

Whisper 1400 Glider

Operation Manual



Ace R/C Whisper 1400 Glider R/C Sailplane (4104-F)

Distributed by Ace Hobby Distributors, Inc. • 116 W 19th ST, Higginsville, MO 64037
Phone: 660-584-7121 • www.acehobby.com • E-mail: acehobby@ctcis.net

Warranty

This kit is guaranteed to be free from defects in material and workmanship at the date of purchase. It does not cover any damage caused by use or modification. The warranty does not extend beyond the product itself and is limited only to the original cost of the kit.

By the act of building this user-assembled kit, the user accepts all resulting liability for damage caused by the final product. If the buyer is not prepared to accept this liability, it can be returned new and unused to the place of purchase for a refund.

Notice: Adult Supervision Required

This is not a toy. Assembly and flying of this product requires adult supervision.

Read through this book completely and become familiar with the assembly and flight of this airplane. Inspect all parts for completeness and damage. If you encounter any problems, call 660-584-6724 for help.



Modeling Organizations

The Whisper is a serious radio-controlled model airplane and you should obtain airplane check-out and flight training from an experience pilot to insure maximum enjoyment and success from the R/C experience. There are thousands of clubs in the U.S. that have training programs and are very willing to help. Also, it is recommended that you join one of the following organizations. They can help you find a club in your area plus offer insurance programs to protect you.

Academy of Model Aeronautics

5151 East Memorial Dr.
Muncie, IN 47302
800-435-9262
Fax 765-741-0057
www.modelaircraft.org

Sport Flyers of America

POB 7993
Haledon, NJ 07508
800-745-3597
Fax 973-305-6686
www.modelaviation.com

I. PRE-ASSEMBLY

Unpacking and parts check:

Carefully unpack the contents of your kit and check it against Fig. 1 for completeness. If any parts are missing or damaged, customers in USA may call 660-584-6724 for help.

Needed for assembly

You will need the following tools and materials to complete your whisper:

- 5-Min. Epoxy
- Modeling Knife
- Small Phillips Screwdriver

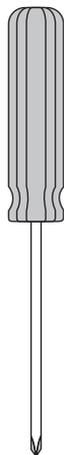


Figure 1. Contents

Left Wing

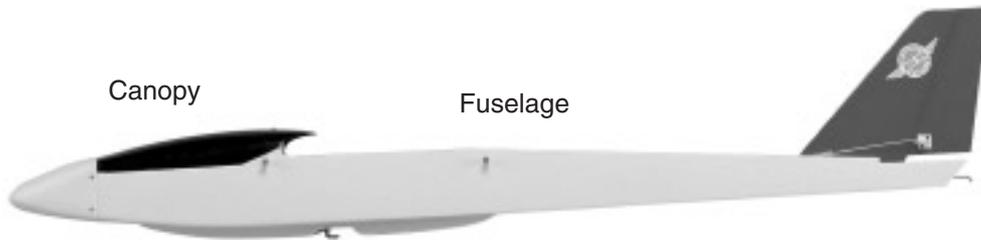


Right Wing



Canopy

Fuselage



Fin/Rudder



Stabilizer/Elevator

Wing Joiner



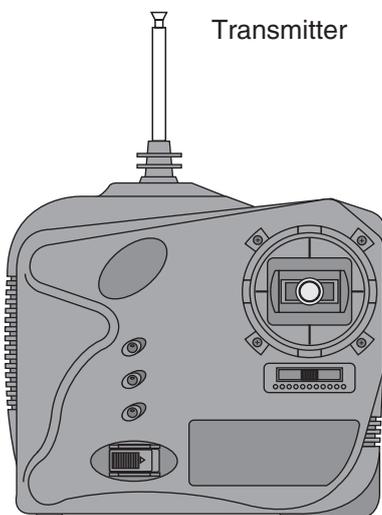
Wing Protector



Velcro

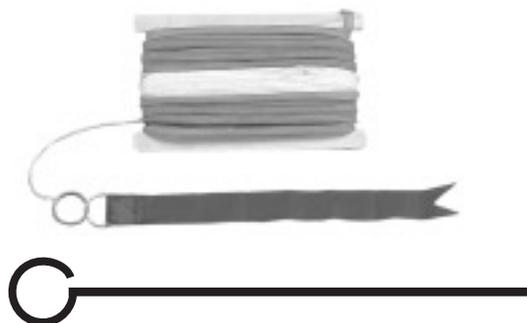


Rubber Band



Transmitter

Mini-Start



II. Assembly

Follow the assembly steps. We have illustrated each step and provided text to explain the process.

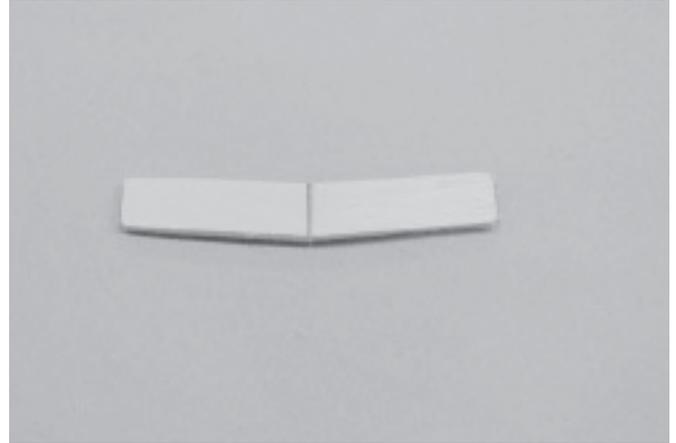
Main Wing Assembly



1. Note that each wing panel is actually two pieces with an inner section and a tip section. These two sections for each wing panel are joined as follows. On the top of the wing, carefully cut the covering away from between the ribs where the inner and the outer panel join. Also remove the small balsa wedge in-between the ribs. Put a light coat of 5 min. epoxy in the resulting slot. Bend the outer panel upward so the two ribs meet, forming an angle that is called “dihedral”. Wipe off any excess epoxy and hold in place while the glue sets.



