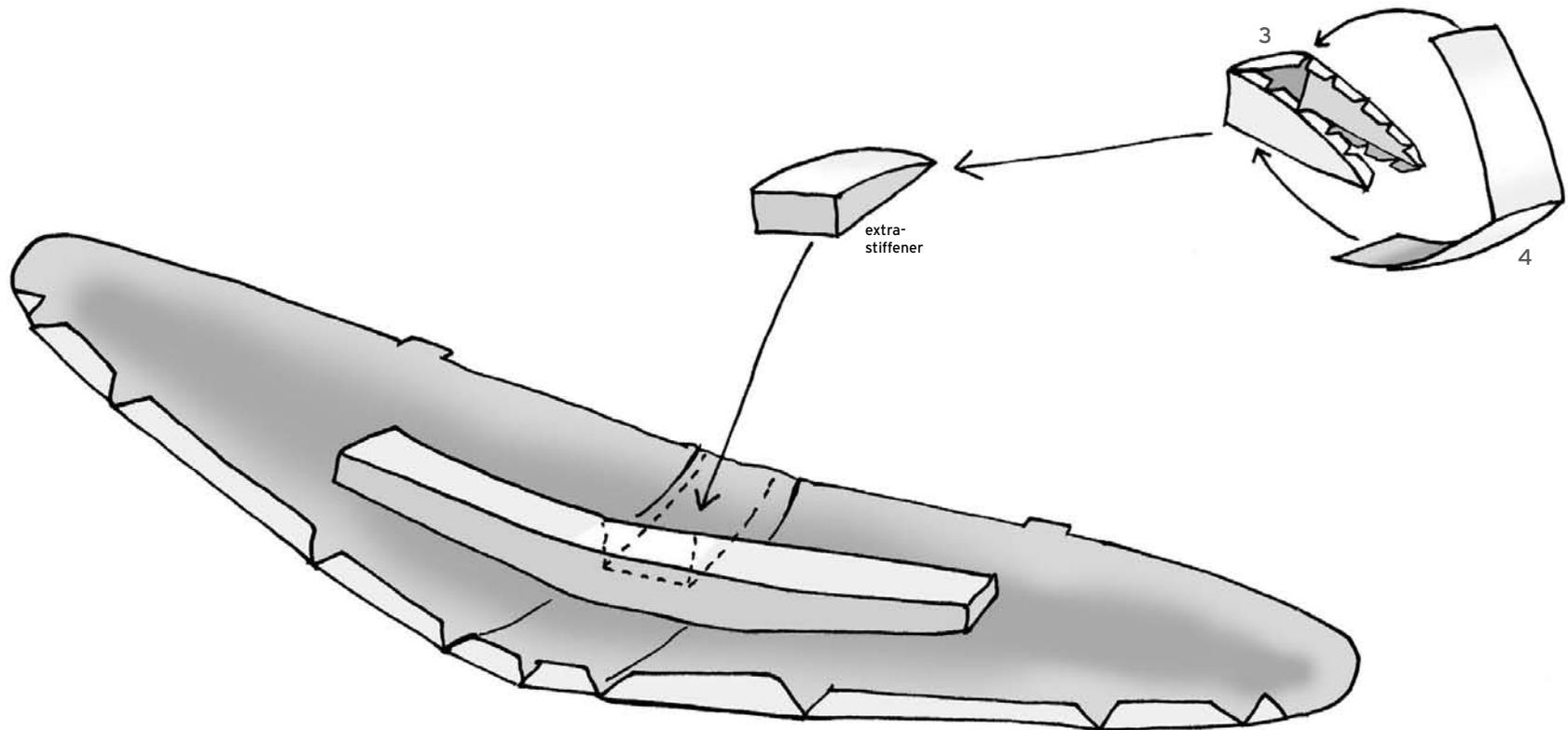
5. Cut out the wheel holes in the wing stiffener



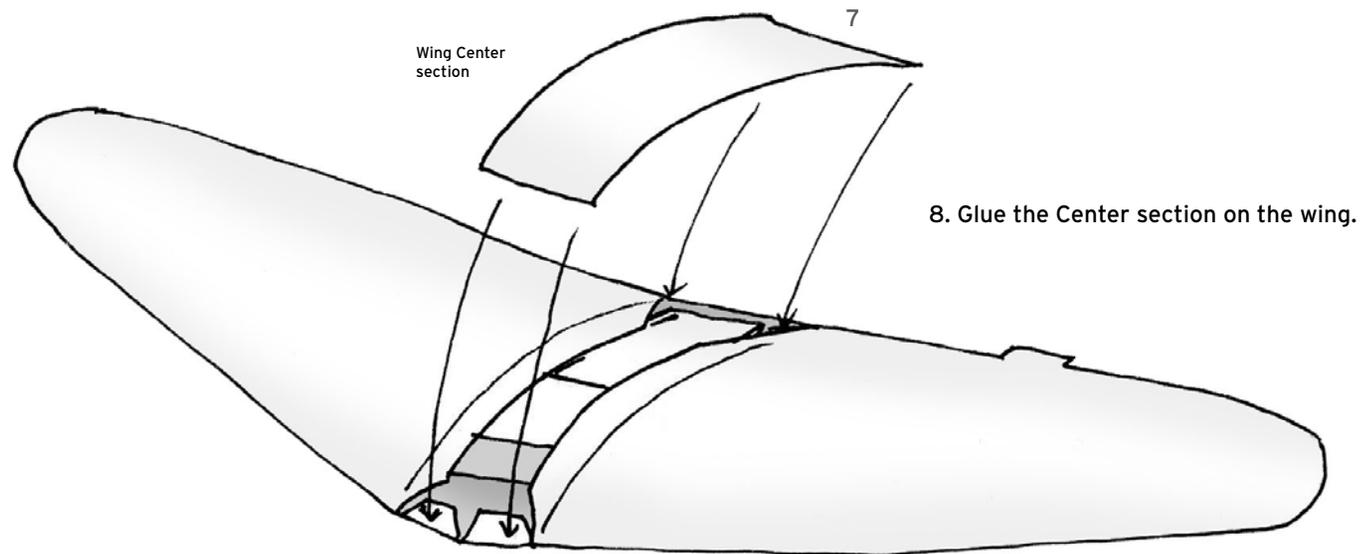
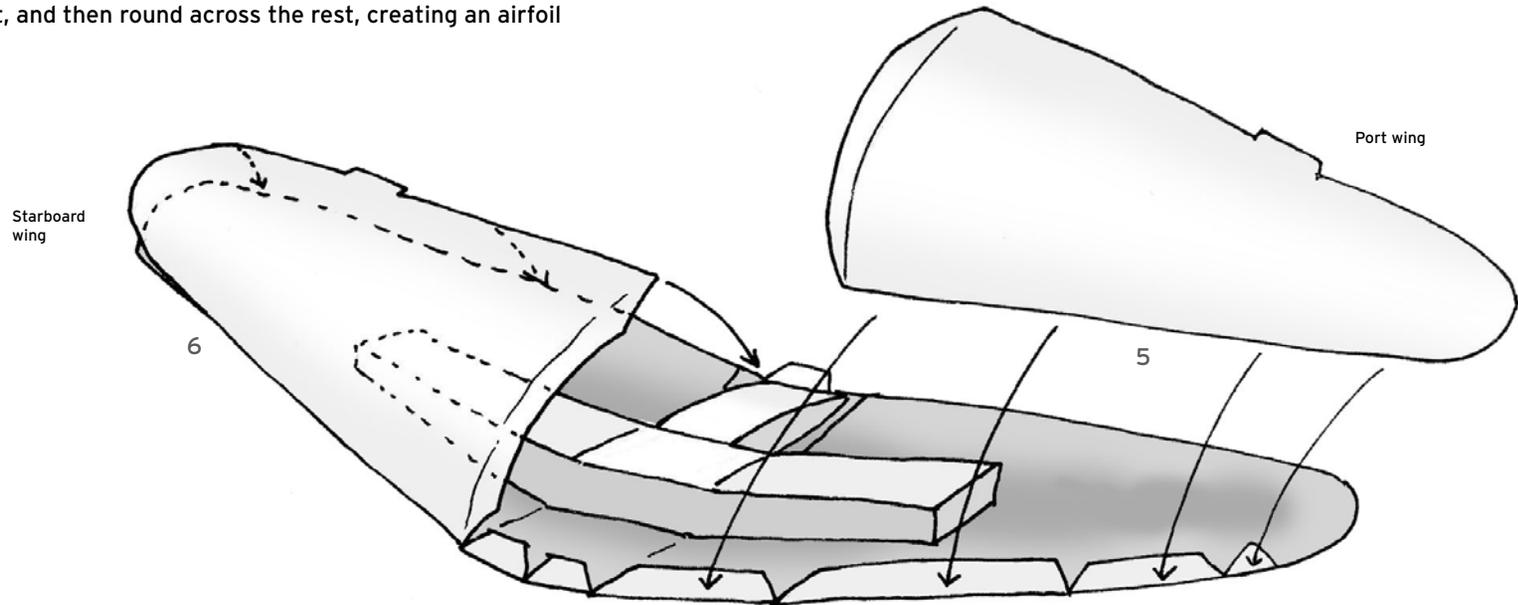
6. Rounden the wing and glue an overlap in the places marked with arrows. Then glue the stiffener on the wing, aligning it through the help of the holes. [jump to 6](#)



6. The Il-2 requires an additional stiffener under the fuselage.  
Build it and attach it centered behind the main stiffener.  
Make sure to align the top/bottom side correctly.

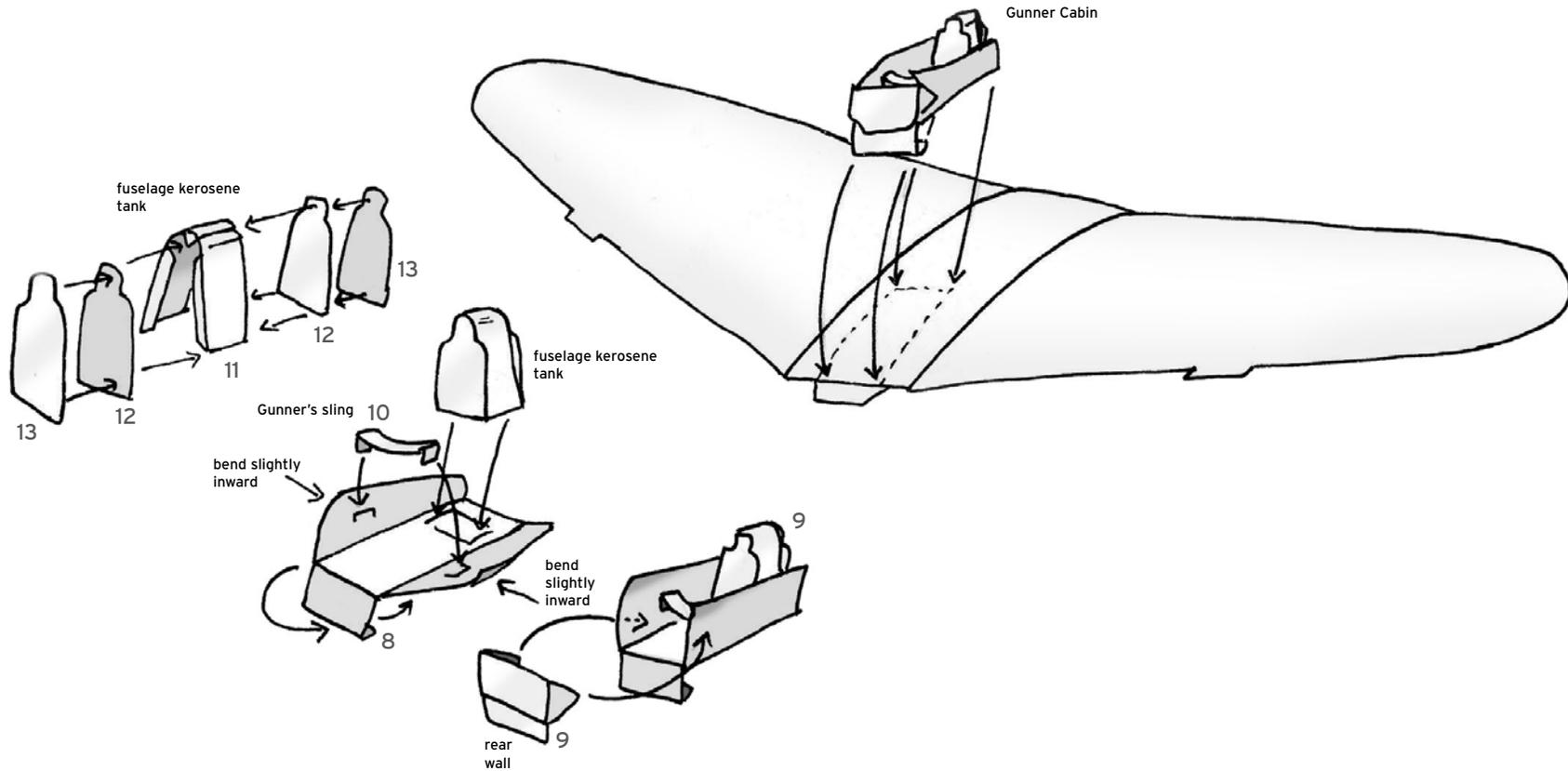


7. Rounden the upper wing parts and glue them to the lower parts.  
First in the front, and then round across the rest, creating an airfoil

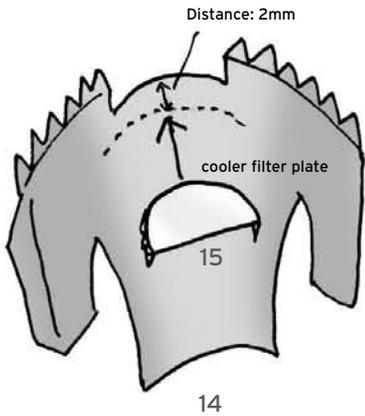


Versions with open rear cabin, such as the **Il-2M**, **Il-2M3**, **Il-2T** and **Il-2 Type 3-M**, require the construction of the gunner's cabin. The gunner cabin is not included in other versions.

