PENNY-WEIGHT FLYING PAPER AIRPLANES

Cut, Fold & Fly – WWII Pacific, Volume 1

Phil Koopman, Sr.

Contents:

- Introduction
- Building Instructions
- How to Fly
- Curtiss P40 "Warhawk" (Flying Tigers)
- Mitsubishi A6M "Zero"
- Grumman F4F "Wildcat"
- Aichi D3A "Val"
- Grumman F6F "Hellcat" (1943 Markings)
- Nakajima Ki-43 "Oscar"
- SBD Dauntless



Notes:

- Print models one sided, "actual size" do not "fit to paper" or scale when printing!
- You'll need to put a weight in the nose for level flight:
 - Recommended: if printing on 65 lb. cover stock, use a pre-1982 US penny (3.11 grams) or a 2 cent Euro coin (3.06 grams)
 - If printing on office printer paper, use a post-1982 US Penny (2.5 grams) or 1 cent Euro coin (2.3 grams)
- This is a scan of the only surviving copy of a printed draft manuscript. The original appears to have been printed on an ink jet printer, so there are various patterns in the colors associated with that process. You can touch up your plane with a felt tip marker if you like. (Typos have not been fixed.)
- I have built and flown some of these planes, but not all of them.
- I am unable to provide support, and in general not able to answer queries.
- No warranties of any kind are made. Please build and fly responsibly.
- I hope you enjoy these airplanes as much as I have!

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Paper models of all types are popular in many countries. This form of modeling takes many forms. Called Paper-Card Modeling in Europe, it spans the range from simple folded-paper darts, to complex three-dimensional models of airplanes, ships and buildings.

Paper models were popular in the United States during WWII. Material shortages made it difficult, if not impossible, to make models from balsa wood. Toy makers, too, were effected. With metal in short supply, many makers turned to paper substitutes. Even Lionel trains were put out as paper models in the 1940's. After WWII, paper models declined in the US. with the availability of metal and balsa wood.

The style of paper-plane construction used in this book was developed by Wallis Rigby, an Englishman. He was internationally know for his paper models of airplanes and trains. In addition to Rigby's many books of paper-model WWII airplanes, he developed models similar to those in our book as cereal premiums for General Mills. Mail in two box tops from Wheaties cereal and you received a pair of paper airplanes. In all, this type of model gave thousands of kids and adults their first try at model building.

Rigby's WWII models were simple in design and easy to build for kids of all ages. The planes were good flyers, if a bit fast, and very popular. The models were small and lacked detail. Colors were a bit on the garish side, like a blue P-40 Warhawk or a bright-yellow Nakajima fighter. Scale, too, wasn't so accurate.

We've attempted to retain the simplicity and flavor of the original models. Improvements in layouts and a larger size make the models easy to build and great flyers. And, there are new models that weren't in the Rigby series, like the Douglas Dauntless dive bomber and the US. Navy and Marines Wildcat. All models carry scale outlines and details of the real airplane. Colors, too, give an over all scale appearance. Detailed picture instructions make it easy for even young modelers to build a successful flying model.

These penny-weight planes are new models. We made the artwork with the latest in computer technology. For some of the models, custom computer programs allowed us to generate three-dimensional models from aircraft drawings. Other special programs projected these 3D images into flat surfaces used as patterns for the fuselage artwork.

The Simple Tools Needed

Most of what you'll need is already on hand -- just scissors, a single-edge razor blade and some glue will do. However, we do have some suggestions to make it easy. Please follow the step-by-step instructions. There are two basic types of construction -- airplanes with radial engines and in-line engines.

Rather than repeating dozens of steps for each model, there is a single, combined, set of illustrated instructions. Start by Building a Japanese Zero. This shows you all of the construction steps needed for any of the radial-engine models. Next, build the Flying Tigers' P-40. The P-40's in-line engine fuselage construction, and special features like the standard canopy are shared by other models, too. And, extra instructions are given for custom details, like the landing gear for the Achi "Val" dive bomber.

Use a model knife, or even a small disposable type, with a triangular blade for cutting out slots and the parts. Small scissors are useful for cutting curves, like wing tips. A straight edge as a cutting guide makes it easy to trim parts to shape. For easy building, please follow our instructions: Cut slots, score on the dashed lines, then cut out the part.

One can just bend the parts on the dashed lines, but accurate assembly will suffer. It's best to score along each dashed line. We use a dried out fine-line ballpoint pen, but any blunt blade, like a butter knife, will do. *HINT!* An *empty* ballpoint pen will still have a bit of ink. Some ink may come out from the heat of you hand. To by sure the pen is completely dry, close the air-vent hole with a drop of cement (the plastic "pencil-type" pens usually have the vent hole at the top end or under the eraser).

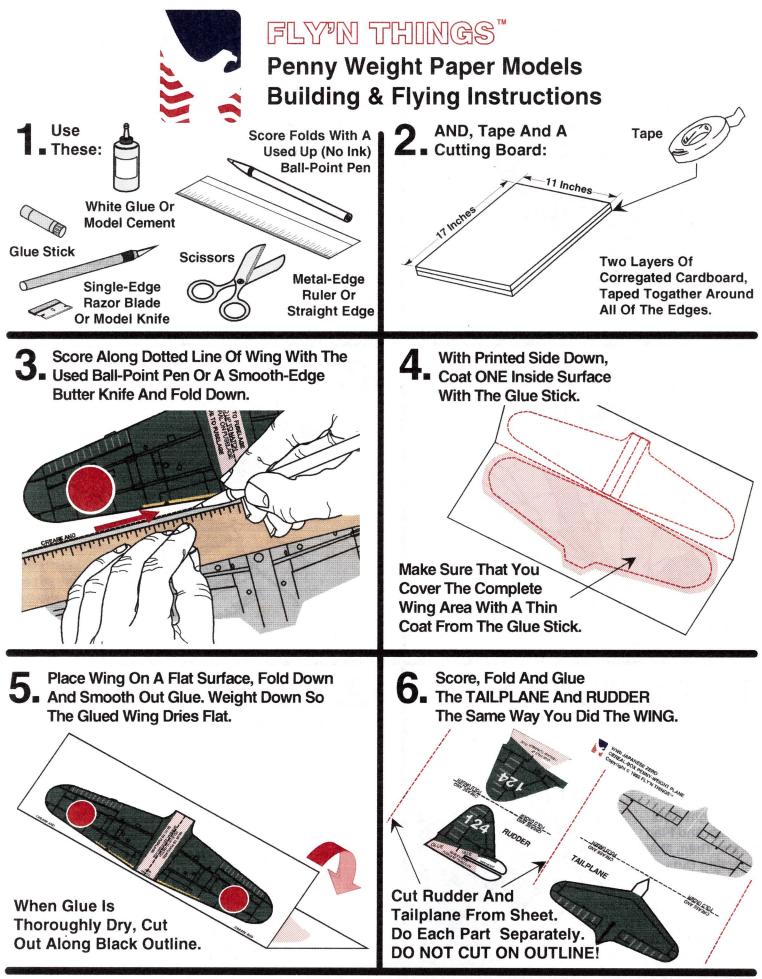
The best method of gluing the wing and tail parts together is with an ordinary glue stick --Dennison's brand works well. Remember, that paper absorbs water and warps; **DO NOT LAMINATE THE WINGS AND TAIL WITH WATER-BASED GLUE!** In all cases, weight down the laminated parts and let dry. The wing and tail parts must be perfectly flat.

