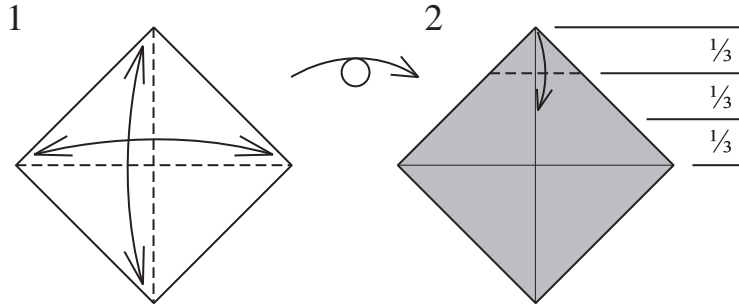
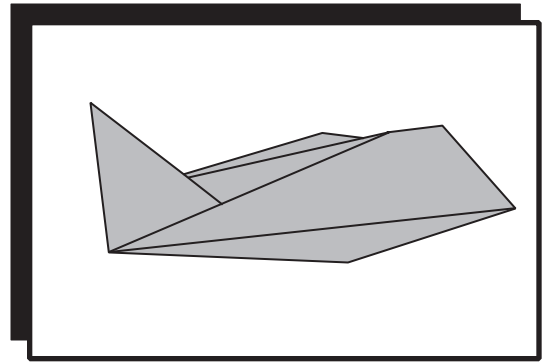


Space Shuttle

An example of a Lifting Body

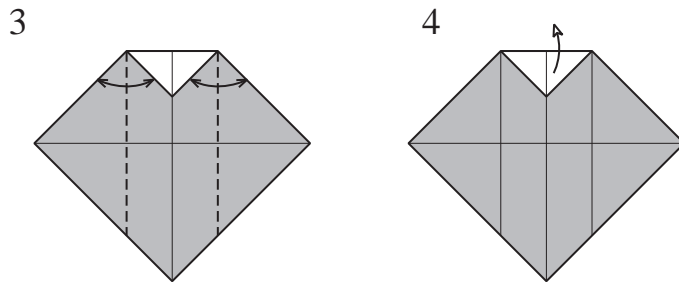
By Perry Bailey ©1998

More fun than weight lifting or body building, here's your chance to build a "Lifting Body."



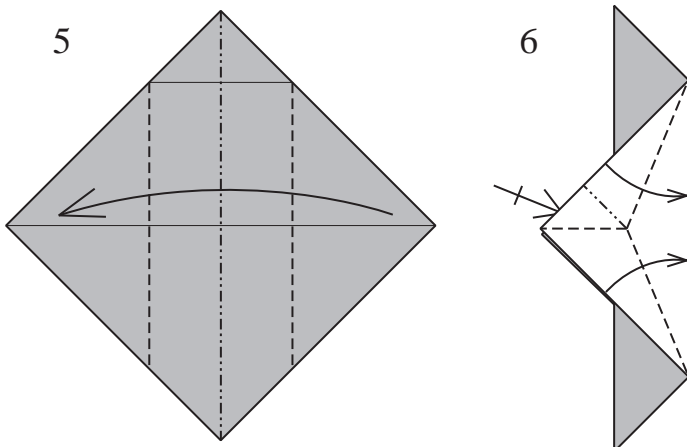
1 White-side up. Valley-fold and unfold diagonally in half. Turn over.

2 Valley-fold.



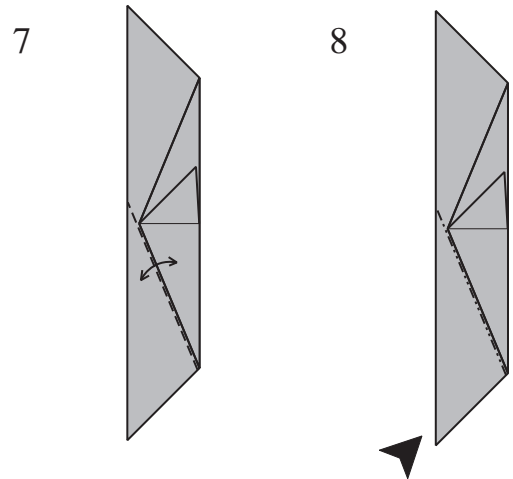
3 Valley-fold and unfold.

4 Unfold.



5 Pleat.

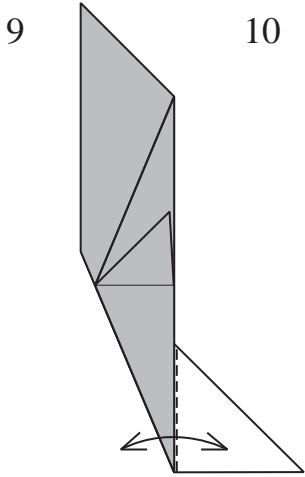
6 Rabbit-ear. Repeat behind.



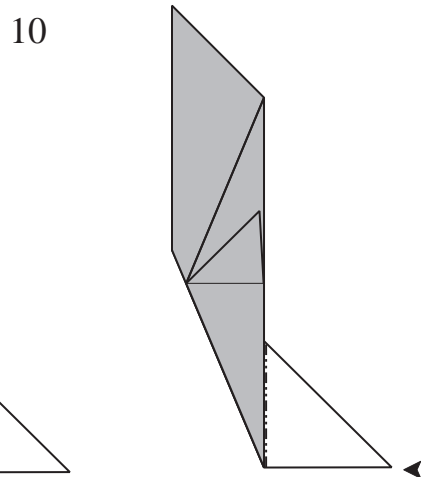
7 Valley-fold and unfold.