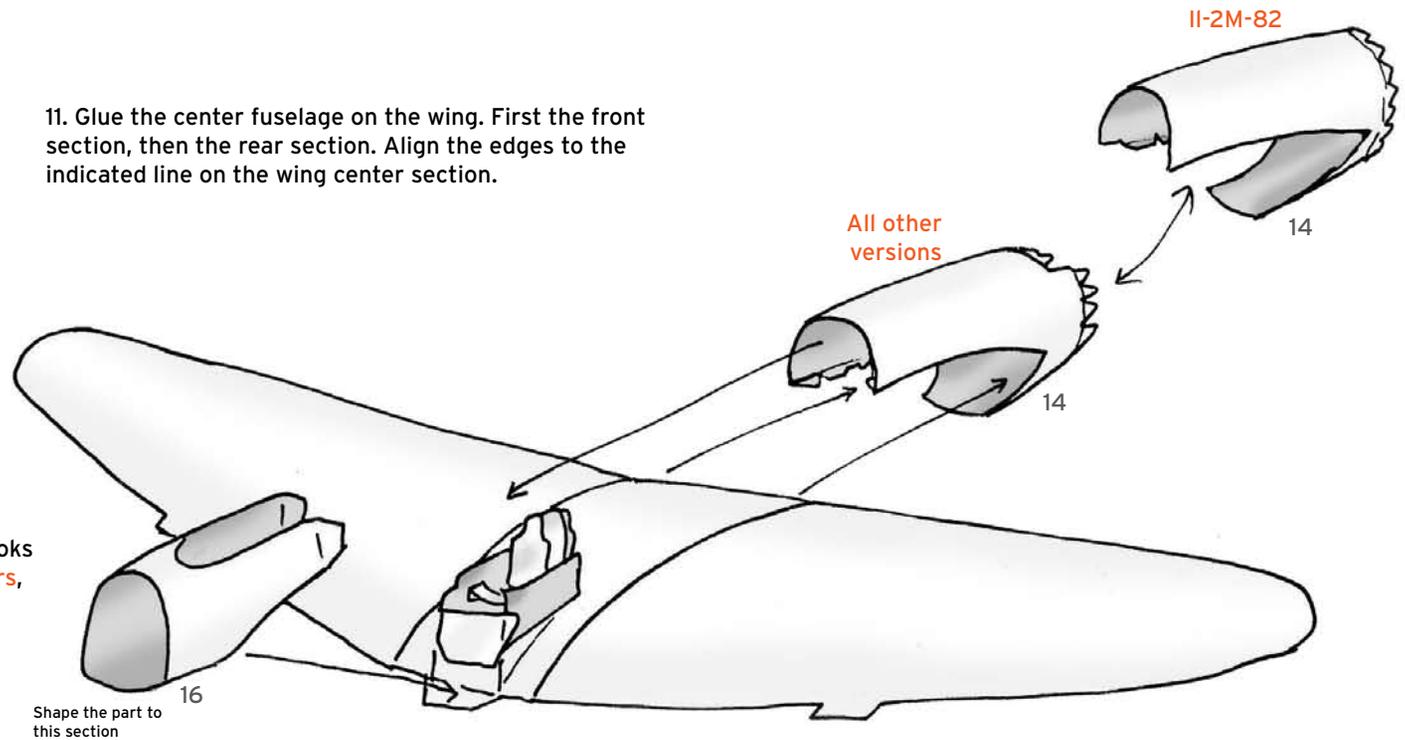
9. Glue the Center section on the wing.



10. Rounden the forward center fuselage part and glue the cooler filter plate on it before glueing it together. For the **Il-2M-82 version**, ignore this step.

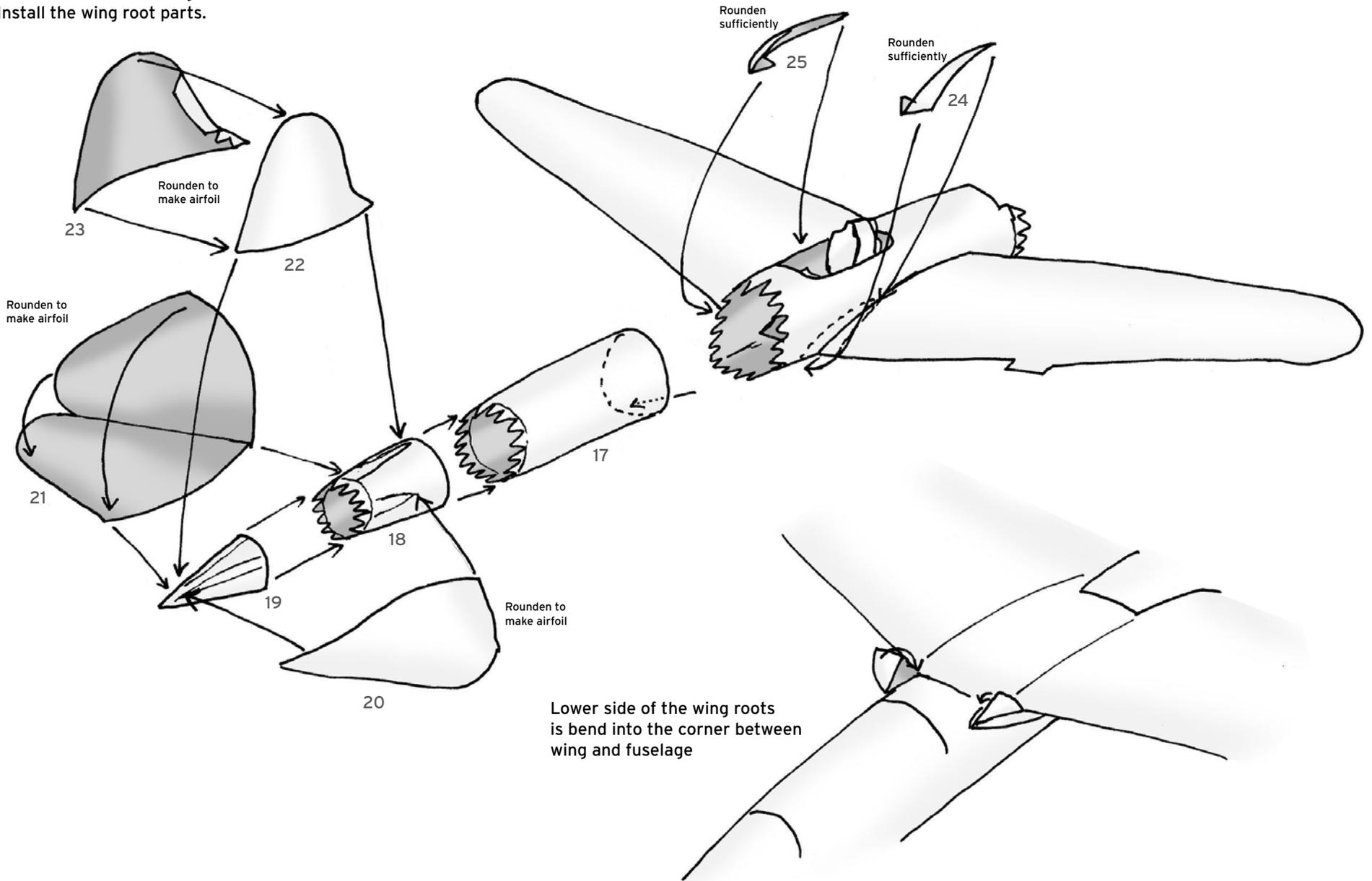


11. Glue the center fuselage on the wing. First the front section, then the rear section. Align the edges to the indicated line on the wing center section.



The rear center fuselage part looks a little different on **Single-seaters**, but is build the same.

12. Build the rear fuselage, Stabilizers and tail.  
Install the wing root parts.



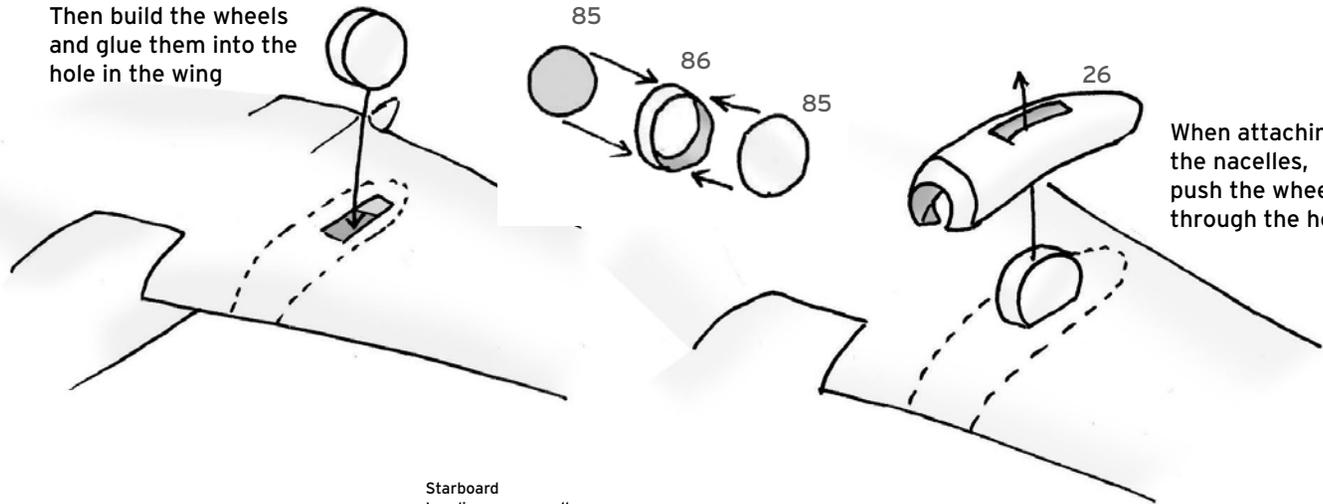
## 13. Landing gear nacelles



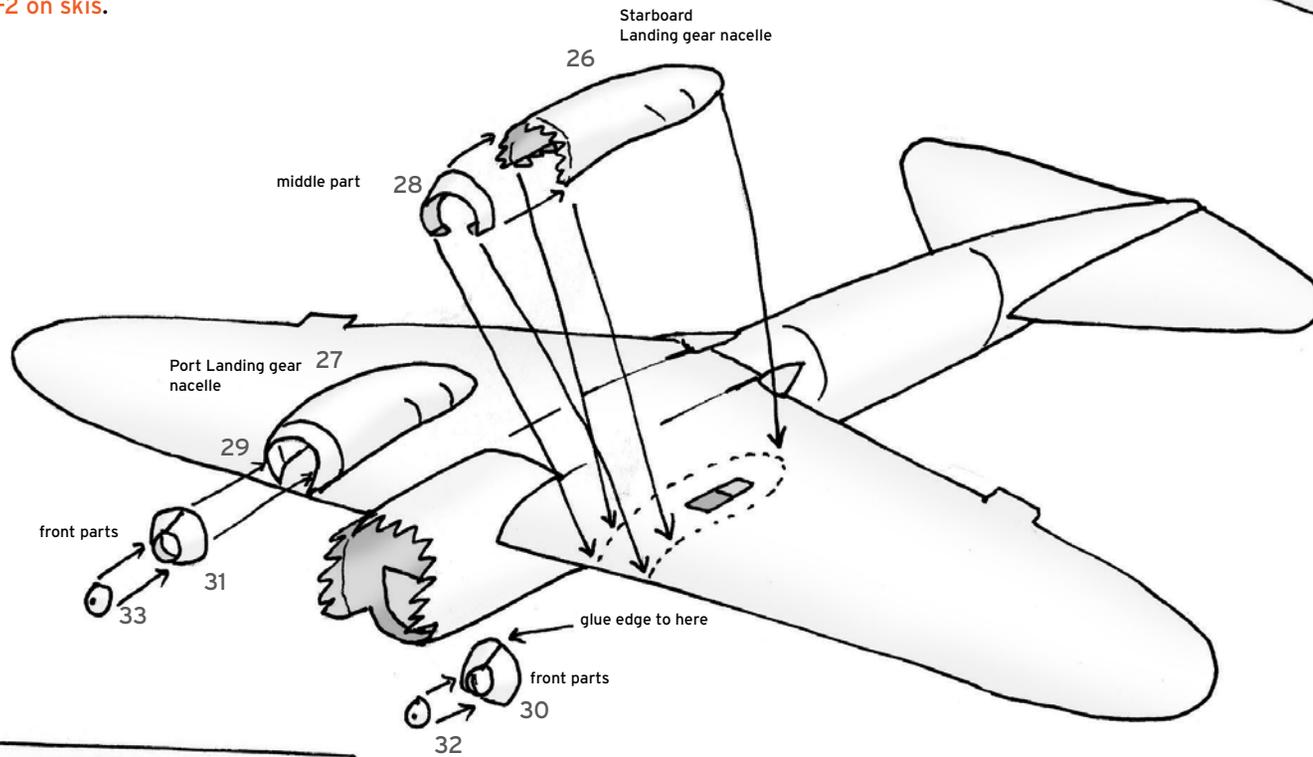
If you build the Il-2 with **landing gear up**, you need to cut out the holes on the nacelles (26,27) first

This and installing the wheel is not necessary for the **Il-2 on skis**.