You can use a very light coat of water-based "White" glue for assembly. However, we've found that a household cement, like the Duco brand, works best. It dries fast, but slow enough so you can make minor adjustments in part alignment before it sets. For difficult parts, like a nose cone, put a very thin layer of cement on both parts. Let dry, then apply a second coat and assemble.

For a more realistic model, color the cut edges of all parts *before* assembly. Use a colored marker pen around the edges. During Assembly, after cutting off the tabs on the fuselage, color the cut edges of the tab with marker pens or colored pencils of the same color as the fuselage.

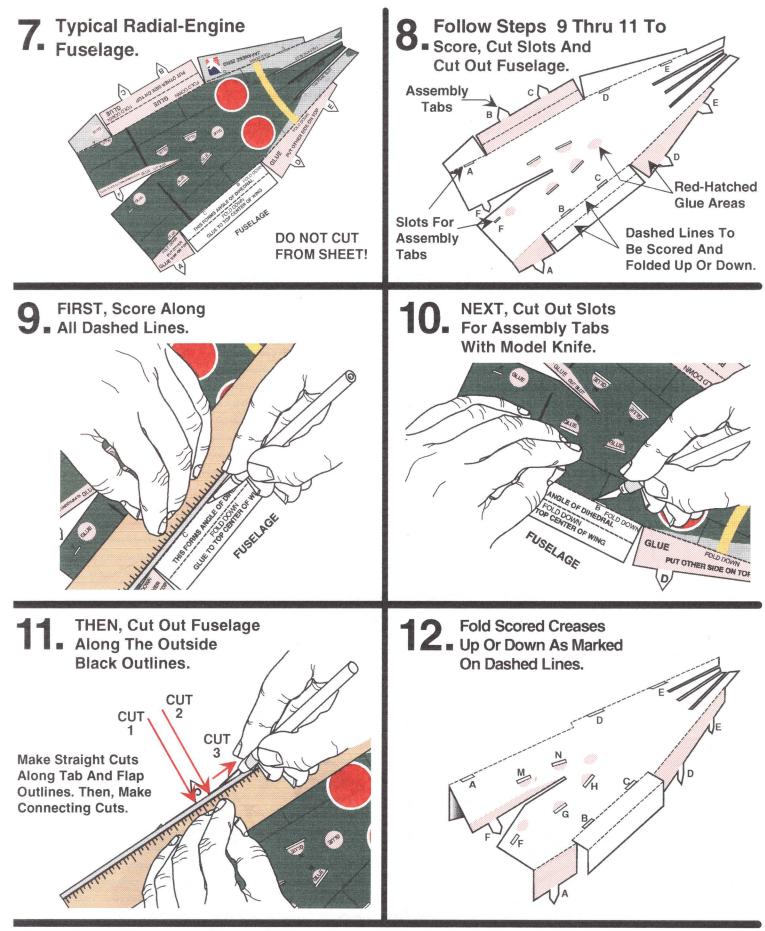
Our last suggestion is the penny weight. Our models were designed to use the early copper pennies for nose weight. Starting in 1983 the US. penny was lightened. Check the date and use pennies dated 1982 or earlier. Or if you have to use the light pennies, and the model stalls, add a tiny piece of modeling clay to the nose. Or, better yet, cement a small paper clip inside of the cowl (in addition to the penny) during assembly. *HINT!* Experiment with a radial-engine model. Complete the nose cowling but don't cement in place until after your flight test.

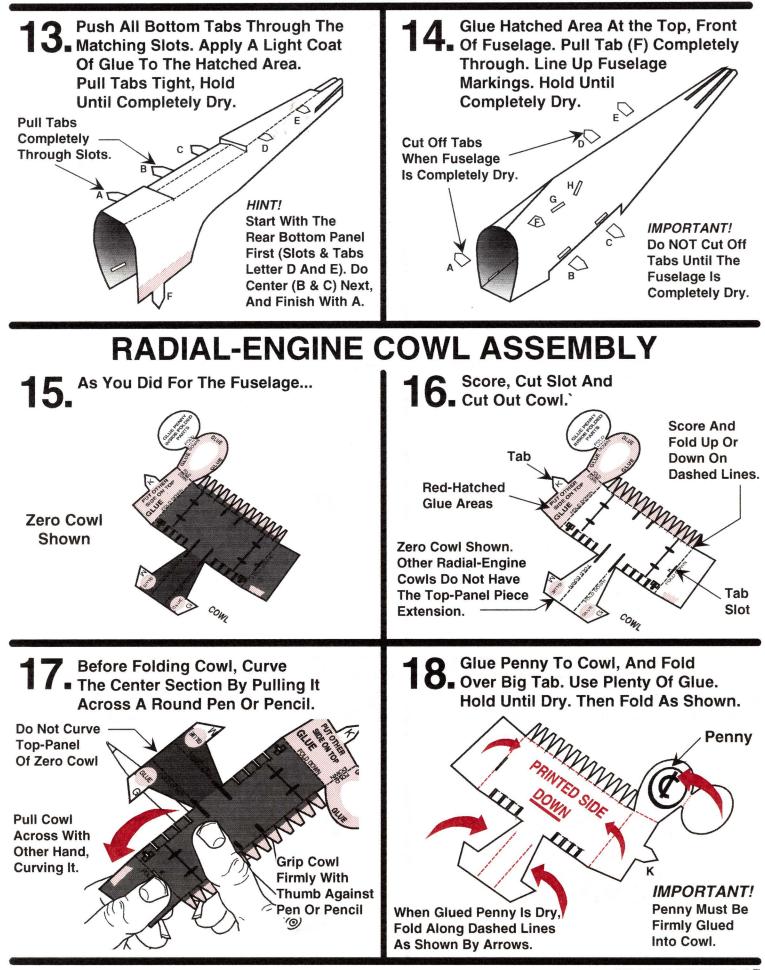
Build, Fly and above all, HAVE FUN!