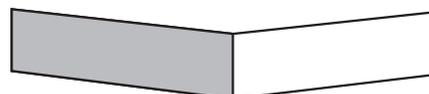
2. Locate two dihedral plywood wing joiners. Glue two wing joiners together with 5-minute Epoxy.



3. After the epoxy has cured, draw a center line on the wing joiner.

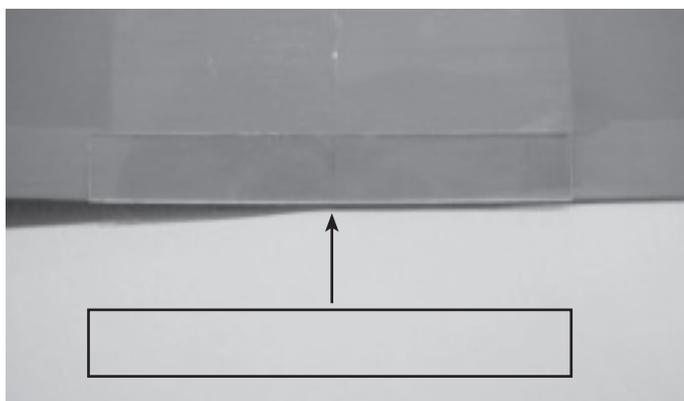


4. Before gluing the two wing halves, dry-fit the wing joiner into the slots in both the right and the left inner wing halves. Sand if needed for good fit. (Note: the wing is supposed to be joined at an angle; this angle is called dihedral.) When satisfied, apply a thin coat of epoxy on all sides of only one half of the wing joiner (see drawing). Insert the glued half of the wing joiner into the slot in the left wing panel, stopping at the center line. Make sure you wipe off any excess epoxy with a paper towel. Let cure.

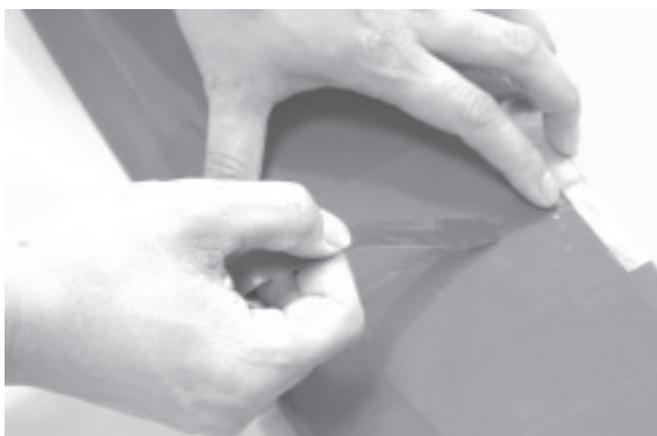




5. Lightly coat epoxy on all sides of the other half of the wing joiner (exposed part) and the exposed balsa inner edges of both wing panels (called the wing root). Slide the wing halves together, ensuring that they are accurately aligned. Firmly press the halves together and wipe off any excess epoxy. Let the epoxy cure while holding the wing together in proper alignment.

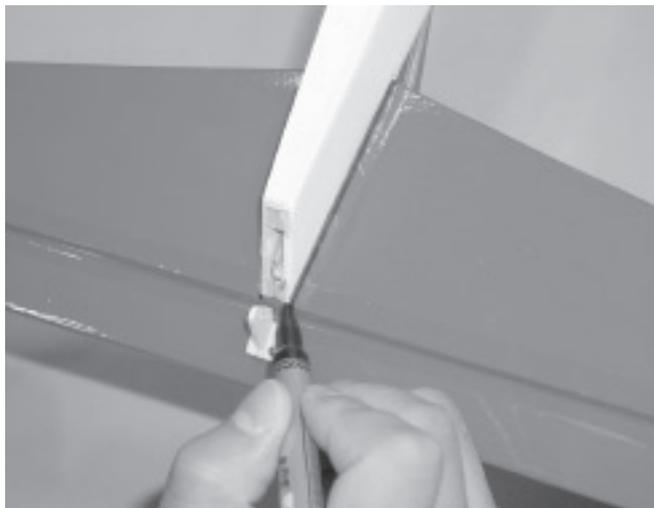


6. Attach the plastic wing protector onto the center of the top of the wing, flush with the rear edge (trailing edge). Use either epoxy or thin double sided tape to hold it in place.