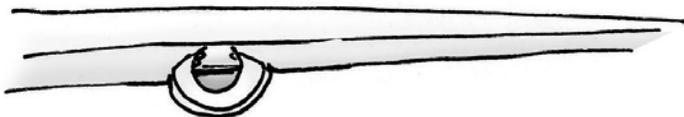
Then build the wheels and glue them into the hole in the wing



When attaching the nacelles, push the wheel through the hole.

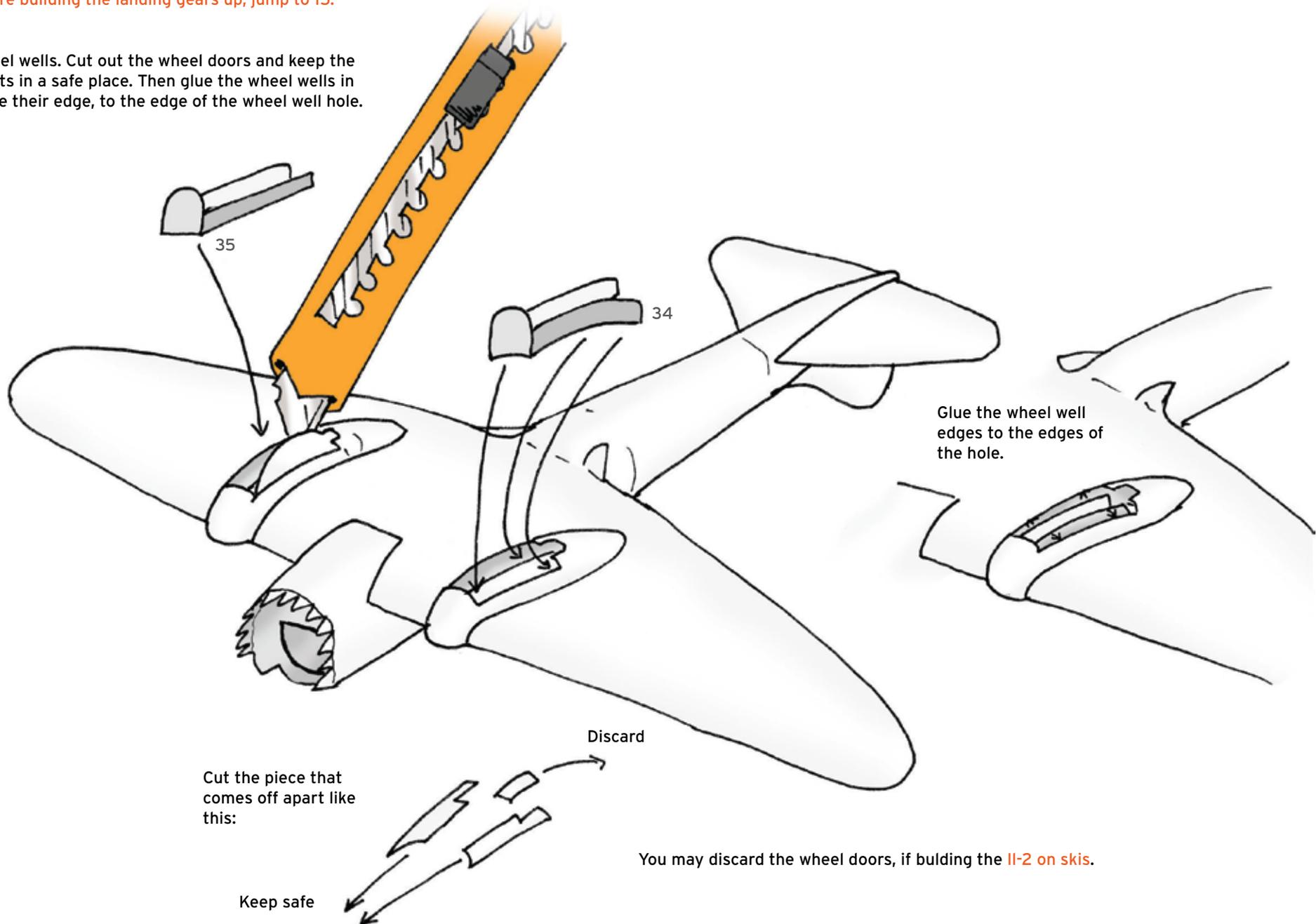


Rounden the middle part to a circle, so before attaching the front, **it will look like this:**



If you are building the landing gears up, jump to 15.

14. Wheel wells. Cut out the wheel doors and keep the sideparts in a safe place. Then glue the wheel wells in and glue their edge, to the edge of the wheel well hole.



Glue the wheel well edges to the edges of the hole.

Cut the piece that comes off apart like this:

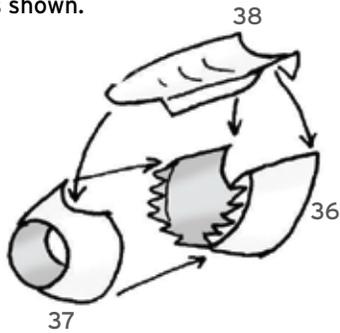
Discard

Keep safe

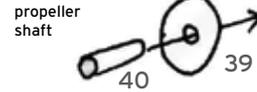
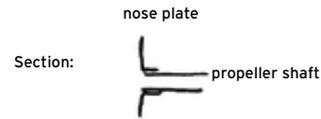
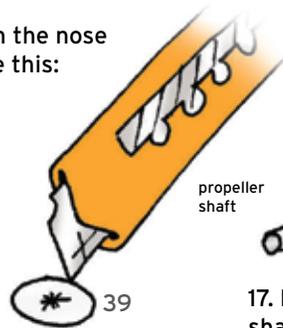
You may discard the wheel doors, if bulding the Il-2 on skis.

For the Il-2M-82, jump to 23

15. Glue together the cowling. Rounden all parts as shown.

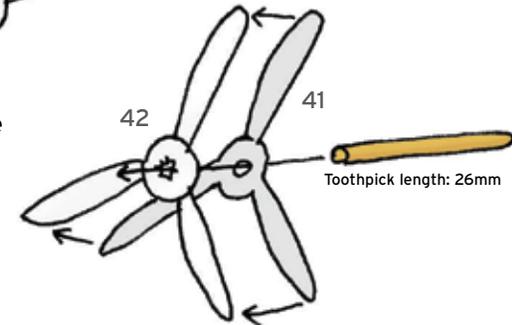


16. Cut in the nose plate like this:

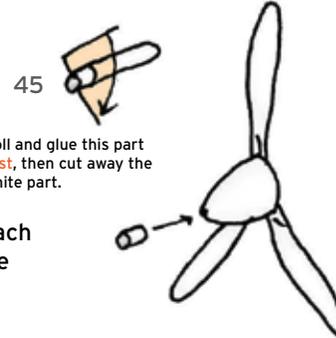
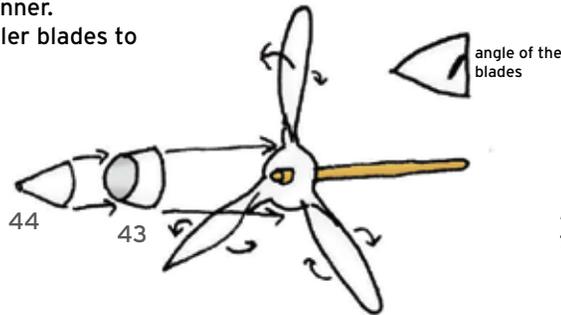


17. Roll and glue the propeller shaft, then glue it into the nose plate, so its end aligns with the surface.

18. Glue together the propeller. Glue it onto part of a toothpick



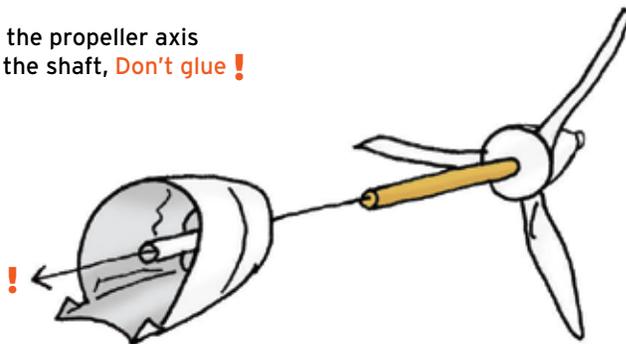
19. Build the Spinner. Bend the propeller blades to become angled.



Roll and glue this part first, then cut away the white part.

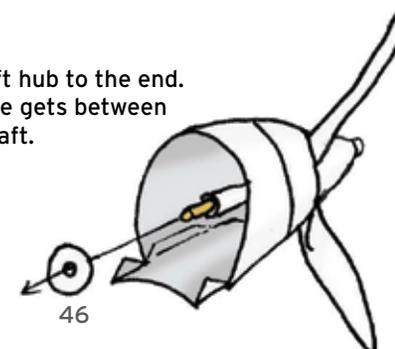
20. Build and attach the Starter nozzle

21. Push the propeller axis through the shaft, **Don't glue!**

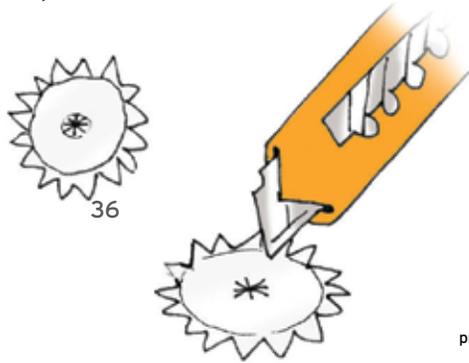


22. Glue the shaft hub to the end. Make sure no glue gets between toothpick and shaft.

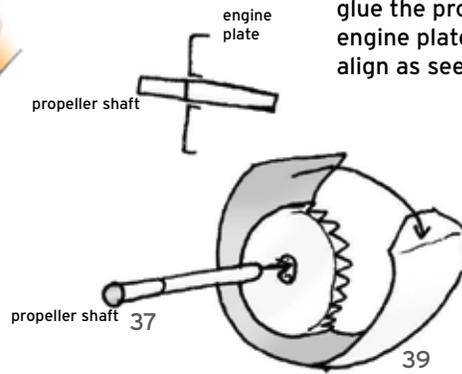
**Jump to 30**



23. The **M-82 Radial Engine**.  
Cut in the engine plate as shown.

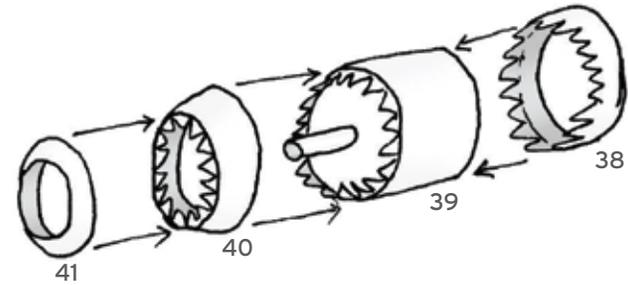


Section:

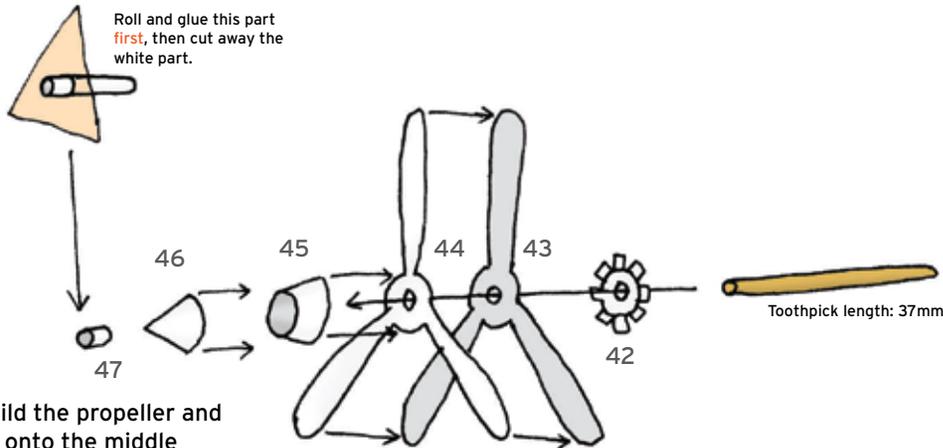


24. Roll the cowling around the engine plate and glue the propeller shaft through the engine plate, align as seen in the section

25. Glue together the four cowling parts.

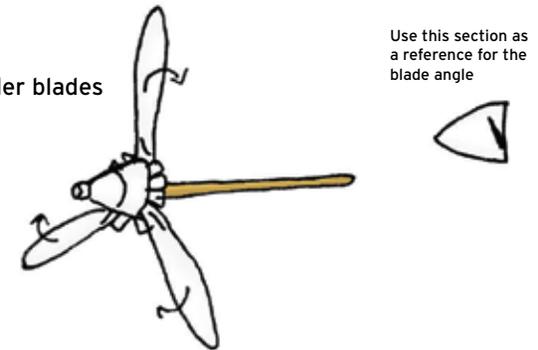


Roll and glue this part first, then cut away the white part.