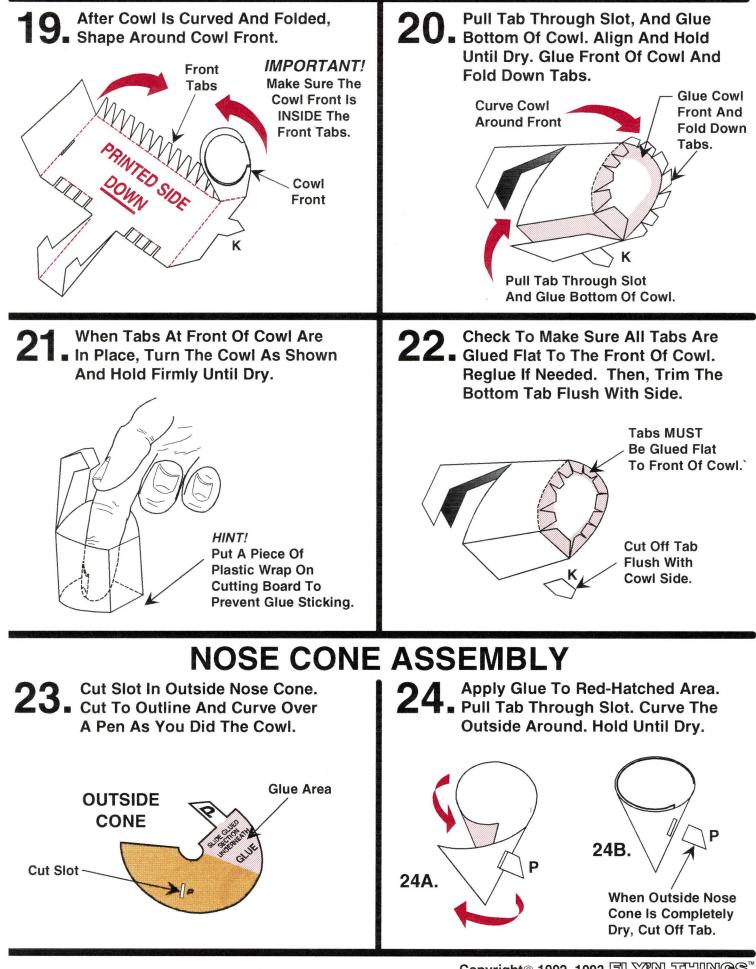
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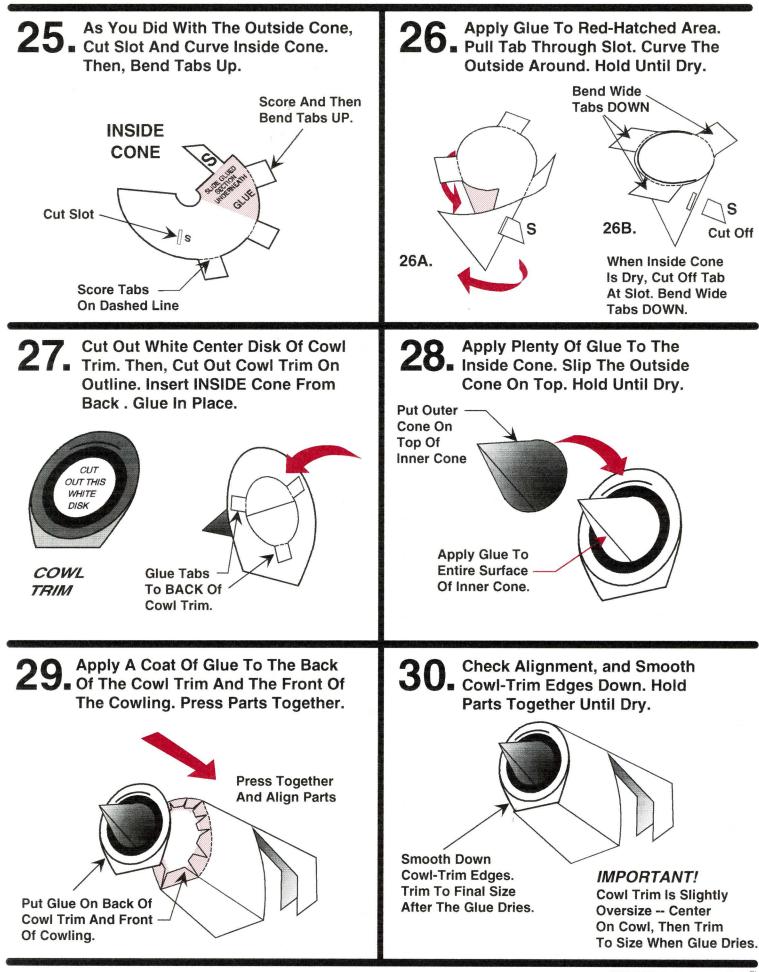
RADIAL-ENGINE FUSELAGE ASSEMBLY