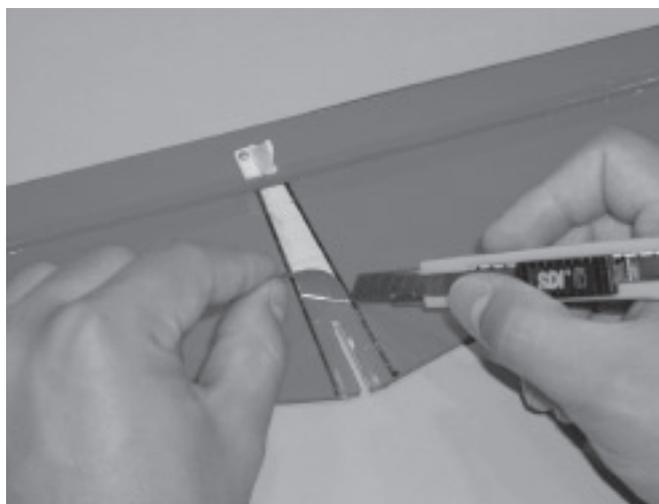


7. Find the decal sheet and cut off a strip of material where indicated. Dress up the three wing joints by covering them with this material.

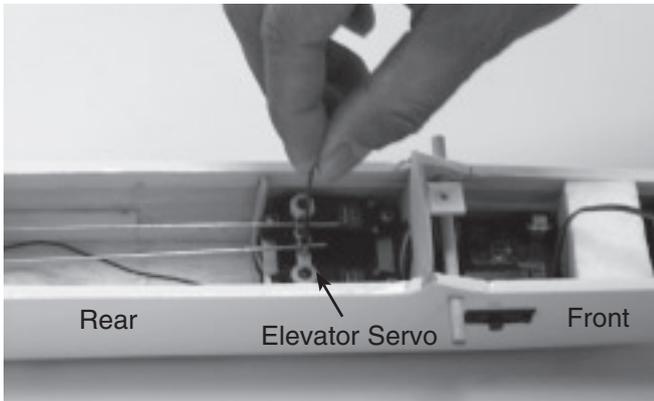
TAIL ASSEMBLY



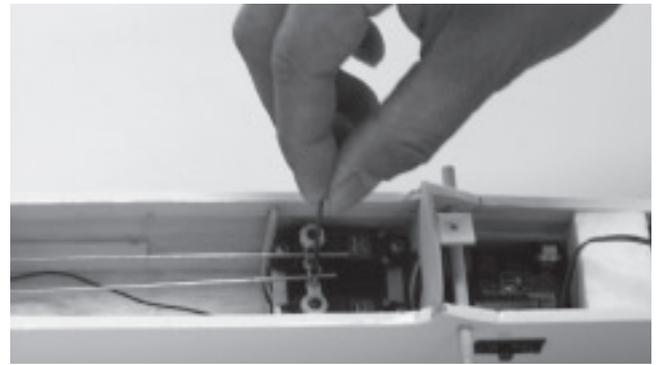
1. Trial fit the stabilizer in place on the fuselage. Center it on the fuselage; the elevator control horn should be aligned with the centerline of the fuselage. Use a felt-tip pen to trace where the fuselage sides meet the bottom of the stabilizer.



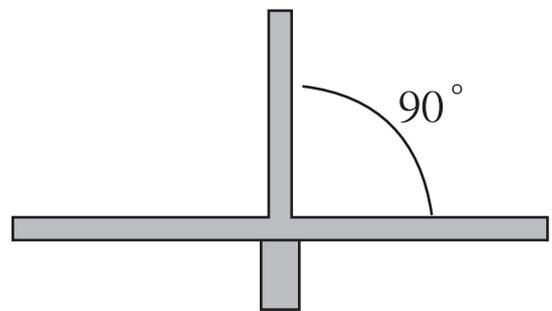
2. Remove the tail and VERY carefully use a sharp hobby knife to cut the covering on the bottom of the stabilizer about 1/16" on the INSIDE of the lines you just traced onto the tail. Just score the covering film. DO NOT cut into the wood or you will weaken the structure. Carefully peel away the covering material in this area.



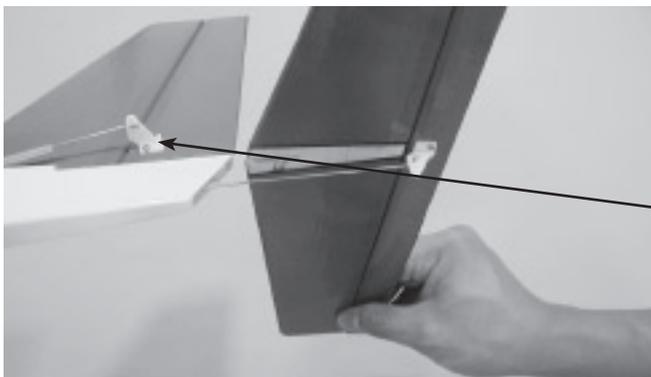
3. Inside the fuselage's wing compartment, loosen the hex screw that secures the elevator pushrod on the elevator servo horn. Pull this pushrod completely out of the fuselage. Insert the "Z" bent end of the pushrod into the second hole of the elevator control horn. Then replace the pushrod in the rear of the fuselage, sliding the assembly forward until the stabilizer is properly positioned. **MAKE SURE** you insert the pushrod into its connector on the elevator servo horn as you move the tail into position. Use 5 min. epoxy to glue the stabilizer in place. It is important to keep the stabilizer level in regards to the fuselage and the fin perpendicular to the stabilizer while the glue cures. Also, make sure the elevator pushrod had stayed inserted into its connector on the elevator servo horn.



