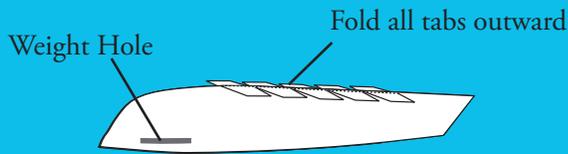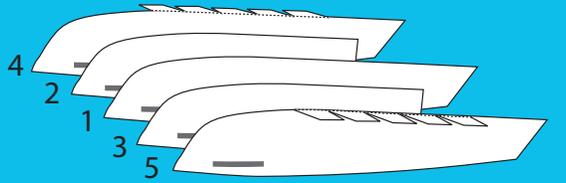# Assembling the Swift Plane

Tools:
- Scissors: to cut out the parts
- Blade/knife: to cut out weight hole
- Ruler: to fold the tabs and make creases
- Glue: to glue the parts
- 1 Dime: to add weight to the plane

Weight Hole

Fold all tabs outward

Fuselage

Fig.1

1 Roughly cut out each part. Go back and trim each part carefully. You may want to write the part number on the back after cutting them out.

2 Cut out the *weight hole* on each part.

3 Fold all tabs outward (you may use the ruler to help).

4 Glue 1 through 5 together in the order indicated below (Fig.1):
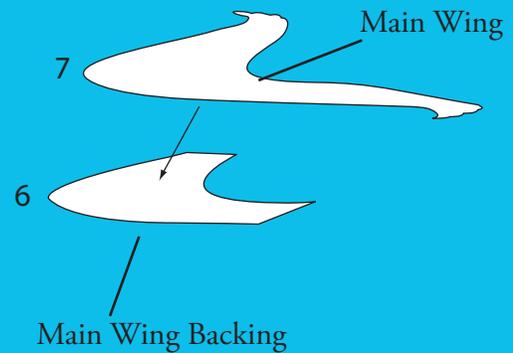
1 and 2
1+2 and 3
1+2+3 and 4
1+2+3+4 and 5 = *Fuselage*

Main Wing

Main Wing Backing

Fig.2

5 Align and glue the main *wing backing* (6) under the main *wing* (7)(Fig.2). Check all edges while gluing. They should snugly fit together.
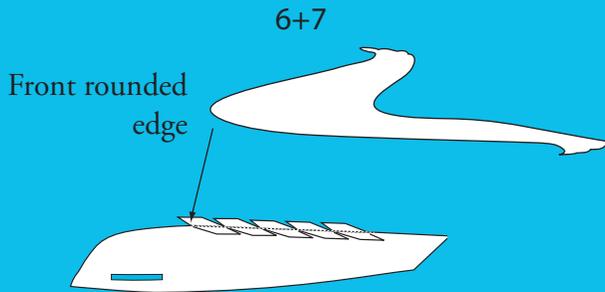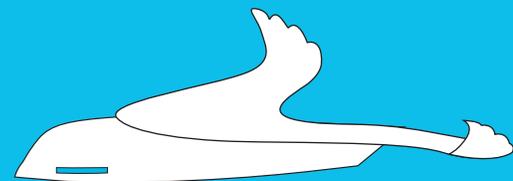

6+7

Front rounded edge

Fig.3

6 Glue 6+7 to the *fuselage* (Fig.3). Align the front rounded edge of the wing assembly to the edge of the *fuselage* tabs, near the front (Swift's head). Use the line on the *wing backing* to align the *fuselage* with the wing assembly.
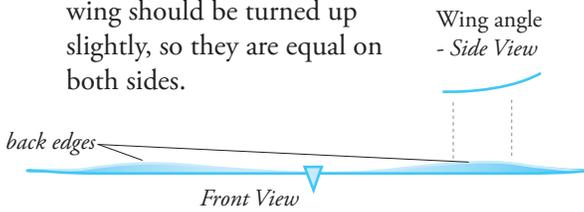