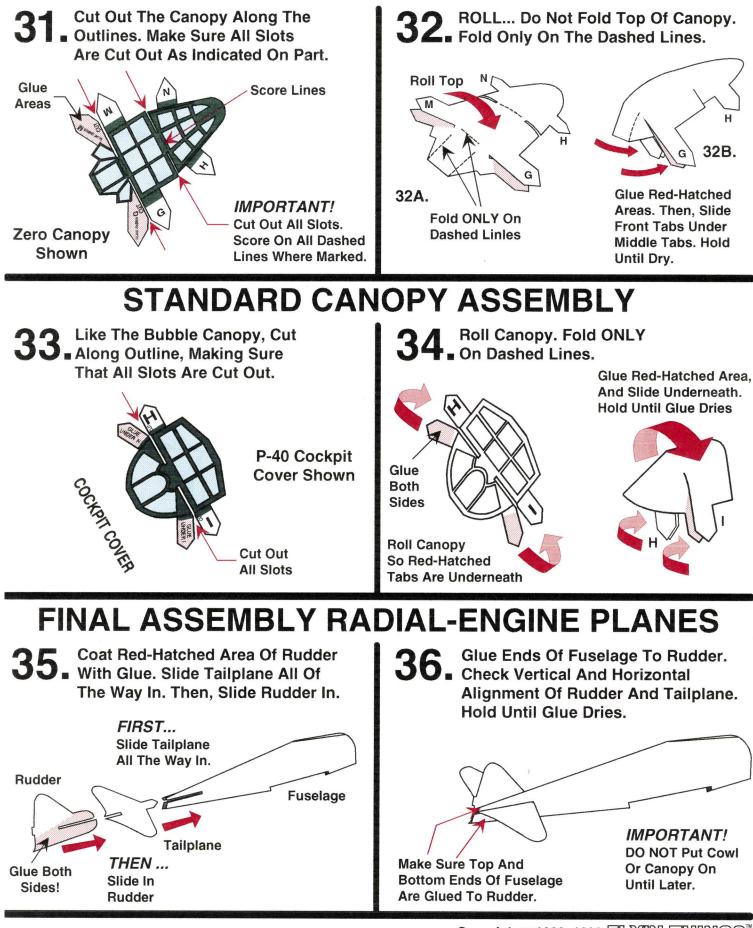


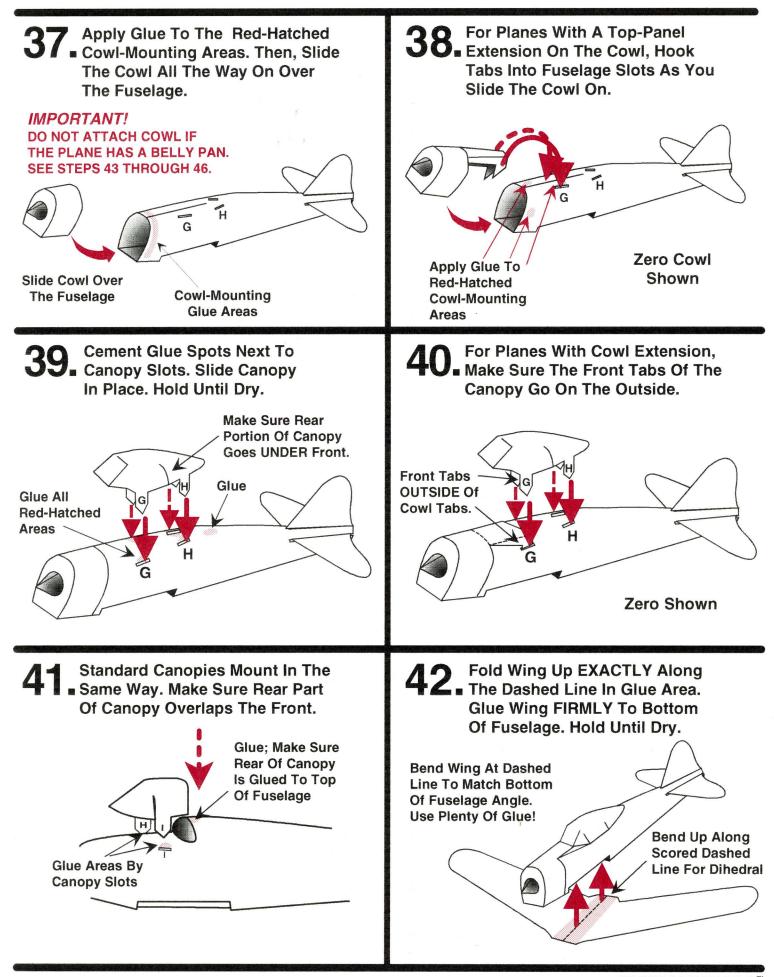
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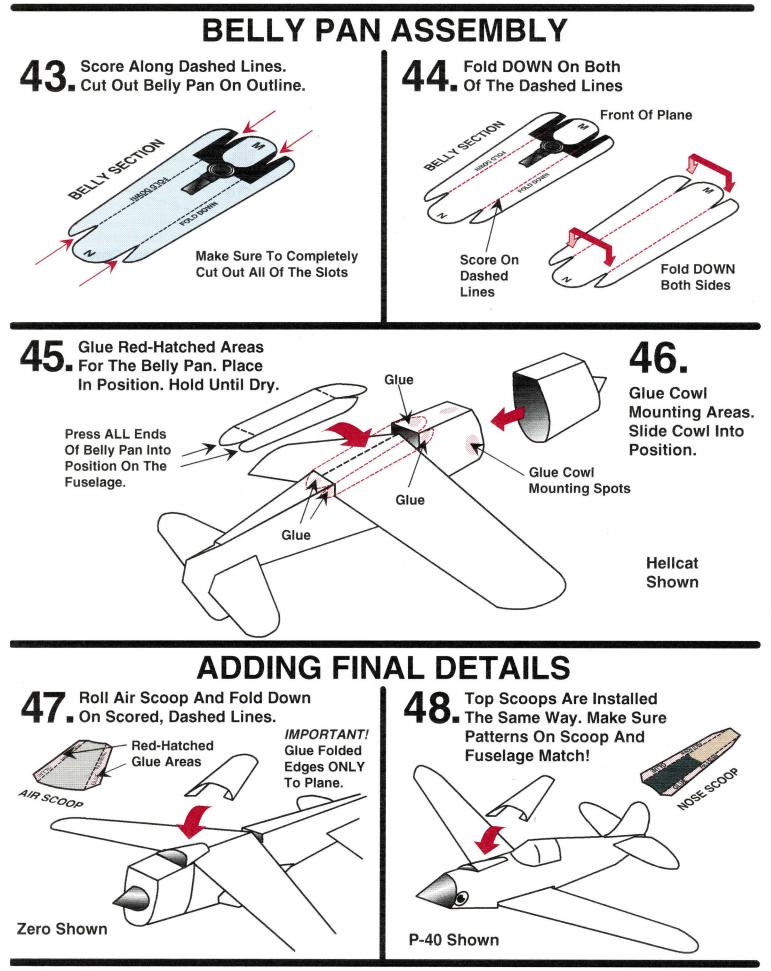