4. IMPORTANT: Before flying, you must turn the radio on (with receiver battery charged and transmitter batteries installed) and check that the elevator and rudder are in the neutral position with the transmitter stick and trims in neutral. Securely tighten the hex screw on the elevator pushrod connector on the elevator servo horn. Also, adjust the rudder pushrod if needed.



Level with fuselage



Second Hole

Figure 2. Battery Installation

2. Install four AA batteries in the receiver battery box, then place the battery box in the compartment behind the nose and secure it with velcro.

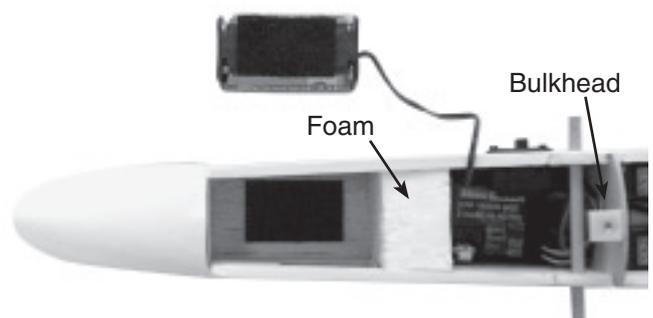
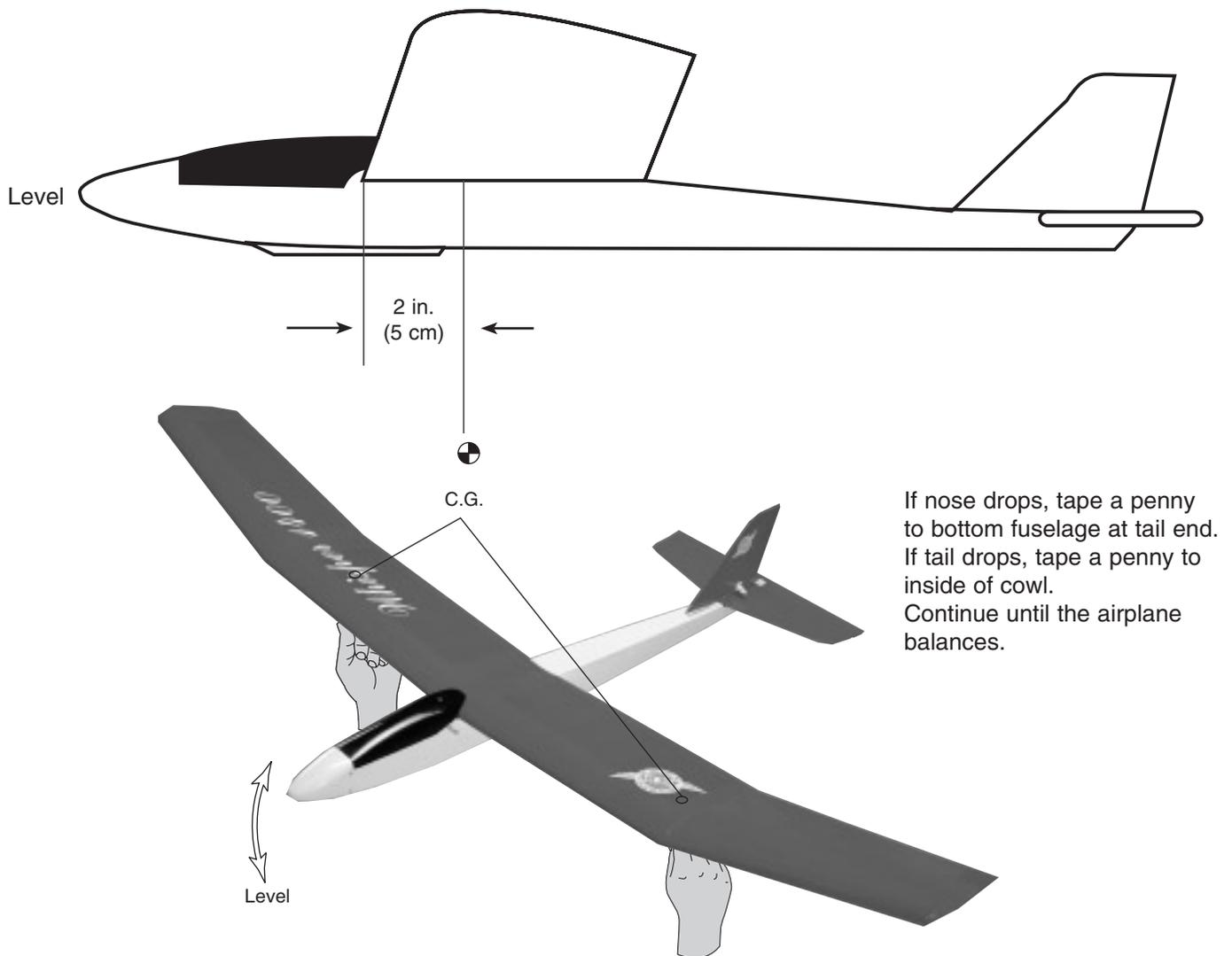


Figure 3. Check Balance



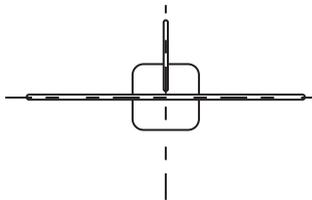
III. OPERATIONAL CHECK

1. Install eight AA batteries in the transmitter, referring to the radio system's instruction manual.
2. Turn the transmitter on and then the receiver. Refer to Fig.4 .
Move the stick right and make sure rudder moves to the right.
Move the stick left and make sure the rudder moves left.
Move the stick upward and make sure the elevator moves down.
Move the stick downward and make sure the elevator moves up.
Also check for the proper amount of throw and make sure the rudder and elevator are in neutral when the stick and the trim levers are in the center.