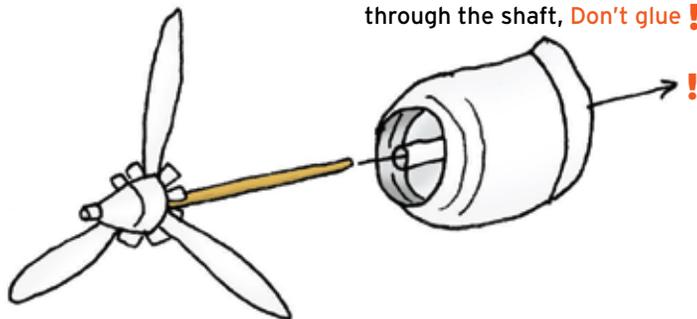


26. Build the propeller and glue it onto the middle part of a toothpick

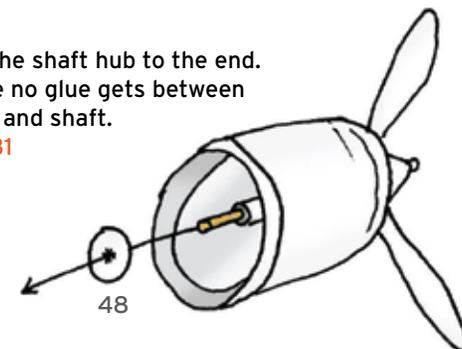
27. Bend the propeller blades



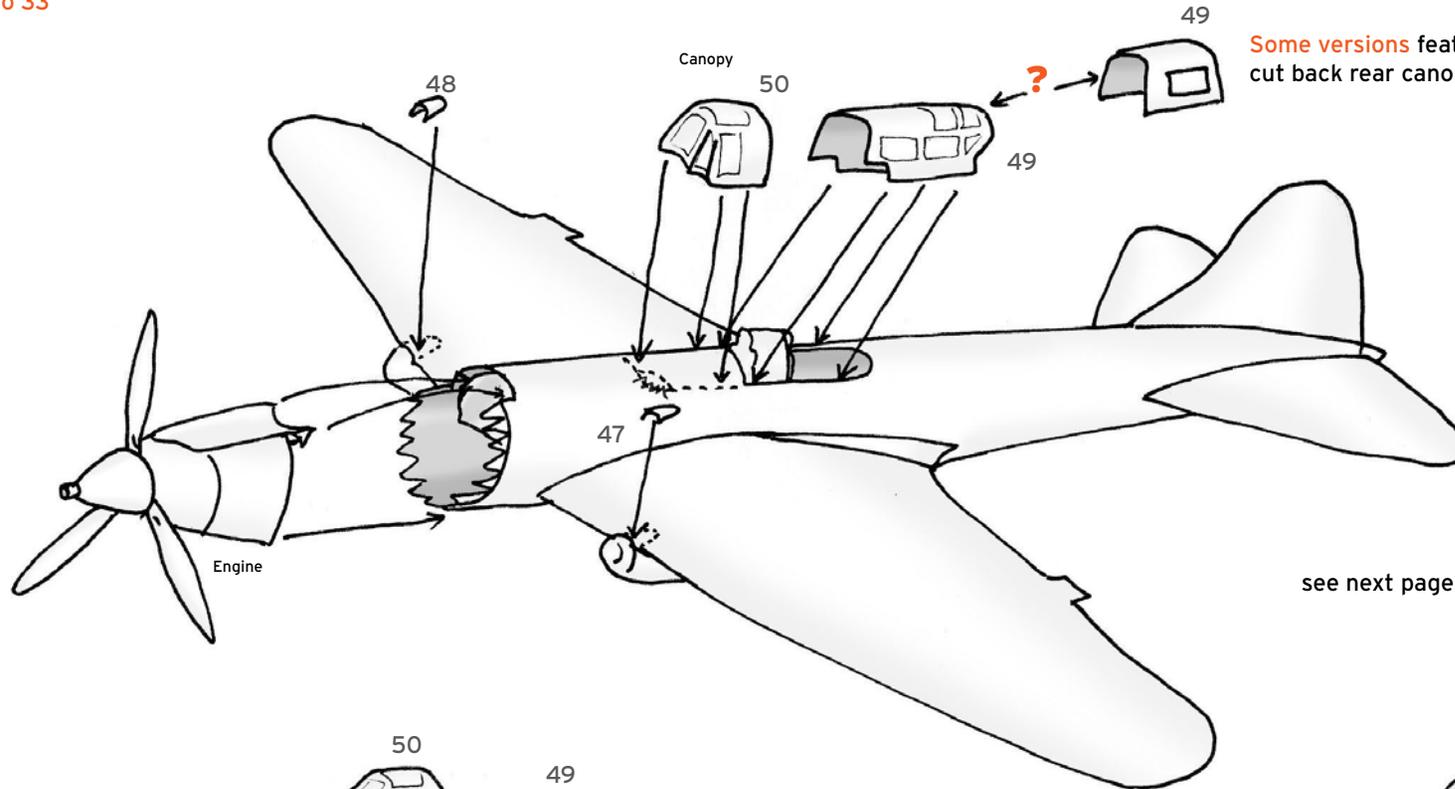
28. Push the propeller axis through the shaft, **Don't glue!**



29. Glue the shaft hub to the end. Make sure no glue gets between toothpick and shaft. **Jump to 31**



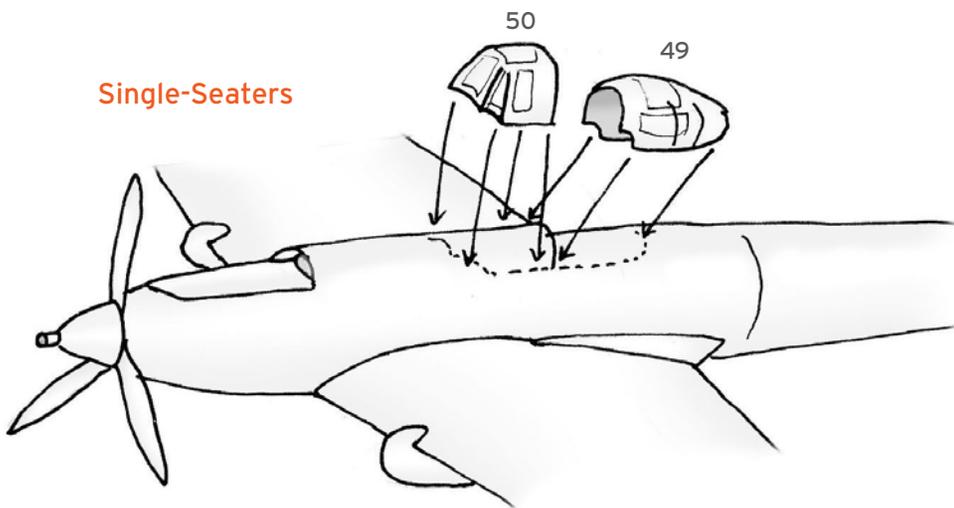
30. Install the engine and canopies.  
Install the upper parts of the landing gear nacelles  
[Jump to 33](#)



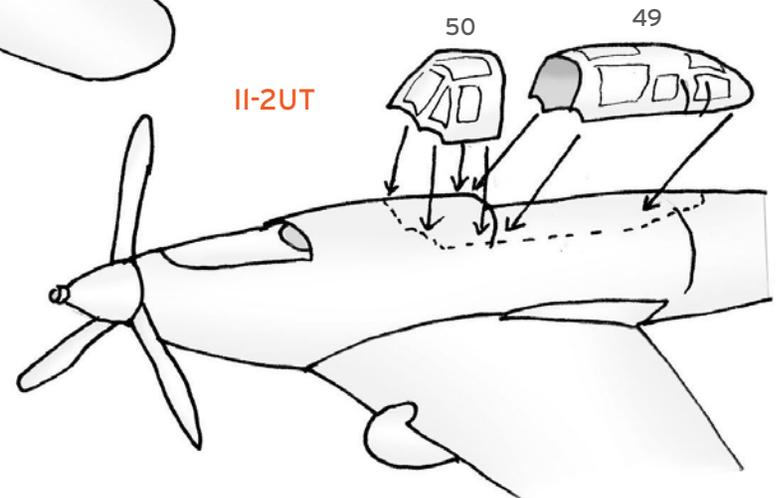
Some versions feature an alternate, cut back rear canopy.

see next page for the **Il-2BIS**

**Single-Seaters**

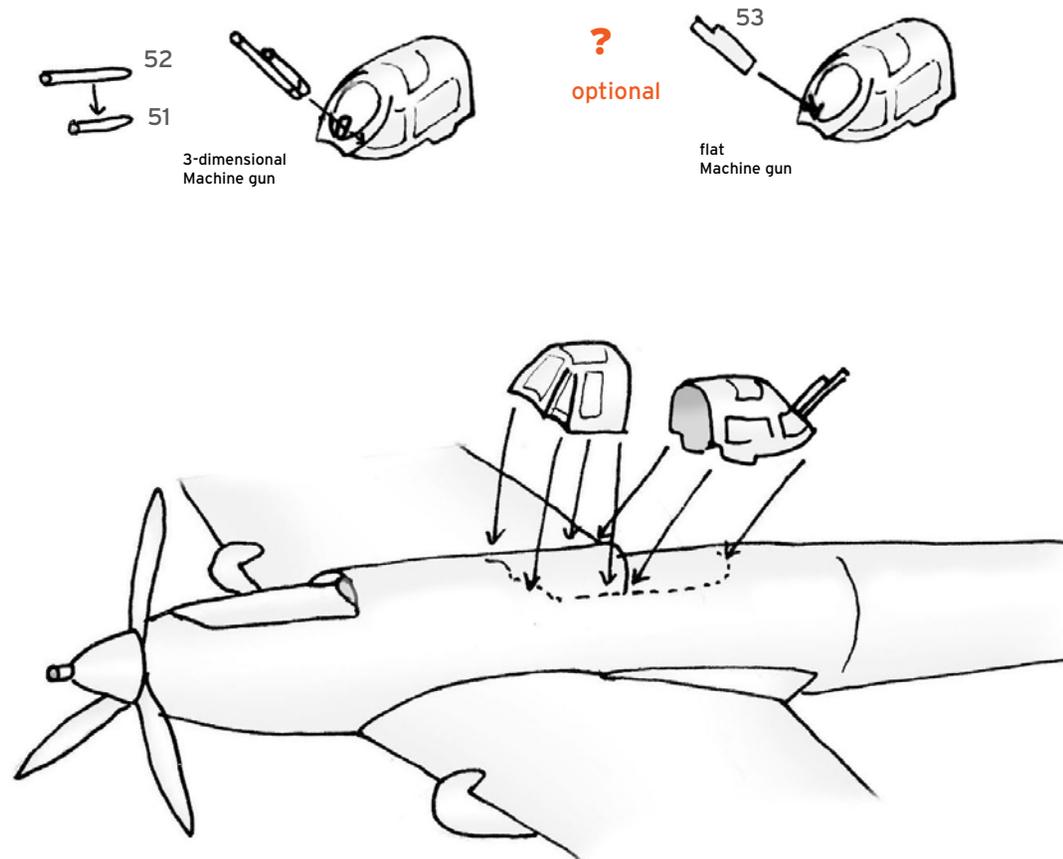


**Il-2UT**



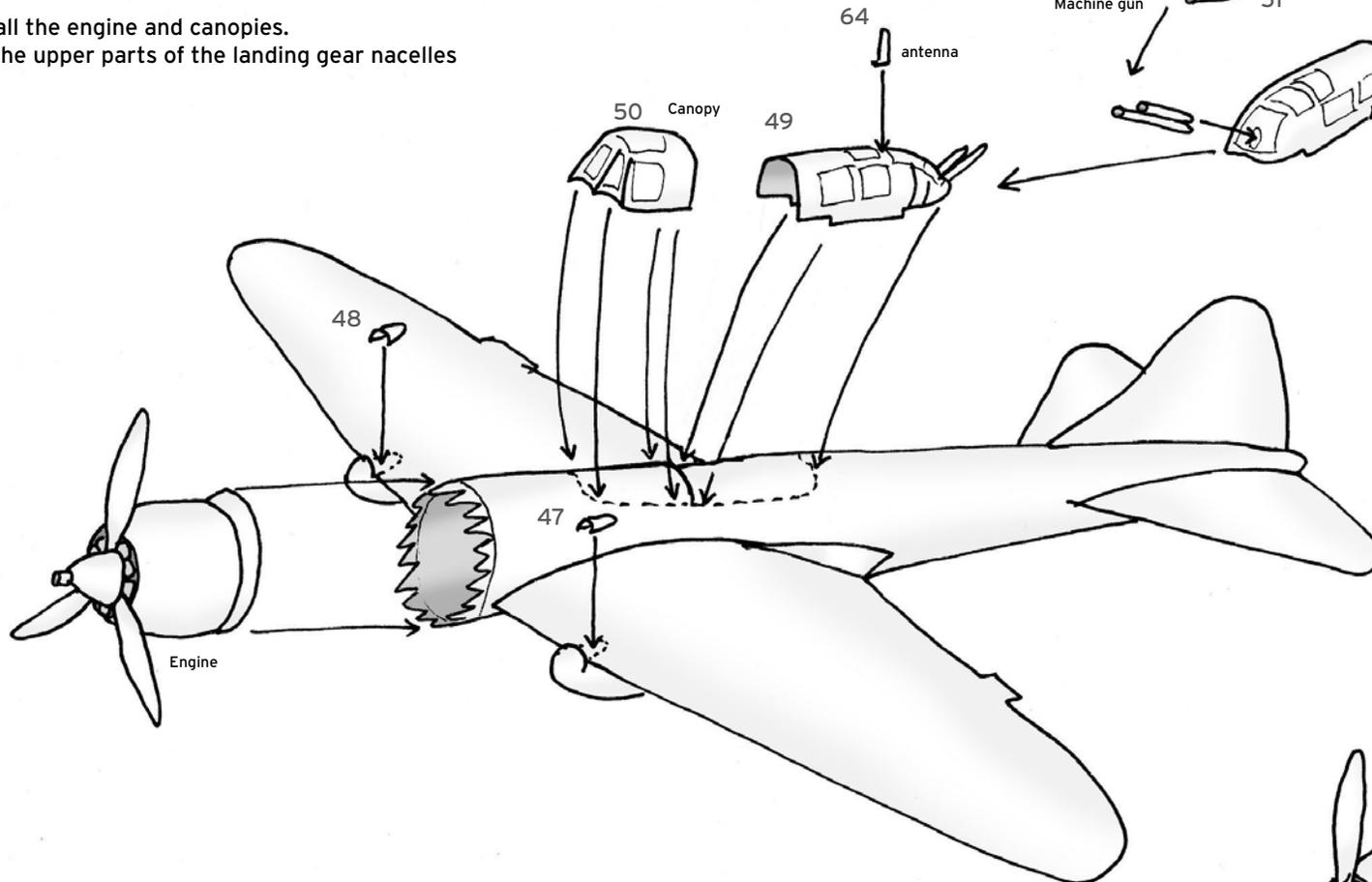
## Il-2BIS

For the Il-2 BIS, add the guns to the rear canopy, then glue both canopies to the fuselage