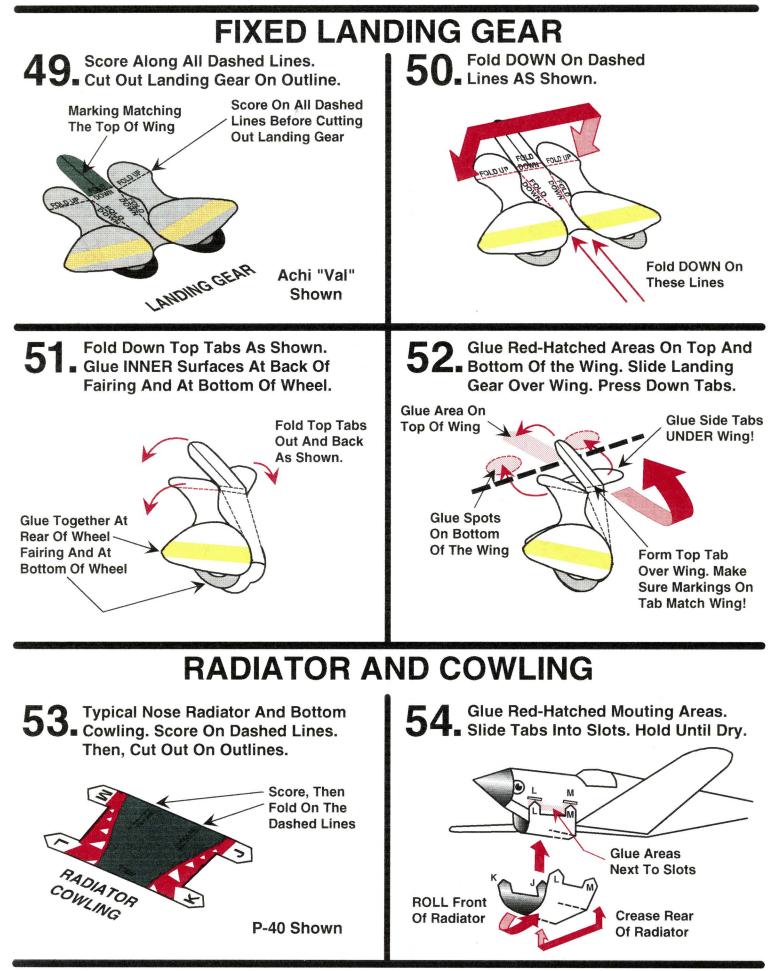


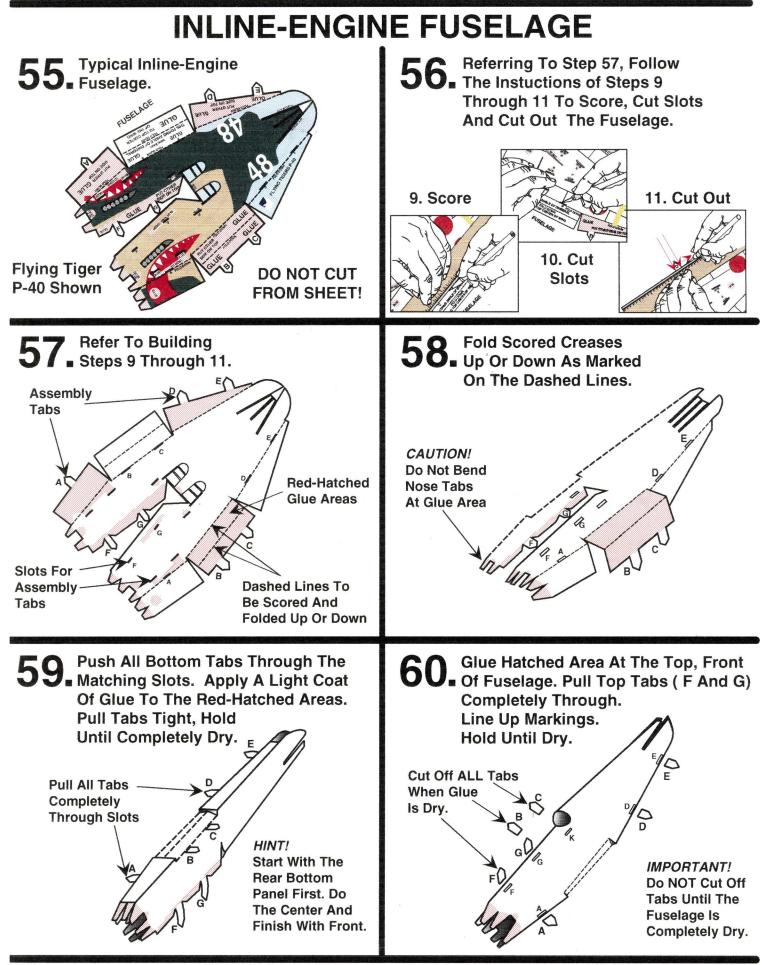
BUBBLE CANOPY ASSEMBLY

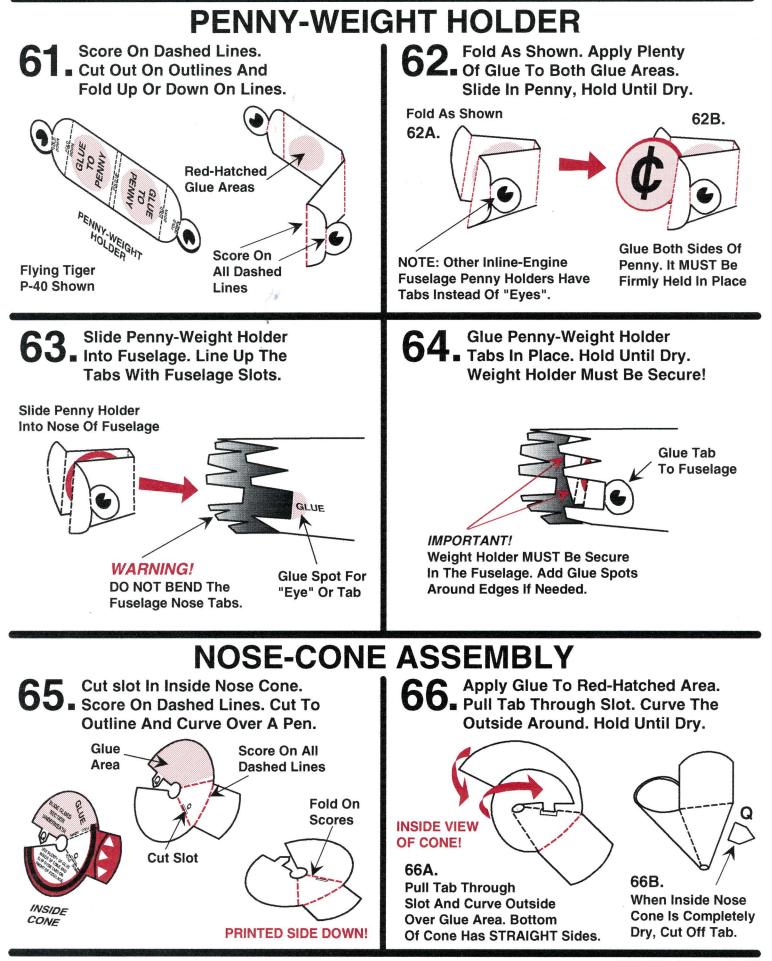


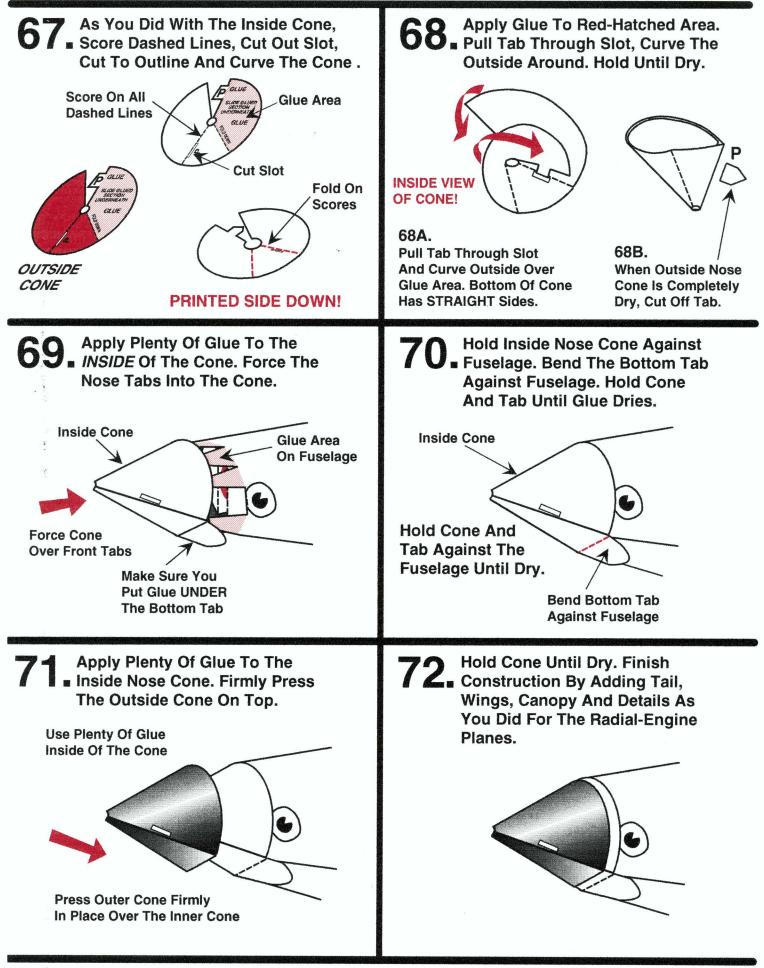




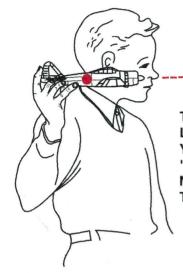








FLY PLANE LIKE YOU THROW A DART!



Throw Your Plane With A Smooth, Steady LEVEL Motion. After You Get Used To How Your Model Flies, You'll Be Able To Do "Stunts," Too. A Hard Throw, With The Nose Pointing UP, Gives A Loop! Or, Try Tilting Your Plane For A Hard Banking Turn.