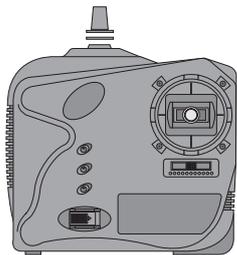
You are now ready to go flying!

THE DIRECTION OF MOVEMENT (RUDDER AND ELEVATOR)

NEUTRAL

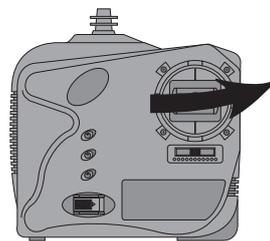
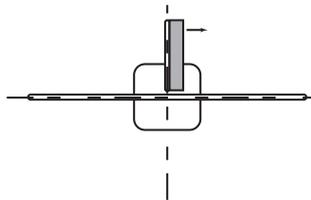


Check the position of rudder and elevator (if these are in neutral).



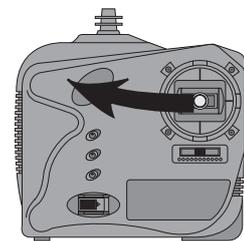
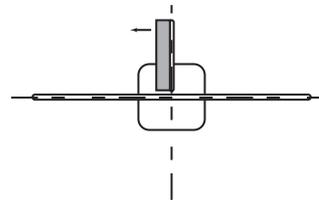
Set the trim in neutral position. Set the sticks in neutral position

RIGHT TURN



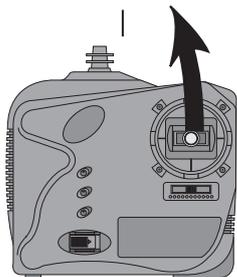
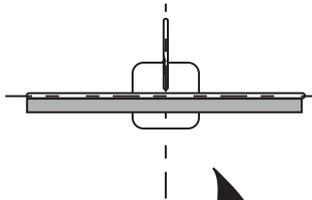
Move the stick to the right.

LEFT TURN



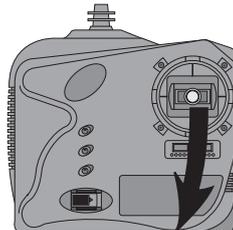
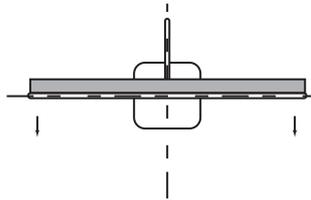
Move the stick to the left.

DOWN



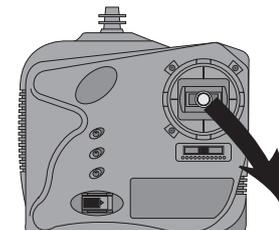
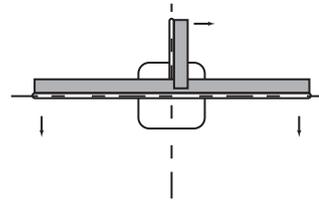
Move the stick up.

UP

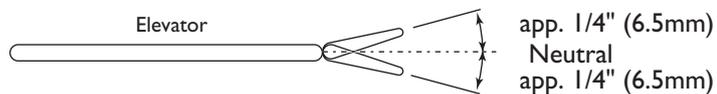
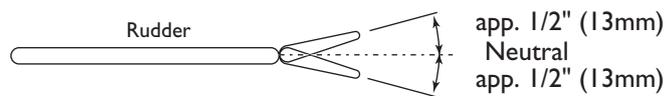


Move the stick down.

RIGHT AND UP



Move the stick down and right.



IV. FLYING

You should have a flight instructor teach you how to fly the Whisper. Like a real airplane, you must have an understanding of how to fly the model before launch, or you will probably not be successful. Check at your hobby shop or call the AMA (in the front of this book) for flying clubs in your area.

Pre-Flight Checklist

Choose a calm day for your first flights. Never fly in winds over 5 mph. Also, choose an open field with no obstacles or people. The field should be at least the size of a football field.

Make sure your batteries are fresh.

Make sure there are no other pilots operating on the same channel (frequency) as you are. If you turn your radio on while he is flying, you will cause him to crash.

Check you radio for good range (50 ft. with the antenna collapsed) and proper operation.

1. Hand Launch Flight

We recommend that the first flights be simply hand launched, both to learn the basics of flight control plus make sure the airplane is set up (trimmed) for proper flight.

A proper hand-launch of the airplane is necessary. It must be launched into the wind with a firm toss. The airplane must be tossed level or even pointed a little down. It should never be thrown upward, or it will stall and crash. Turn very gently right and left to keep the wings level and only use the elevator if the airplane dives or stalls. As you gain familiarity with the airplane, the launch can be progressively more aggressive; eventually, you can achieve flights of up to 30 seconds from just a hand launch!