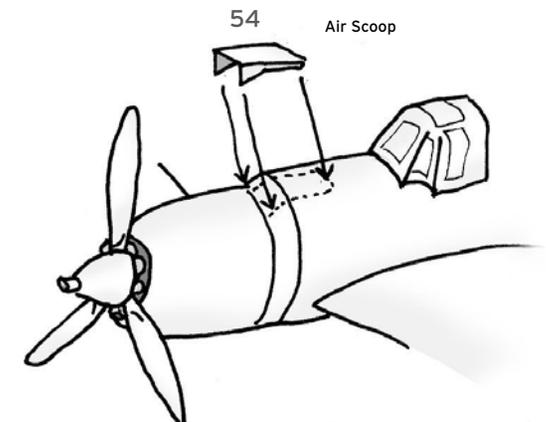
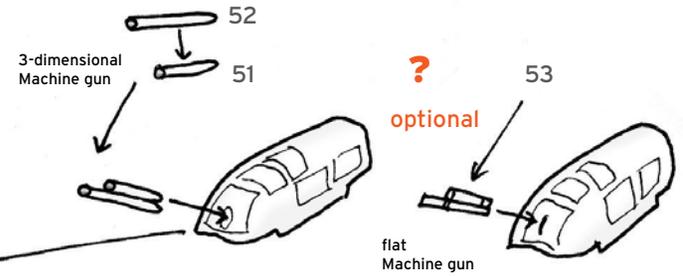


## Il-2M-82 only

31. Install the engine and canopies.  
Install the upper parts of the landing gear nacelles



For the Rear gun, you can chose between a flat or 3-dimensional version. Make the hole in the canopy accordingly



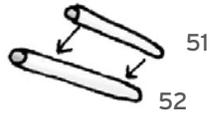
32. Attach the upper Air Scoop

For Single-Seater, Il-2UT and Il-2M-82 ignore this page

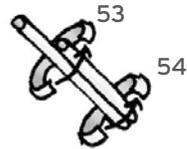
## 33. machine gun

### Detailed Gun

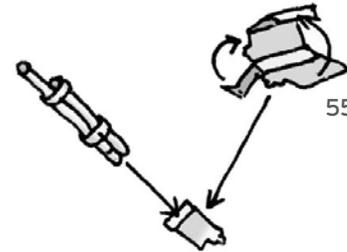
You can use the simplified gun's detail work as a reference.



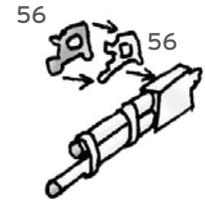
A. Glue together the barrels



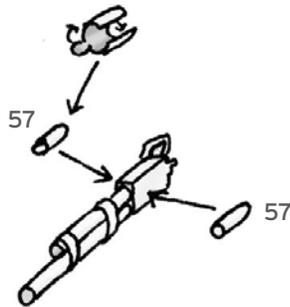
B. Wrap the connecting straps around them



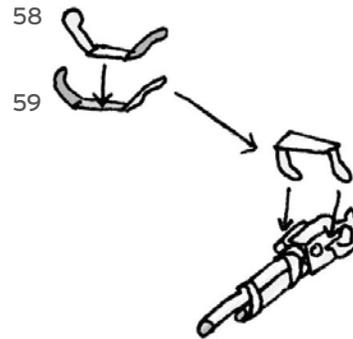
C. Build the ammunition box and glue the barrels into it.



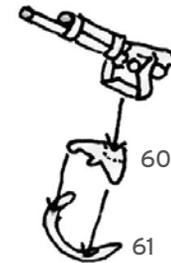
D. Glue together the handle parts and glue them on the right hand side.



E. Roll and glue the side bulges, then glue them on the two sides, aligned with the bottom.



F. Glue together the stand and glue it on the sides of the side bulges.



G. Glue the gun onto the aiming trailer and the aiming trailer on the swivel rail

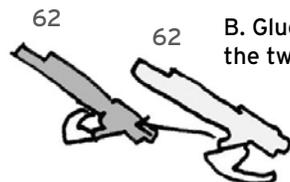


H. The detailed gun is finished.

### Simplified Gun



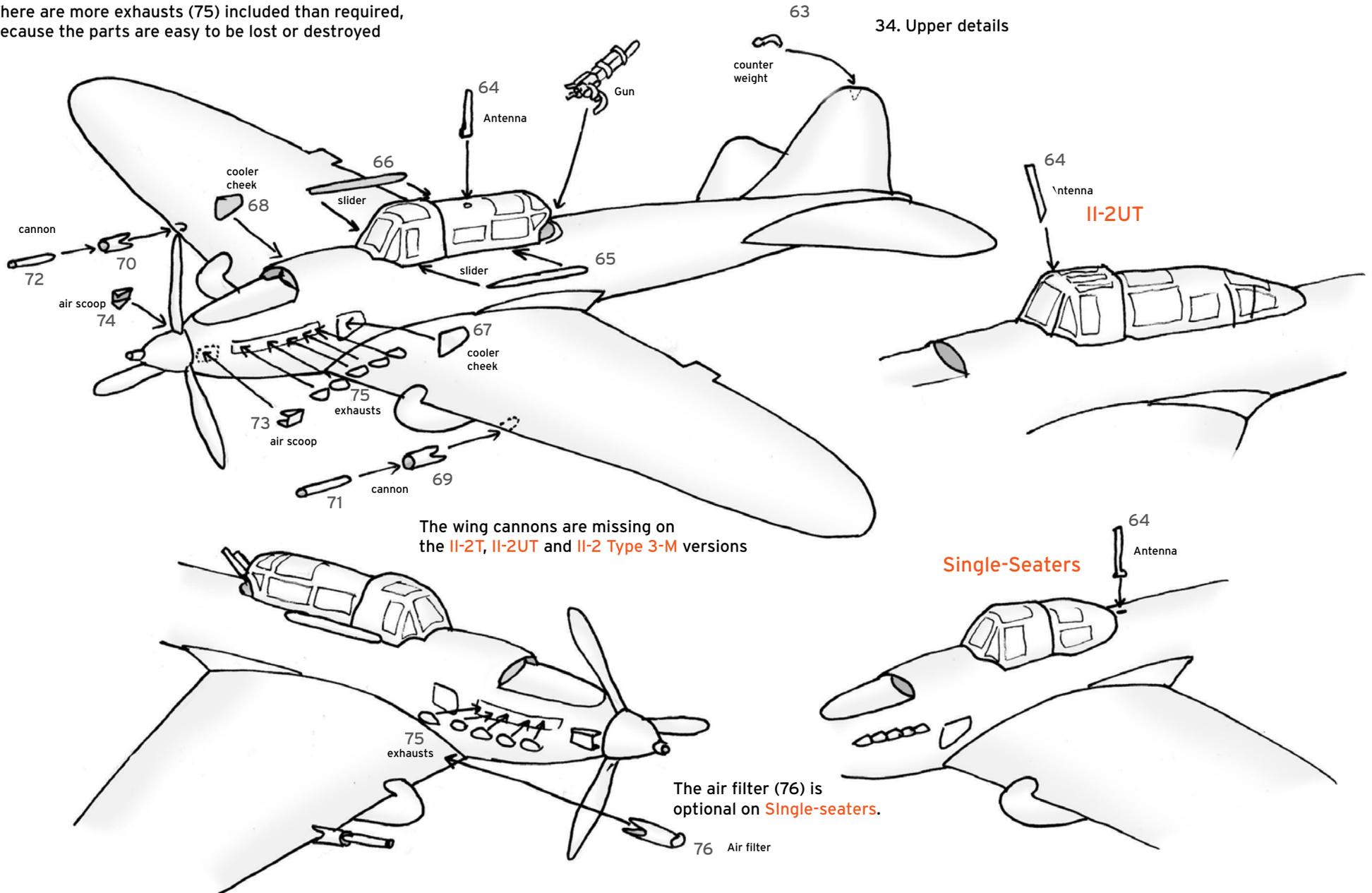
A. Score and bend off the swivel rail



B. Glue together the two parts

## 34. Upper details

There are more exhausts (75) included than required, because the parts are easy to be lost or destroyed



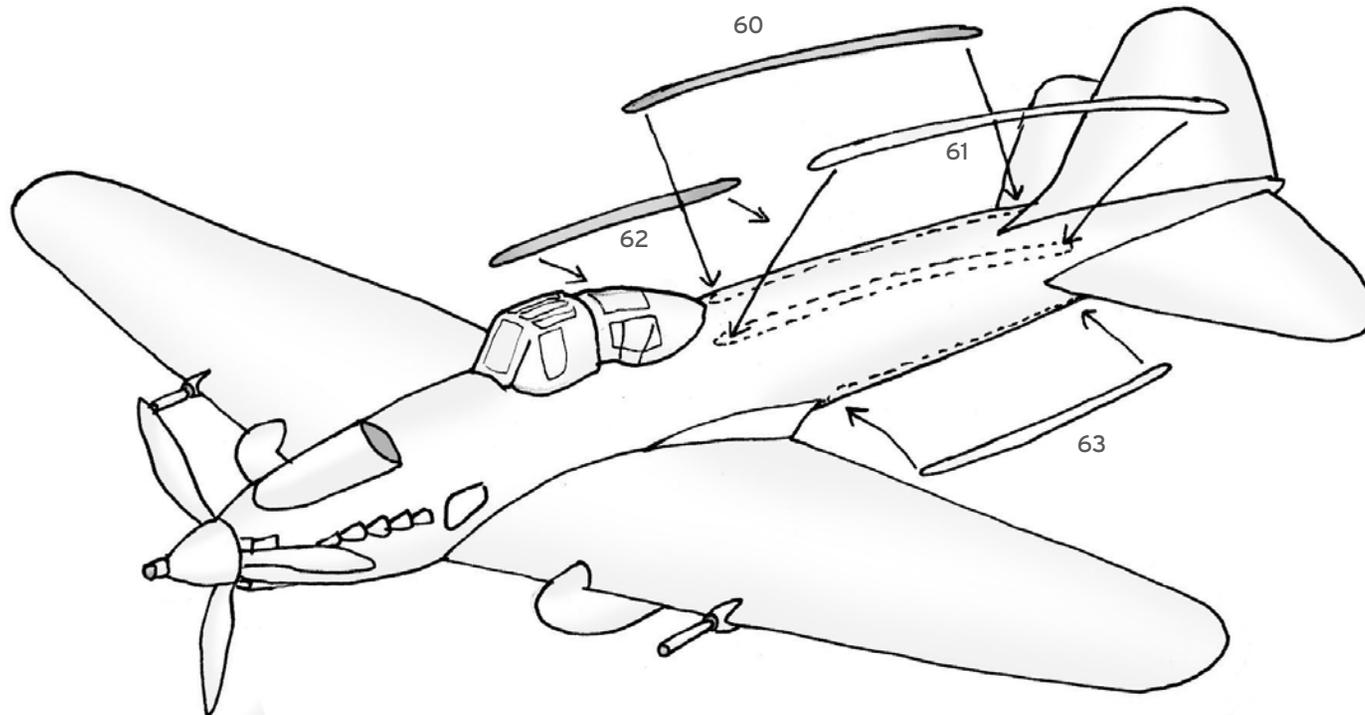
The wing cannons are missing on the II-2T, II-2UT and II-2 Type 3-M versions

The air filter (76) is optional on Single-seaters.