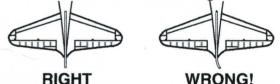


ADJUSTING YOUR PLANE FOR FLIGHT

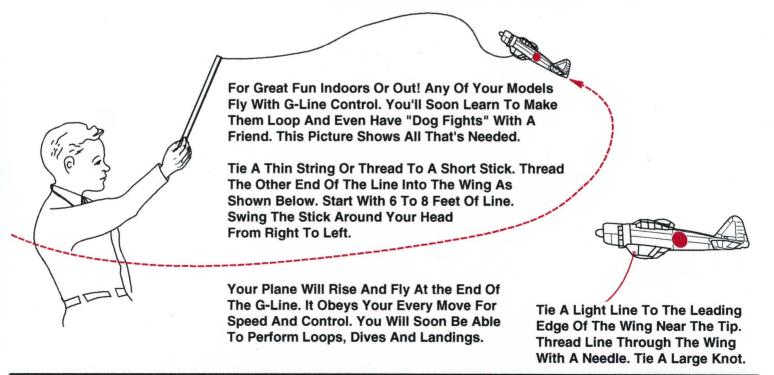


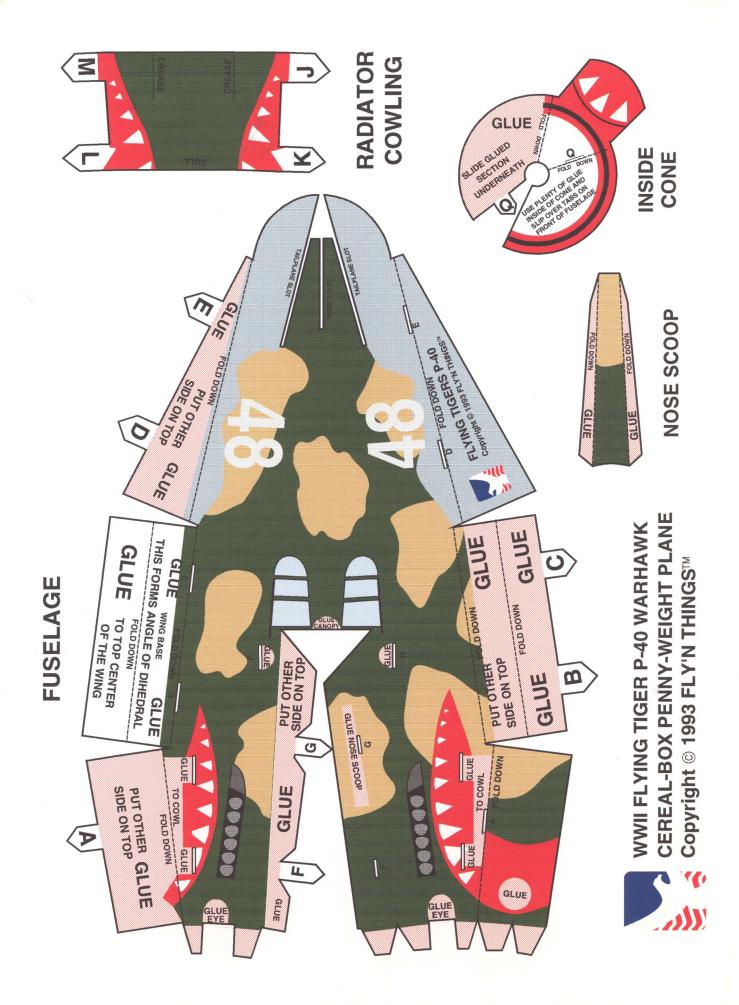
When Properly Made, Your Model Should Look Like This: Proper Dihedral And Correct Position Of The Rudder And Tailplane If Your Plane Hits Something And Dents The Wing, Smooth Out Dent With Your Fingers. Keep Wings FLAT - DO NOT Curve Or Bend.

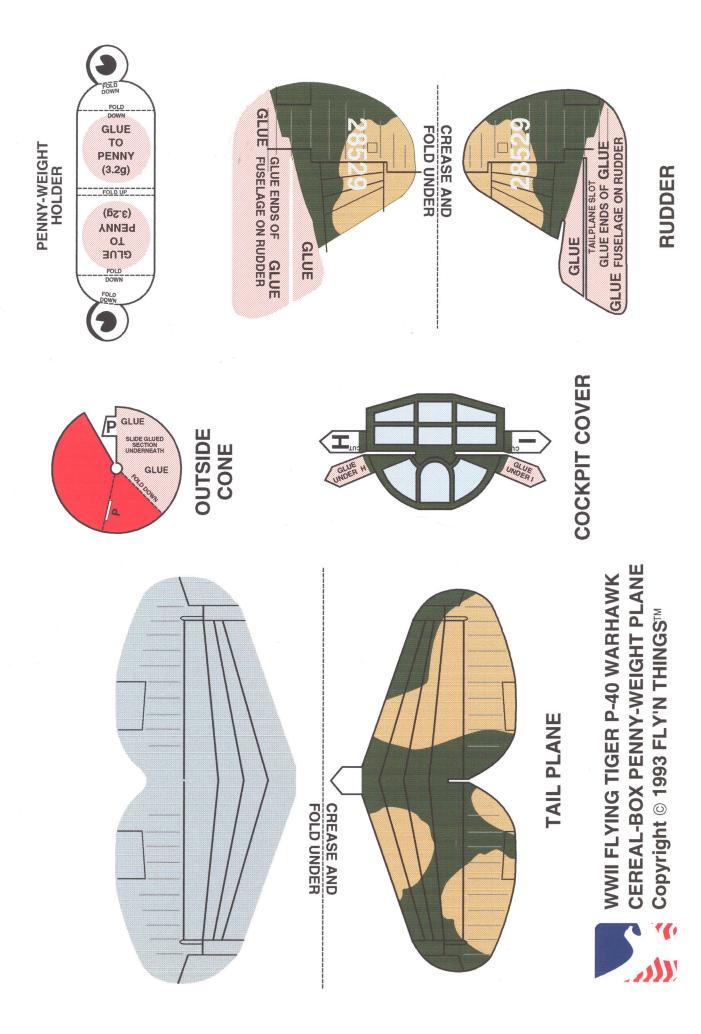
The Rudder Must Be Straight - NOT Curved Or Twisted, It Must Be Vertical And In Line With The Fuselage.