2. Mini-Start Flight

Mini-Start is a catapult system that takes the plane up to 200 feet of altitude. At this altitude, you can expect 3 or 4 minutes of glide time; once you gain skill, you can use upward air currents (thermals) to keep the airplane aloft for much longer periods.

The Mini-Start consists of about 40 feet of latex rubber tubing and about 200 feet of nylon string. One end is secured to the ground with a peg and the other end has a ring and a ribbon. The ring hooks onto the tow hook that is on the bottom of the Whisper's fuselage. The Mini-Start is then stretched back and then the Whisper is launched. The Mini-Start must be laid out so the launches will be into the wind.

For the initial Mini-Start launches, stretch it back only about 10 paces. Launch the plane the same as a hand launch.

While under the power of the Mini-Start, turn very gently right and left to keep the wings level. Let the airplane climb out gradually and gently until it reaches the peak of the launch. The Mini-Start ring should drop off the tow-hook and the plane will then be on its own. While flying, always keep the airplane upwind of yourself and within a reasonable distance so you can see what it is doing. Remember, when the plane is coming toward you, when you move the stick to the right, the airplane will go to the left from your point of view. This is the hardest thing to learn. Initially, you can keep your body pointed in the same direction as the airplane and look over your shoulder. That helps.

Usually, only small stick movements are required. Try to keep your flying smooth. You can turn the plane by bumping small amounts of rudder and then return to neutral. Use the elevator to keep the airplane at the desired altitude. After awhile, coordinate your turns with the elevator; i.e., bank the plane with a little bit of rudder, then feed in some up elevator to maintain the turn at the same altitude.

If the plane tends to turn one way or the other use the trim lever on the control stick to neutralize the flight. Same thing applies if the plane wants to climb or dive.

3. Landing

When your Whisper reaches about 50 feet of altitude, set up your landing approach. Always try to land INTO THE WIND. Keep your turns gradual and only use elevator to maintain a gradual glide. If you feed in too much up elevator, the plane will stall and may crash.

Just before touchdown, "flare" the plane by adding up elevator. The plane should slow down even more and come in for a gentle landing. Don't add too much elevator, too soon!

Walk over to the plane and turn off the switch on the plane, then the transmitter switch.

Check over the plane to make sure nothing loosened up or broke during the flight.

4. Riding the Air Currents

Using thermals to keep the Whisper glider aloft is one of the most gratifying aspects of the R/C hobby. It is possible to have flights of 10 or 15 minutes... even 1 hour, if conditions are right.

A thermal is an upward current of air that travels in a circular motion. It is caused by uneven heating of the ground's surface, usually due to variations in surface color and terrain. If you have seen a "dust devil", you have seen a very tight, little thermal at ground level picking up dust and taking it aloft. The thermals you can use to gain altitude with your Whisper are much bigger, usually about 100 feet in diameter and can go up many hundreds of feet.

Detection of a thermal is the secret to success. As you pass through a thermal, the airplane will give you a sign. A wingtip may suddenly rise or the whole plane will start going up. If you detect a thermal, the next step is to get in it and stay in it. If a wingtip goes up, turn back into the cause of it going up. If the whole plane goes up, turn back around after it stops going up. This way, you can locate the thermal. Once located, keep the airplane turning in a circle and let it drift with the wind. With some practice, you can gain as much altitude as you want before you exit the thermal. Realize that you can't get something for nothing. What goes up must come down. Whenever there is a thermal, there is "sink"; heavy air in which your Whisper abnormally loses altitude. When you encounter sink, fly away from the area as soon as possible.

In any event, don't let your Whisper get too far down wind. If you do so, you may not be able to penetrate the wind adequately to get the airplane back.

V. IN CASE OF TROUBLE

If the radio is erratic (glitches), check that the transmitter and receiver antennas are extended to their full length. Make sure the transmitter batteries are fresh. Make sure no one else is operating on your channel (frequency) in the immediate vicinity.

If the plane does not fly properly, make sure you are being gentle with the control inputs. Make sure the plane is balanced properly (Fig. 3). Make sure all the wing and tail surfaces are flat, true, and properly attached and aligned.

If your trouble persists, call 660-584-6724 for technical help.

VI. CONCLUSION

To defeat the laws of gravity and take to the wing is both challenging and thrilling. We hope you enjoy your entry into the fascinating world of R/C flight and make it your hobby for a lifetime. Please let ACE R/C be your chosen brand, no matter what direction you progress.