8 Reverse-fold.

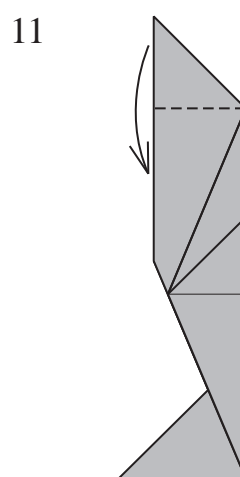
A smidgen of science to go with this model. In a traditional airplane, all of the lift is supplied by the wings, but as speed increases this puts more and more stress on the wings. The answer as was determined years ago is to use a "lifting body". That is a plane (or as in this case a space shuttle) that maximizes the strength of the structure by using the body of the shuttle itself as the wings. It has not been used heavily in the aviation world, due to politics, but it was the only chance for a ship that needed to re-enter an atmosphere from orbit. A true lifting body would by its nature be very stable as it comes down but unfortunately not very maneuverable at high speed. NASA solved this problem by using a large rudder fin atop the vehicle. This stabilized the side to side motion, making it as stable as the forwards and up and down motions. The only other problem was to find a long enough strip to land the shuttle because of the forward speed required to keep it aloft. The Space Shuttle was the end of a long line of experiments in this type of flight. For those who have seen the old TV series the "Six Million Dollar Man" the scene in the beginning was a real crash of one of the early lifting bodies designed by NASA, which were flown up by airplane and then dropped. Our current space shuttle design was the winner.



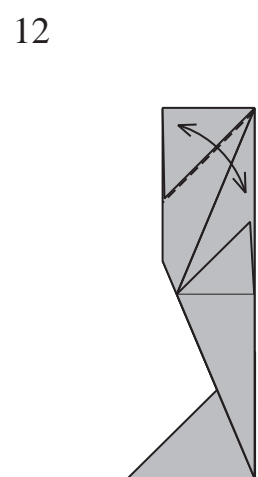
9 Valley-fold and unfold.



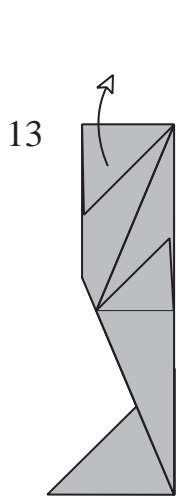
10 Reverse-fold.



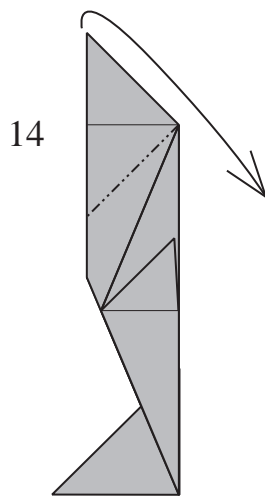
11 Valley-fold.



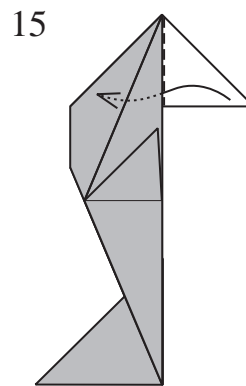
12 Valley-fold and unfold.



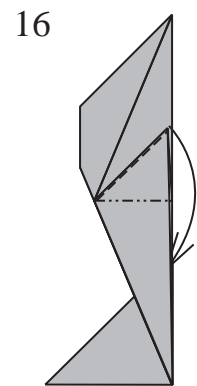
13 Unfold.



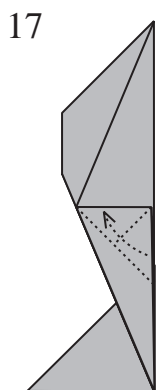
14 Reverse-fold.



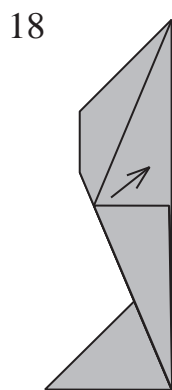
15 Valley-fold, inserting the flap inside the space ship.



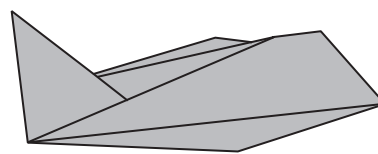
16 Reverse-fold the rabbit ear.



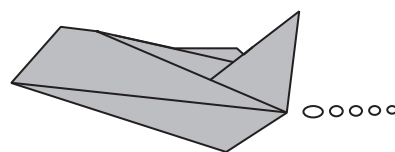
17 Reaching underneath the front layer, valley-fold the rabbit ear.



18 Swing the wings down so that they stick out as wings often do.



19 The Space shuttle is all set ready for take off, I mean, "body lifting!"



Even more than just facing the other way, this variation has longer wings!

EDITOR'S SLIGHT VARIATION

(6)



For this longer winged variation, redo the model, changing step 6 to a simple valley fold, and skip steps 16 and 17.