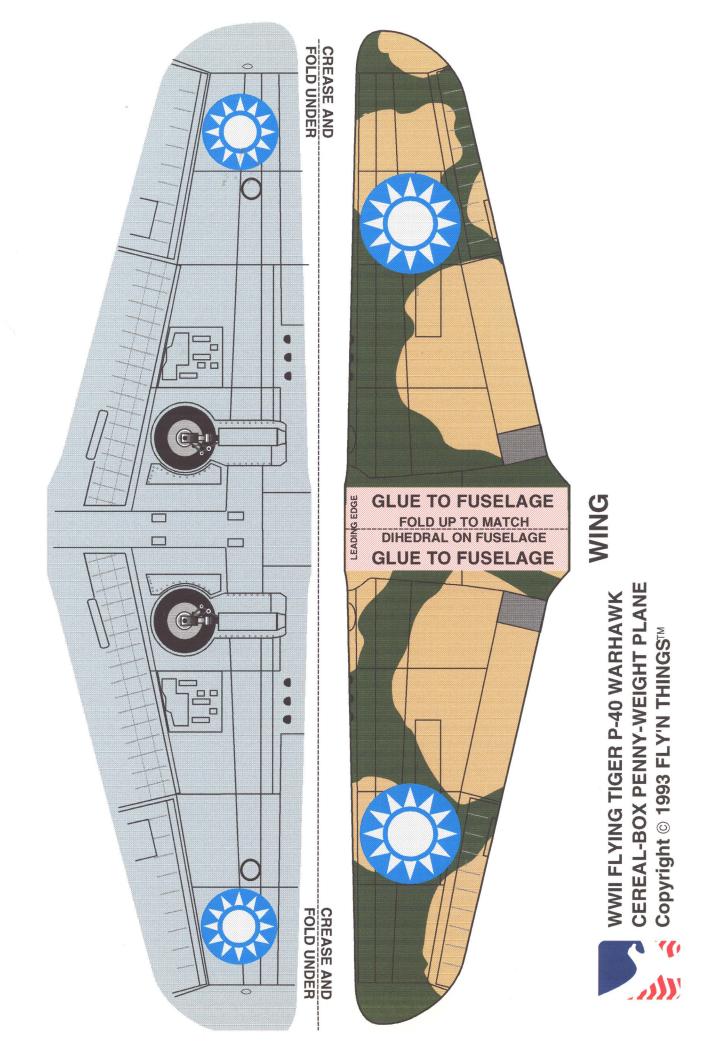


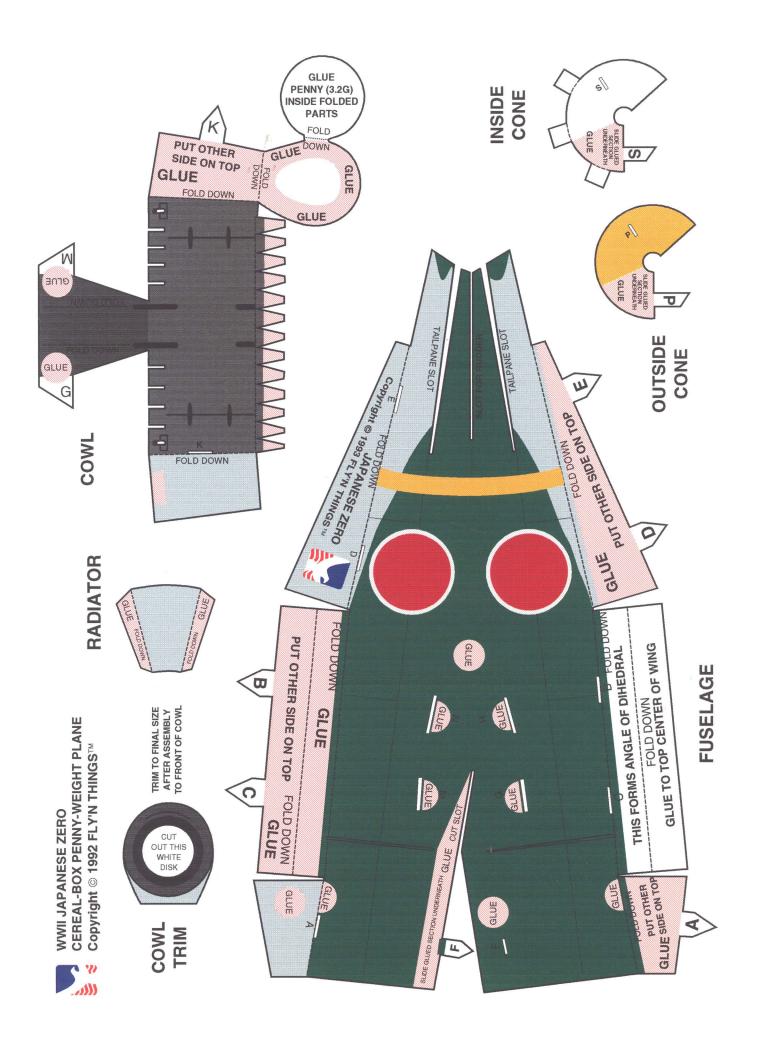
FLY WITH G-LINE INDOORS OR OUT!