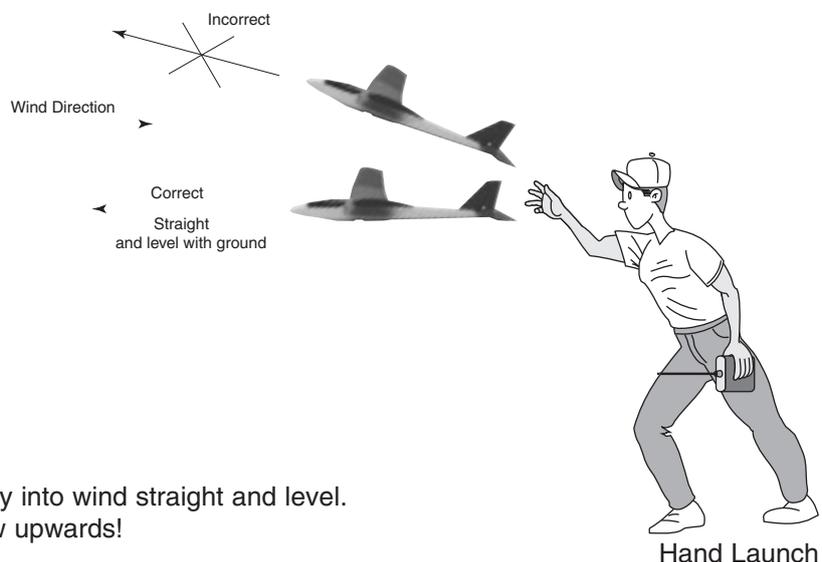
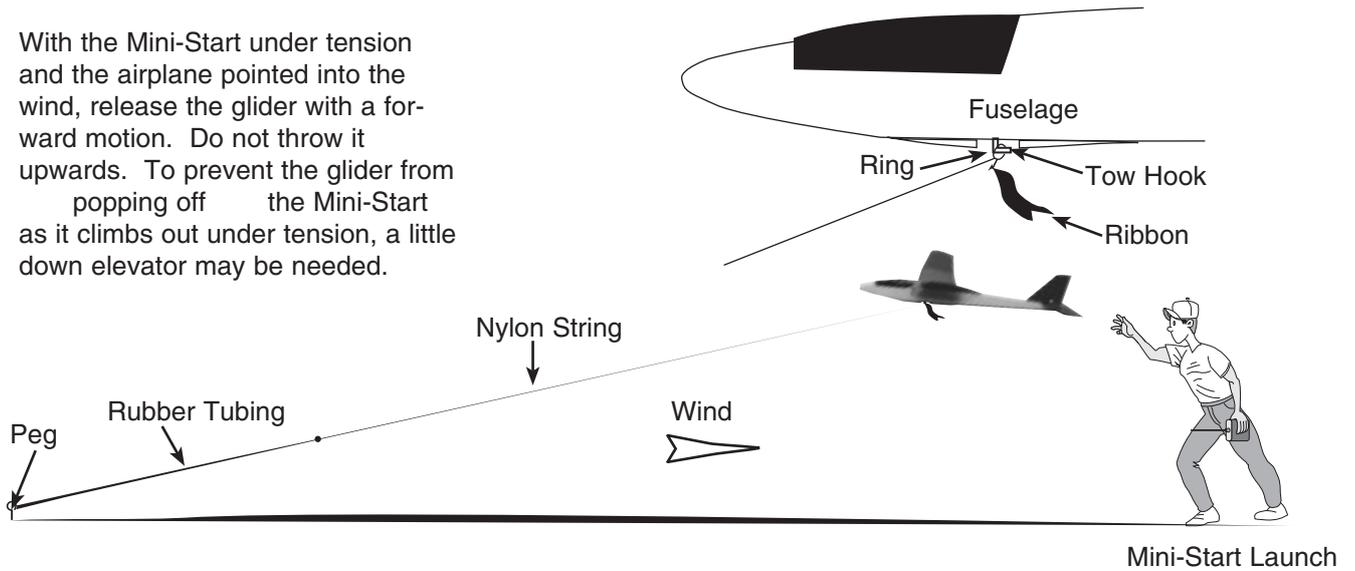


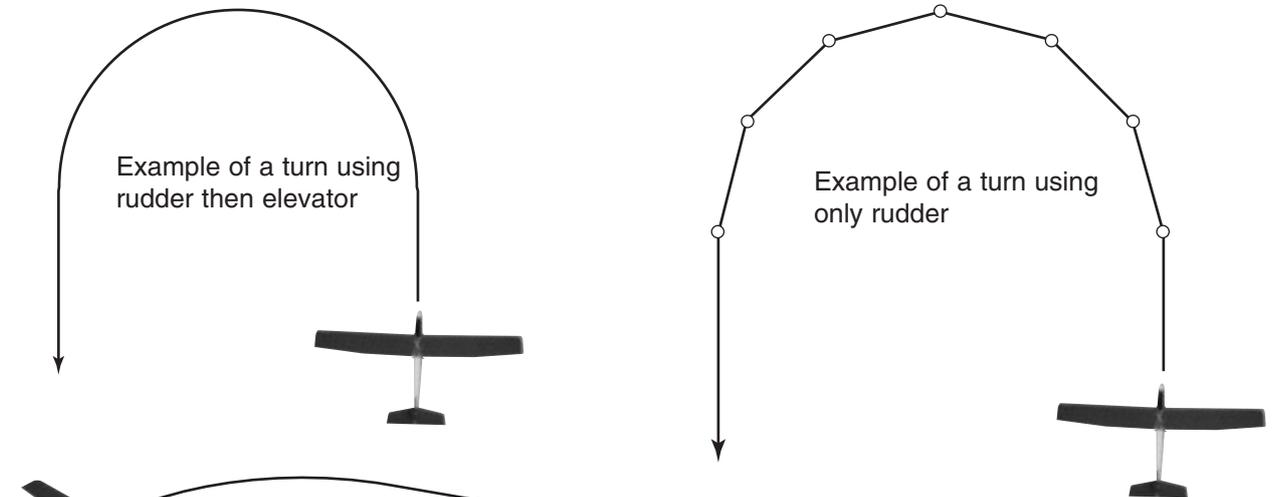
Figure 5. Flying

With the Mini-Start under tension and the airplane pointed into the wind, release the glider with a forward motion. Do not throw it upwards. To prevent the glider from popping off the Mini-Start as it climbs out under tension, a little down elevator may be needed.