Swift Plane Assembled

1 Getting Ready to Fly

A. The back edges of the main wing should be turned up slightly, so they are equal on both sides.

Wing angle - Side View

back edges

Front View

B. Then, bend the tip of the wings upward to approximately 45 degrees at the line where the wing backing ends.

Front View

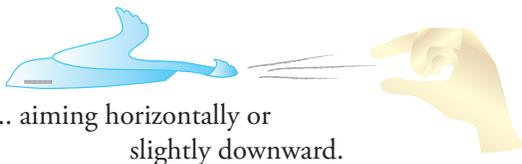**C.** Place a dime through the *weight hole*.
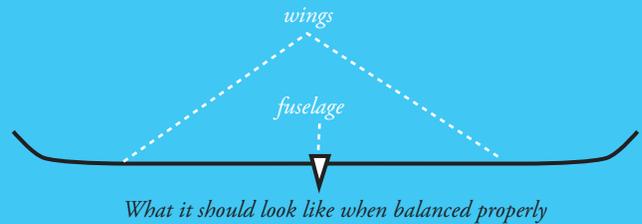
2 How to Fly Your Swift Plane

Hold the plane so it balances on your fingers
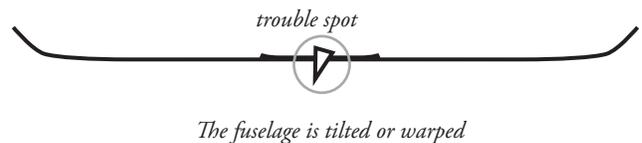
Throw the plane **very gently** forward ...

... aiming horizontally or slightly downward.
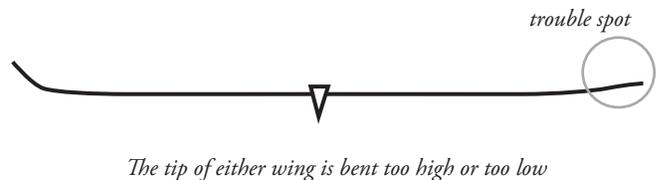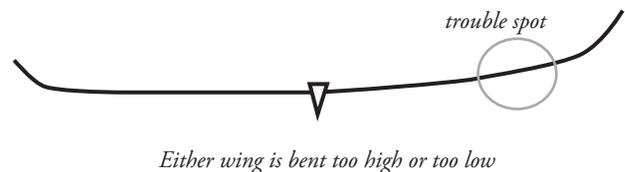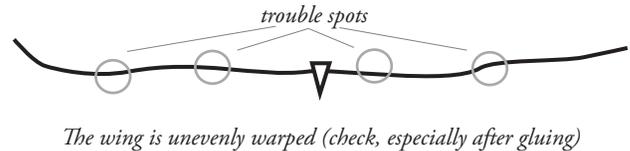
3 Flight Troubleshooting - Quick guide

wings

fuselage

What it should look like when balanced properly

Some common problems:

trouble spots

The wing is unevenly warped (check, especially after gluing)

trouble spot

Either wing is bent too high or too low

trouble spot

The tip of either wing is bent too high or too low

trouble spot

The fuselage is tilted or warped

The Swift Plane is based on a paper plane model from the "WhiteWings Assembly Kit" by Yasuaki Ninomiya and is used by permission – Check out this site for more tips on how to make your plane perform even better
http://www.whitewings.com

About Swift:

Swift is a NASA Explorer mission that was launched November 20, 2004 to study gamma-ray bursts.

Gamma-ray bursts are huge explosions located in distant galaxies, but their cause remains one of the greatest mysteries in astronomy.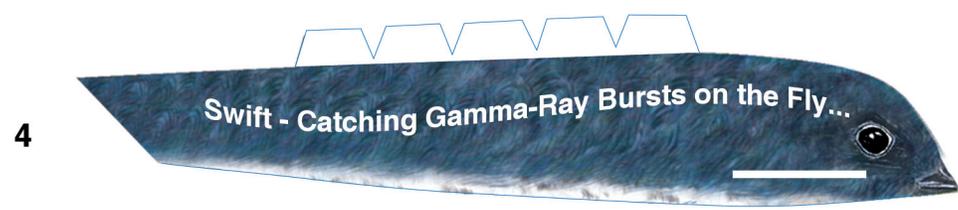 Swift is designed to detect the bursts and autonomously point sensitive telescopes at their positions to observe the fading optical, ultraviolet, and X-ray afterglows.

Named after a bird that catches its prey "on the fly," the Swift satellite can very rapidly – usually in under a minute – swing around and aim its telescopes at a gamma-ray burst.

Swift's scientific goals are to determine the origin of the bursts and to use them to probe the distant universe.

Swift is a NASA mission that was built and is operated by an international collaboration. Countries with major contributions are the US, Italy and the UK.

http://swift.sonoma.edu

5

Swift - NASA Education & Public Outreach...

3

1

2

4

Swift - Catching Gamma-Ray Bursts on the Fly...

6

7