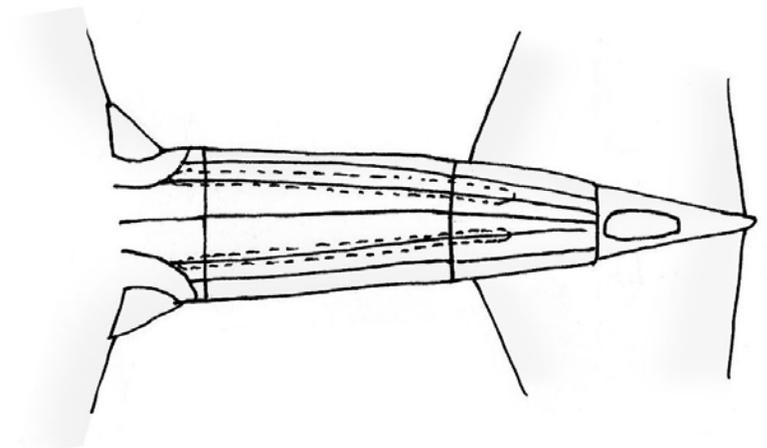
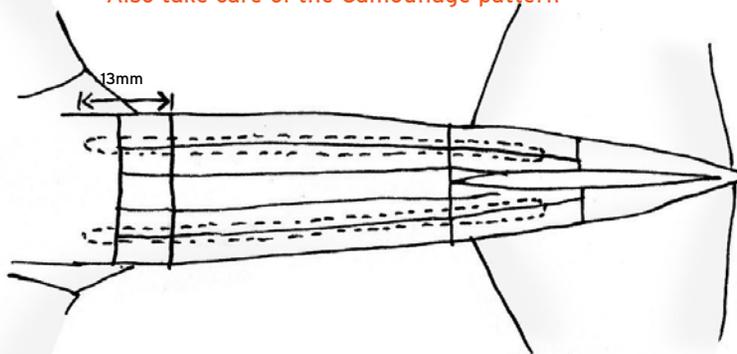
76 Air filter

This step is for the Hungarian Air Force and For Ostradnov Versions only.

## 35. Reinforcement ribs

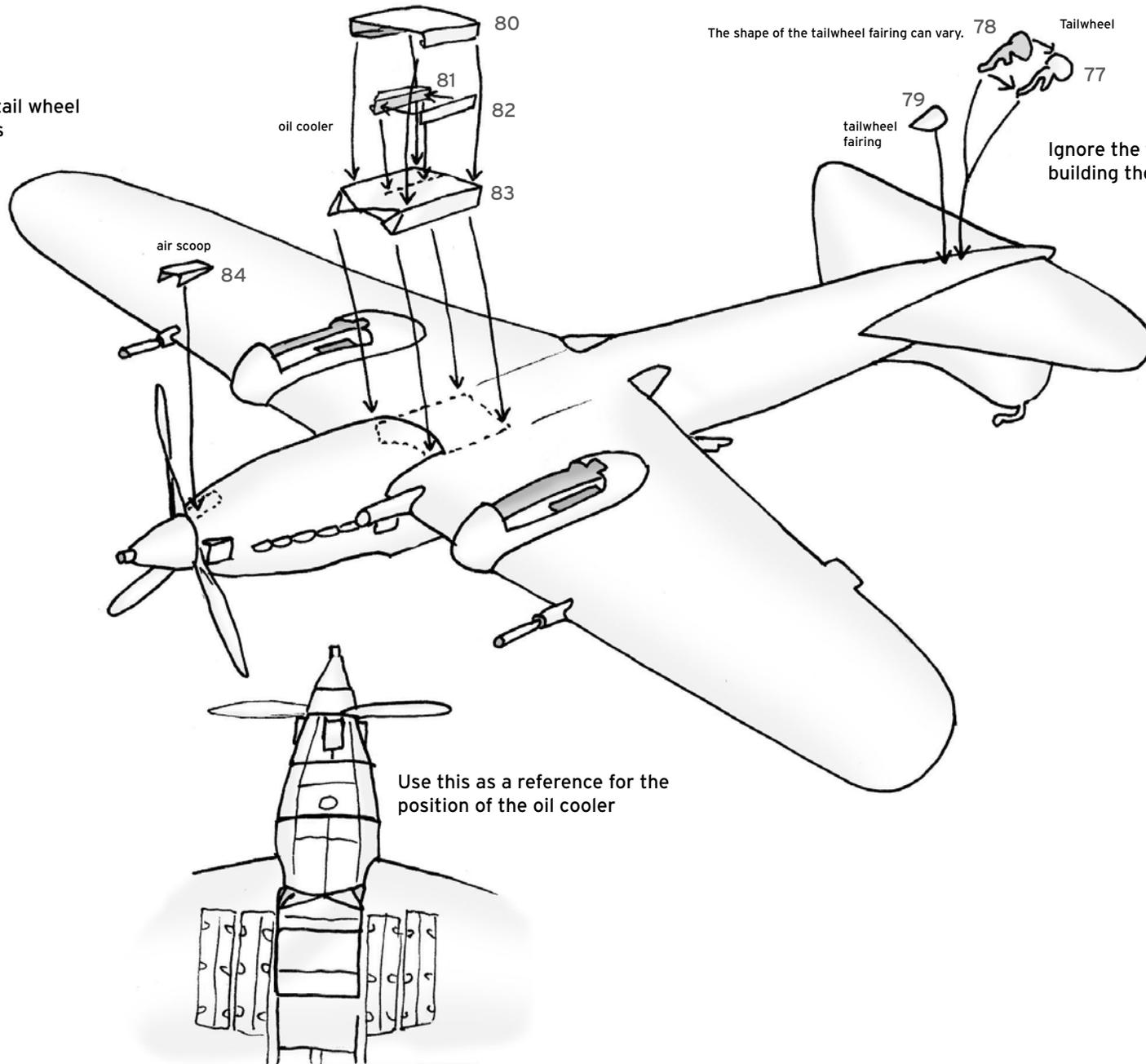


Use these views as a reference for the position of the ribs.  
Also take care of the Camouflage pattern



## 36. Lower Details

The **Il-2M-82** has only the tail wheel and fairing. The other parts can be ignored for it.



The shape of the tailwheel fairing can vary.

Ignore the tailwheel, if you are building the **Il-2 on skis**.

Use this as a reference for the position of the oil cooler

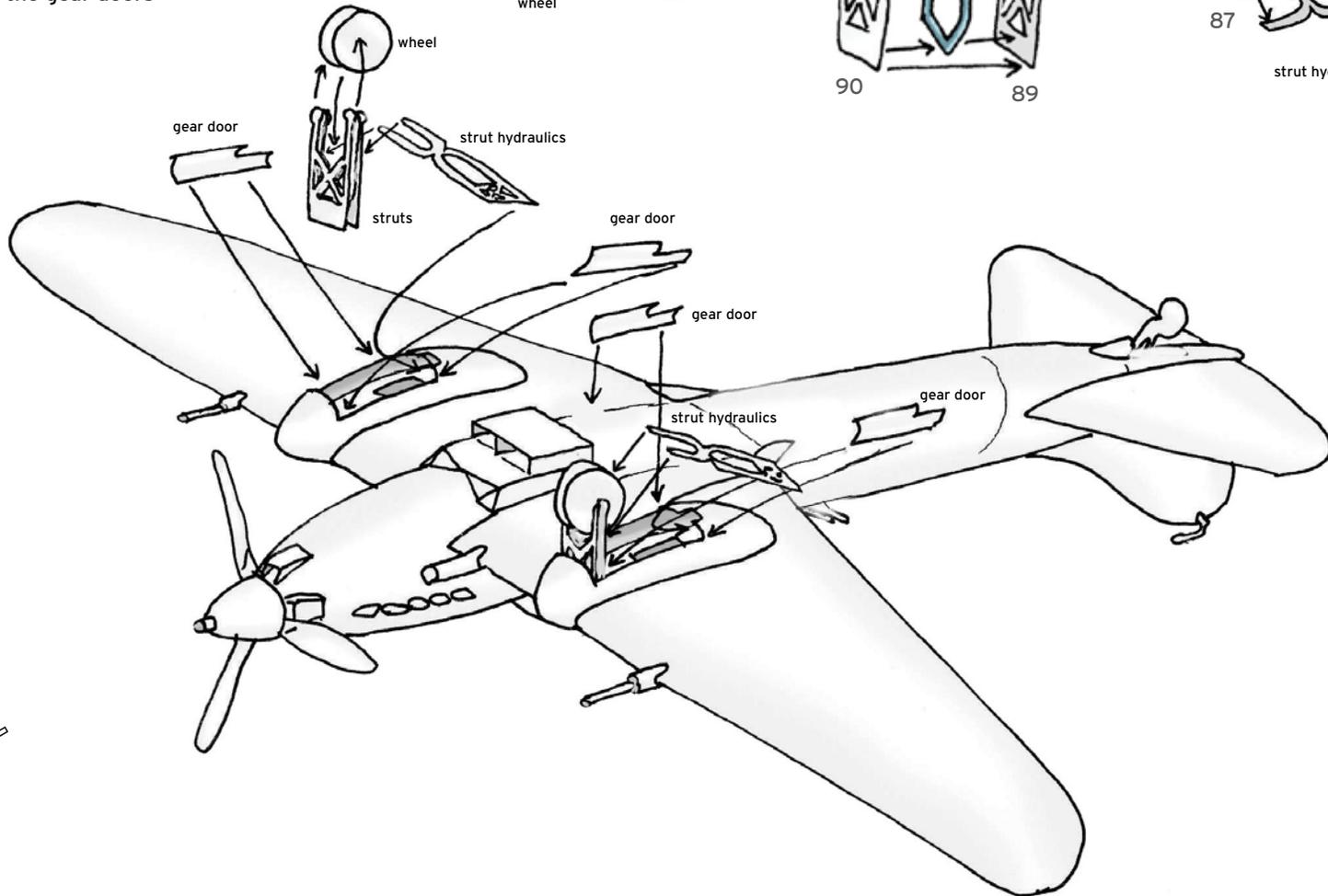
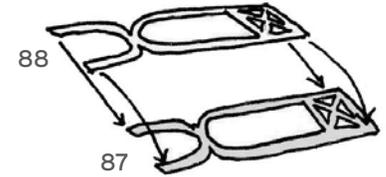
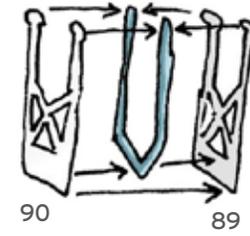
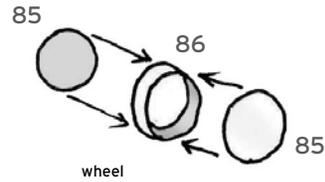
## 37. Landing gear with wheels.

Ignore this step, if you don't build them.

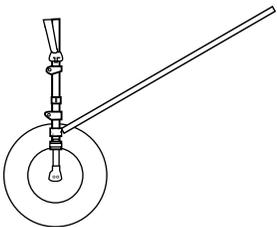
For enforcement of the landing gear struts, cut off the outer ring of a paperclip and glue it in between



Glue the landing gear inner shades (91) onto the back of the parts from step 14 for the gear doors

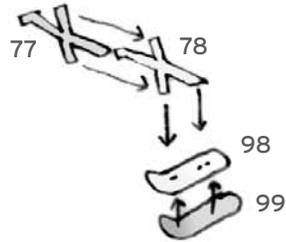


struts section:

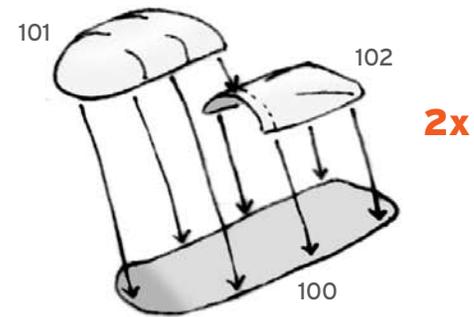


If you are **not building the Il-2 on skis**, jump to 44

38. Build the rear landing ski.

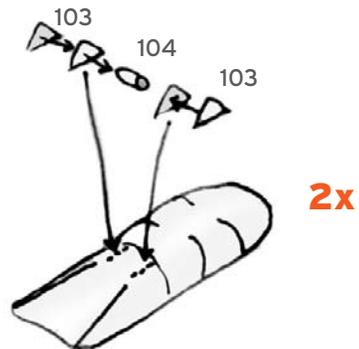


39. Build the main skis

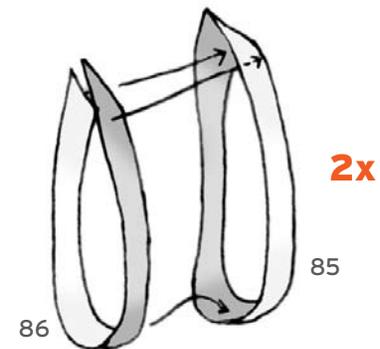


If you are building the **Il-2 on skis** with landing gear up, jump to 42

40. Build the ski hinge axis



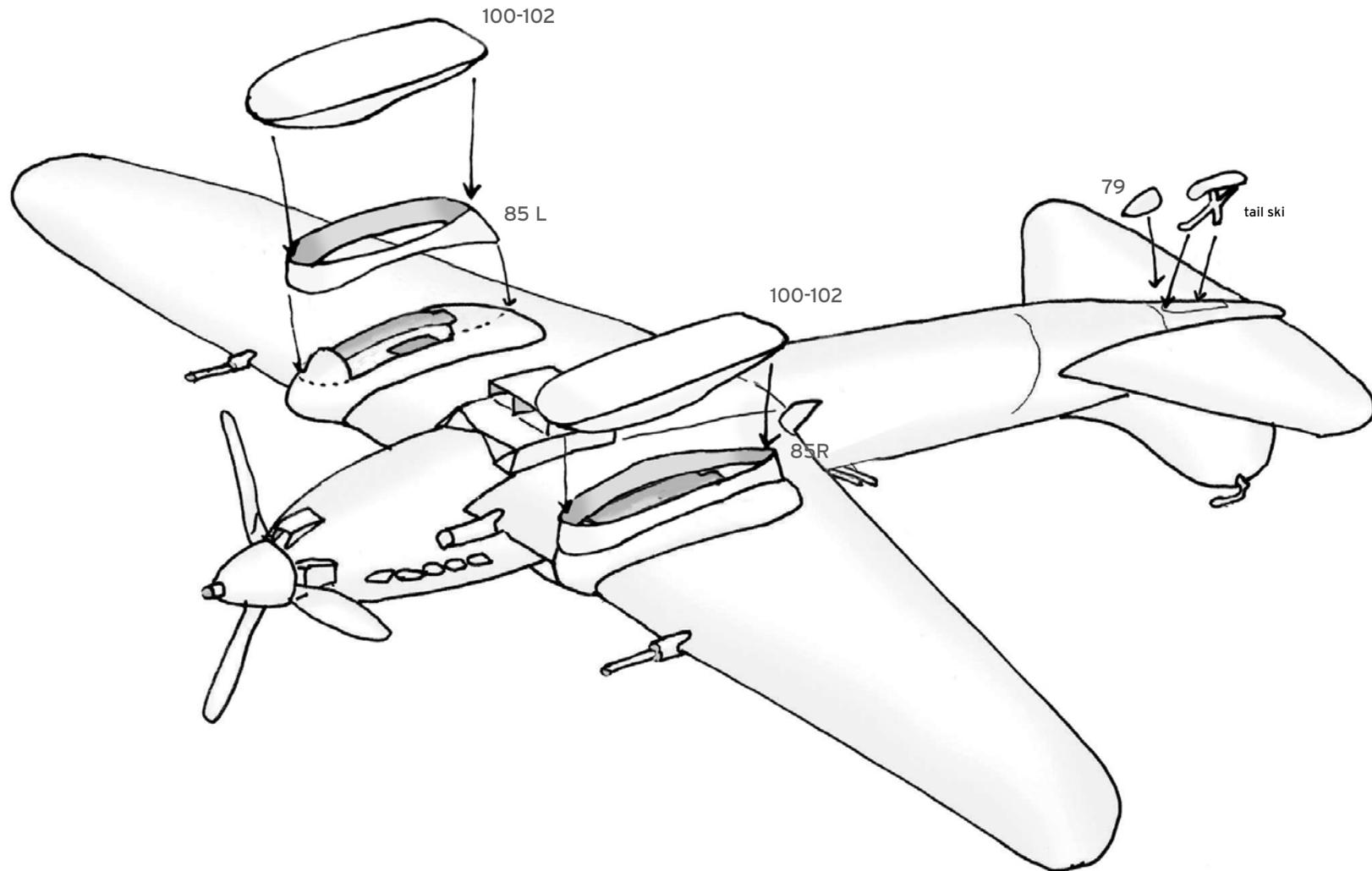
41. Glue the inner sides into the ski well fairings



L versions are for port  
R versions are for starboard

## 42. Landing gear with skis (raised)

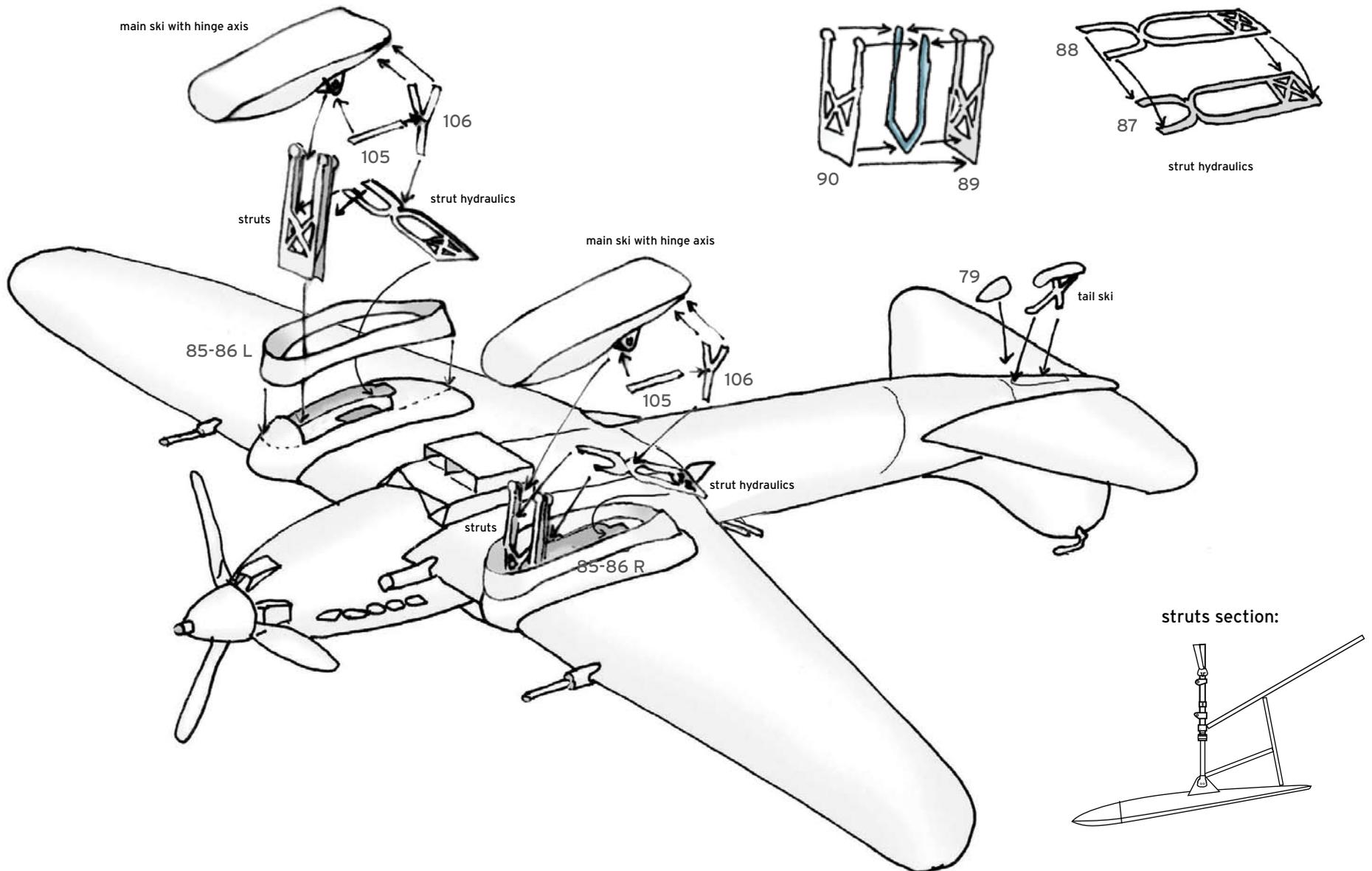
Jump to next step for lowered ski landing gear.



## 43. Landing gear with skis (lowered)

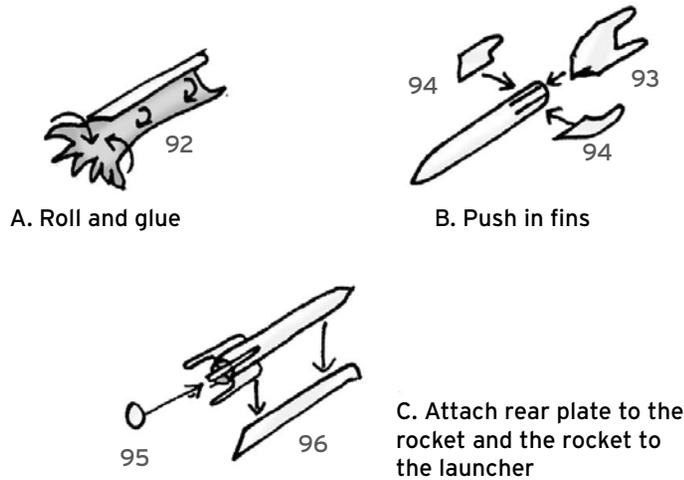
Ignore if you built the previous step

For enforcement of the landing gear struts, cut off the outer ring of a paperclip and glue it in between

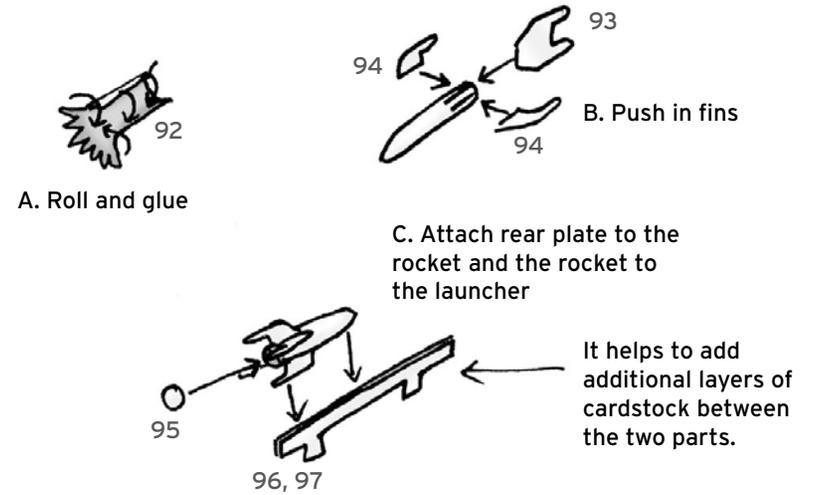


## 44. Armament

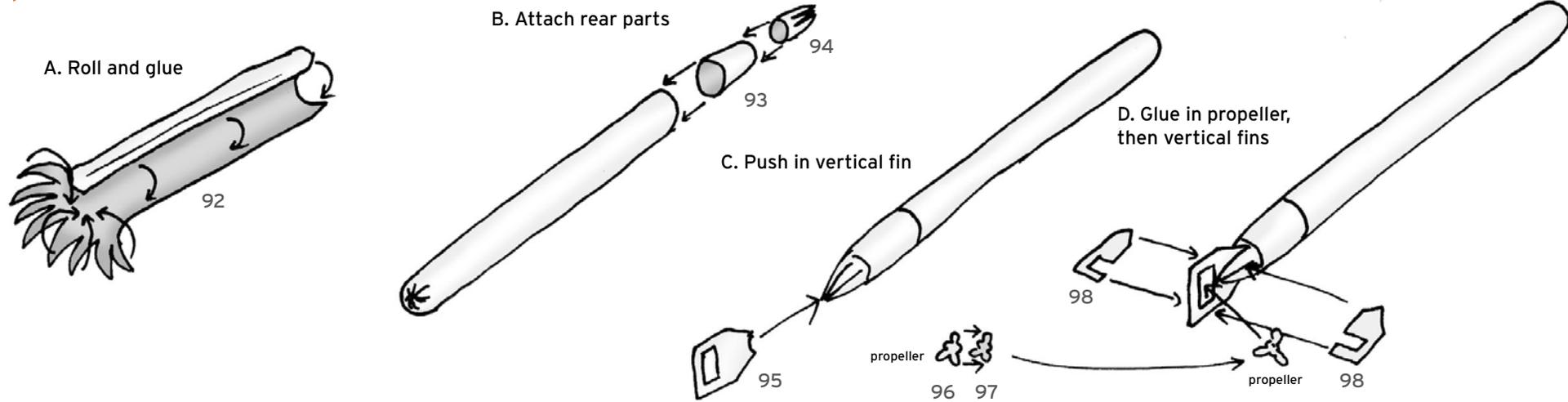
### RS-132 Rockets (8x)



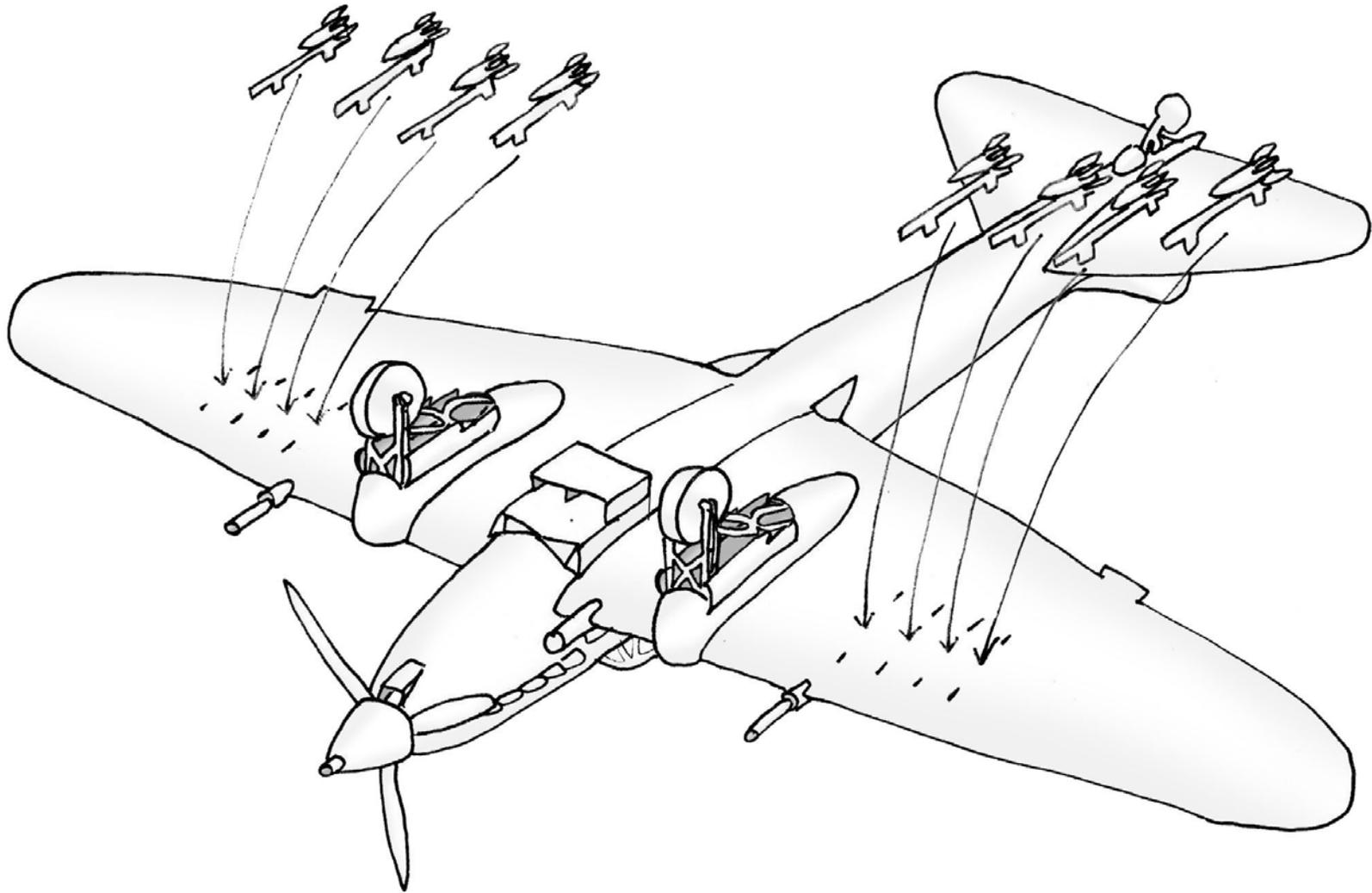
### RS-82 Rockets (8x)