Example of a turn using rudder then elevator

Example of a turn using only rudder

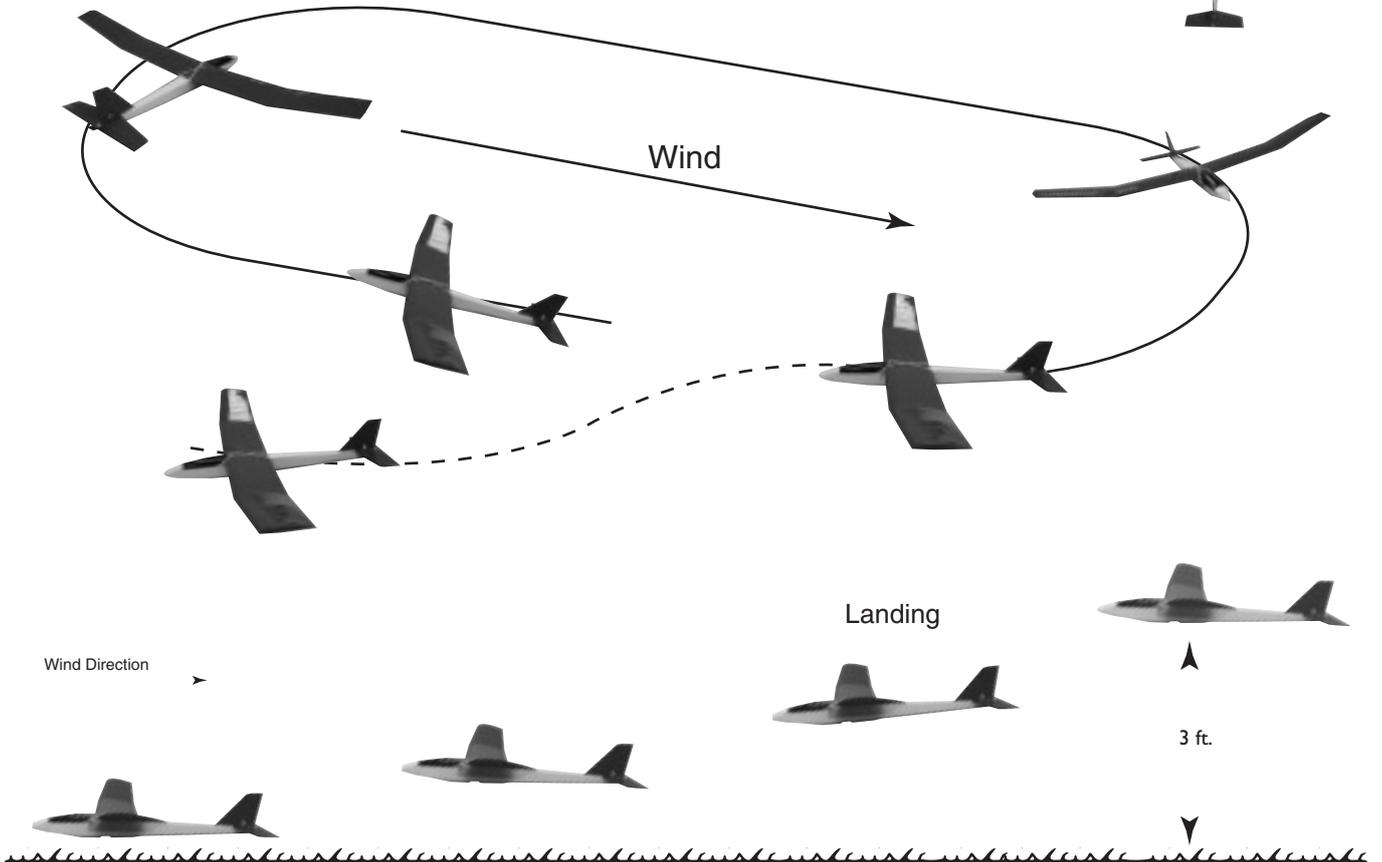


Wind

Landing

3 ft.

Wind Direction



VII. REPLACEMENT PART

Fuselage AS6046

Wing Dowel (2)

Fuselage (1)

Main Wing AS6019

Wing Protector (1)

Left Wing (1)

Right Wing (1)

Wing Joiner(2)

Horizontal Tail AS6020

Stabilizer/Elevator (1)

Vertical Tail AS6021

Vertical Fin/Rudder (1)

Control Horn AS6023

Control Horn(2)

Back Plate(2)

Screw(4)

Cowl AS6047

Self-Tapping Screw(4)

Cowl(1)

Pushrod AS6022

Pushrod (2)

Hardware AS6027

Plastic Nut (2)

Rod Connector (2)

Hex Wrench (1)

Set Screw (2)

Canopy AS6025

Canopy (1)

Mini Start AS6048

Rubber Tubing / Nylon String

Ribbon(1)

Peg(1)

Rubber Band 3169/2

Rubber Band(4)

Decal AS6016

Decal(1)