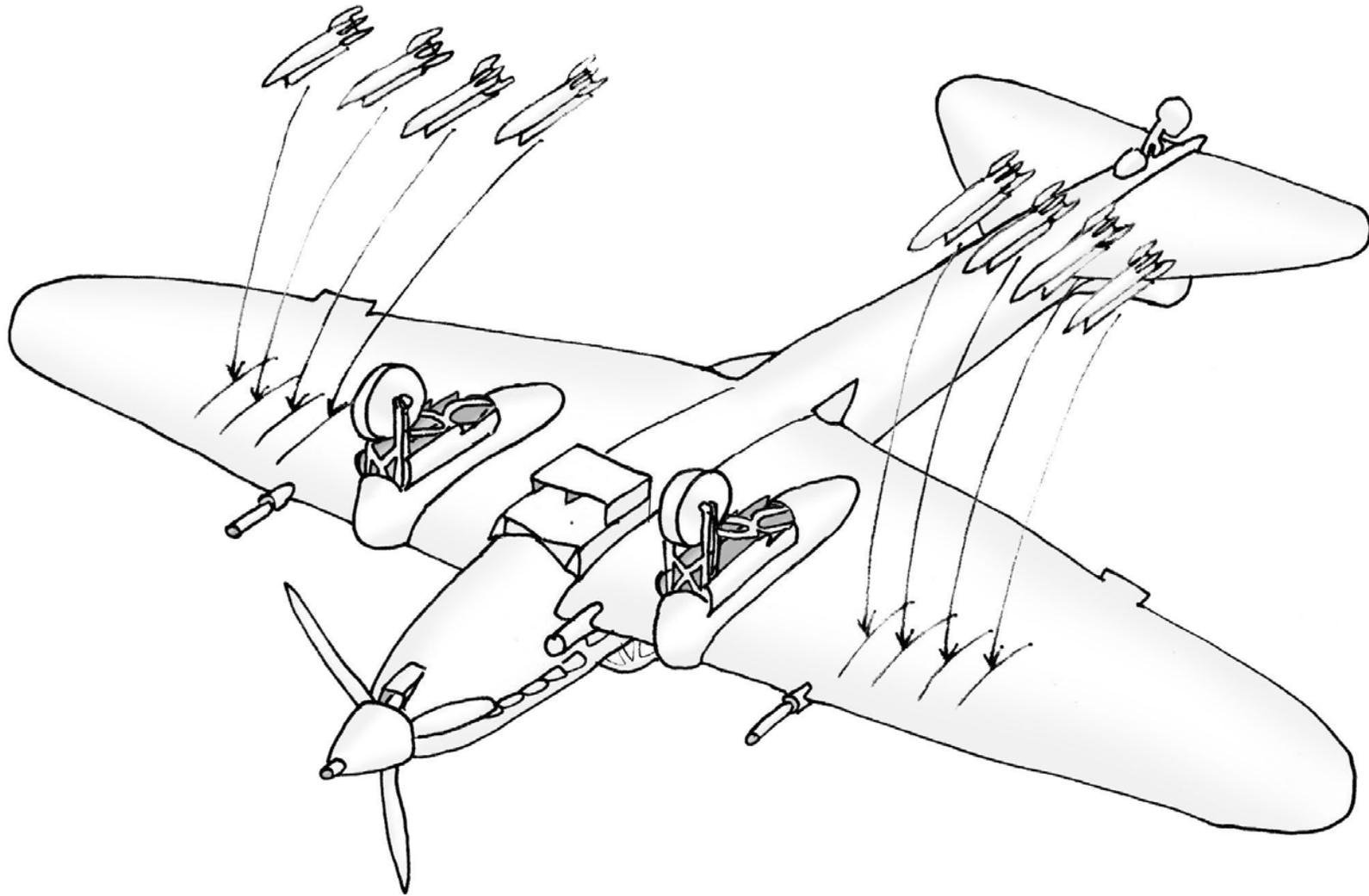
### Torpedo (II-2T)



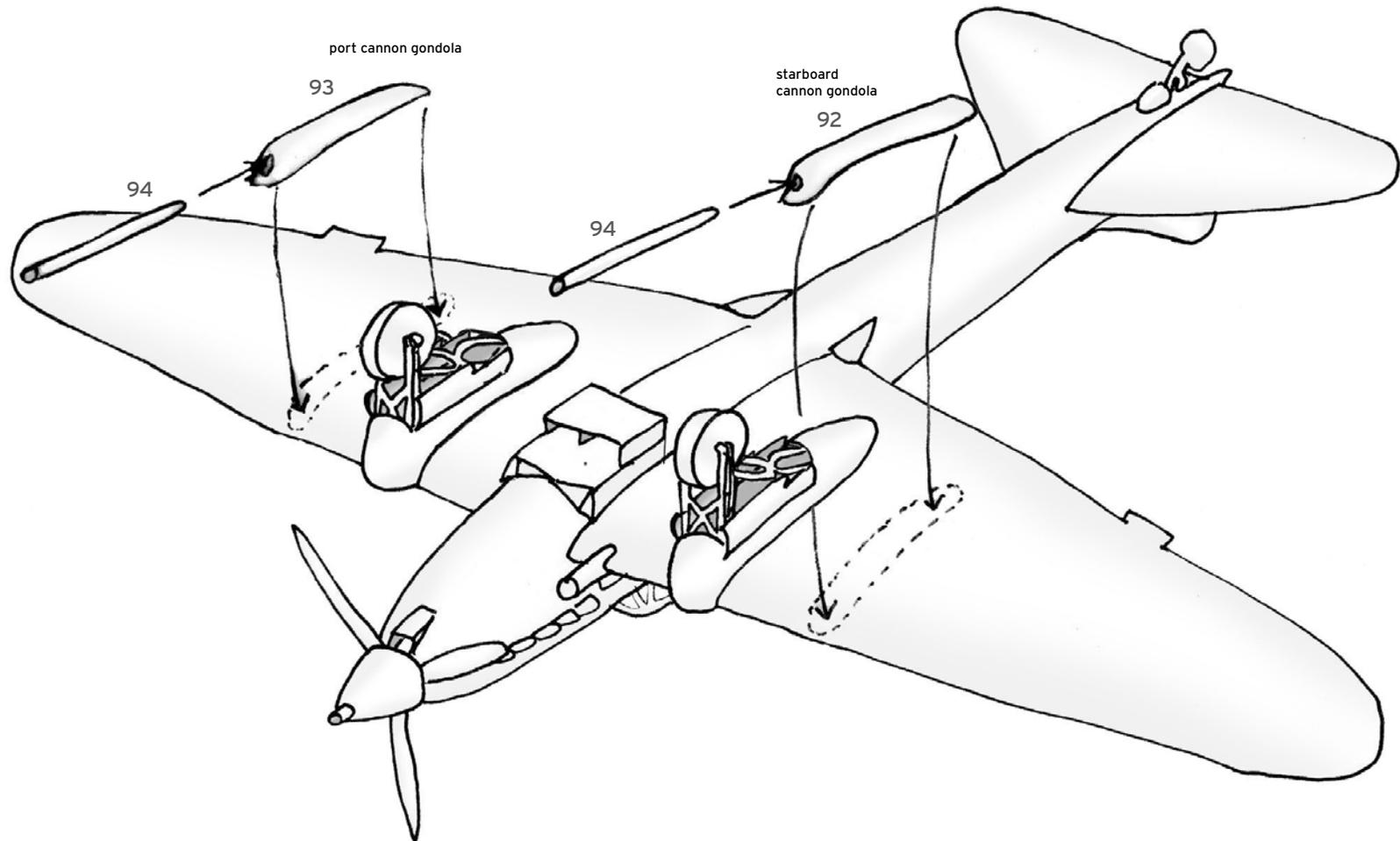
## 45. Installation of RS-82 Rockets



46. Installation of RS-132 Rockets

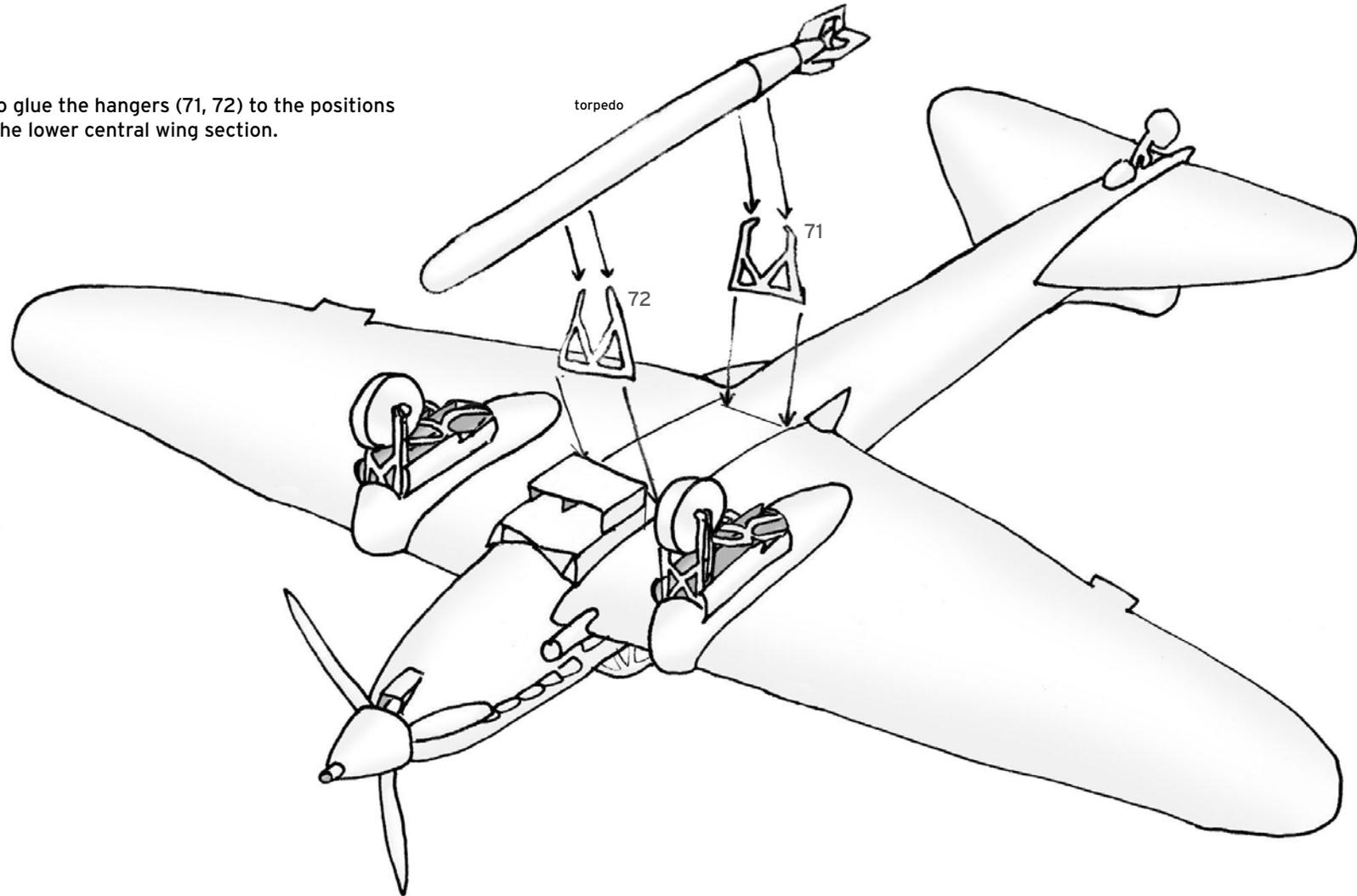


## 47. Installation of NS-37 Cannons (Il-2 Type 3-M)



## 48. Installation of the Torpedo (II-2T)

Make sure to glue the hangers (71, 72) to the positions marked on the lower central wing section.



## 49. Installation of Bombs (Il-2I Fighter)

The Il-2I can not carry rockets, but it retains pylons to carry bombs. Two bombs are included to fill the sheets, but are highly optional as the fighter would not carry them on fighter missions

fold fins to a star, then glue to a cross section



then build the rest of the bomb