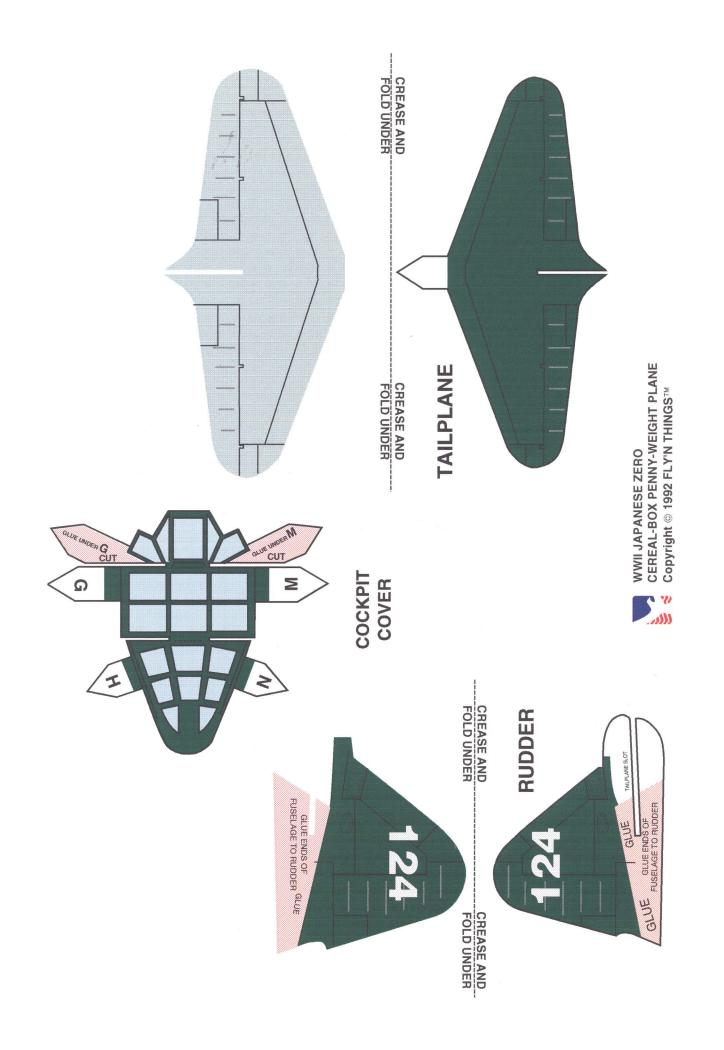


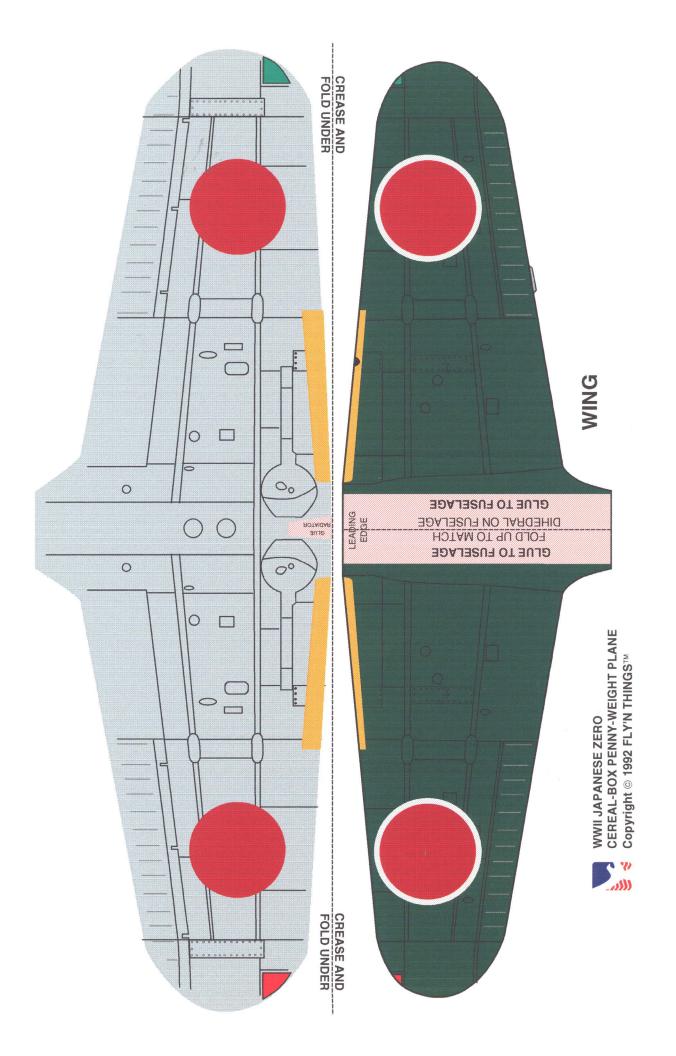


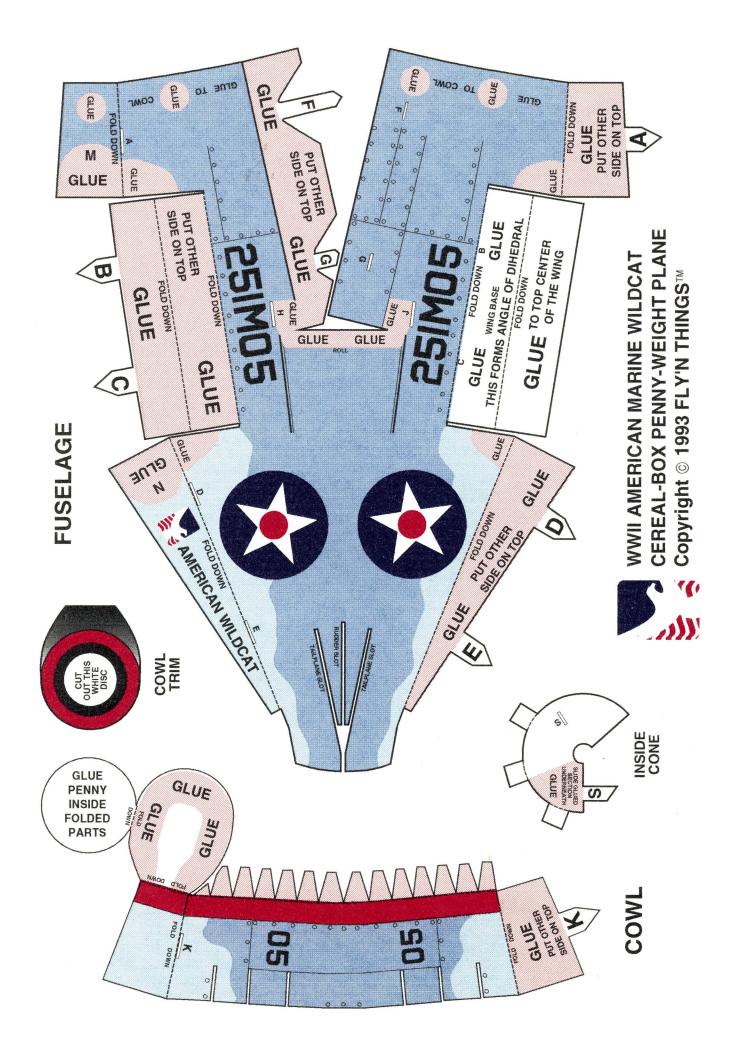


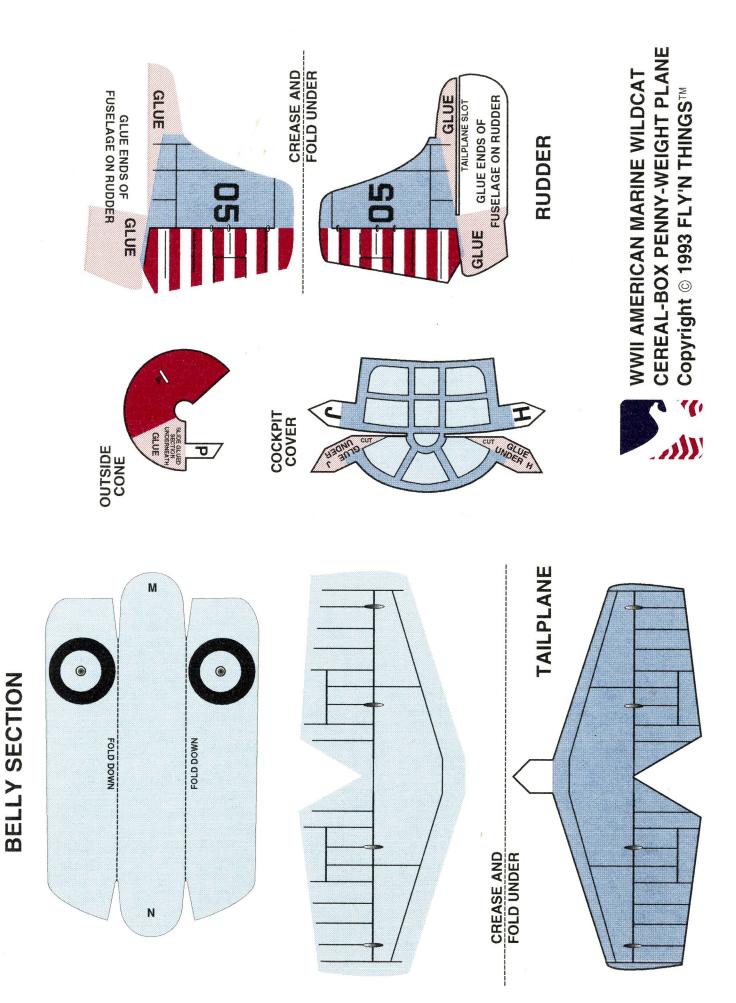


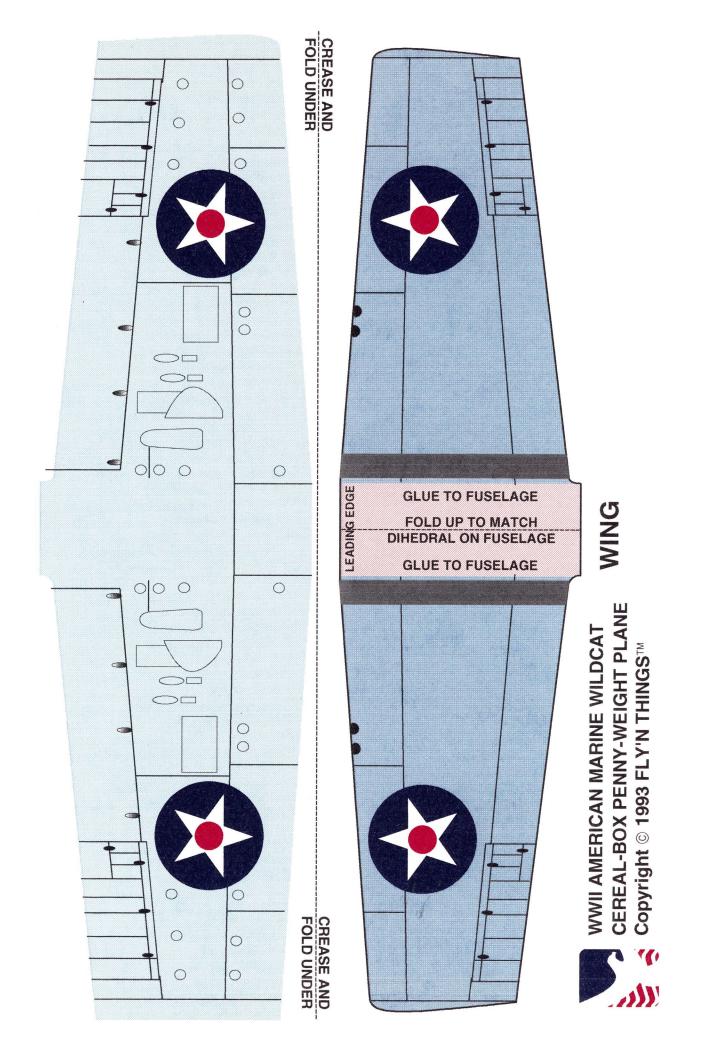


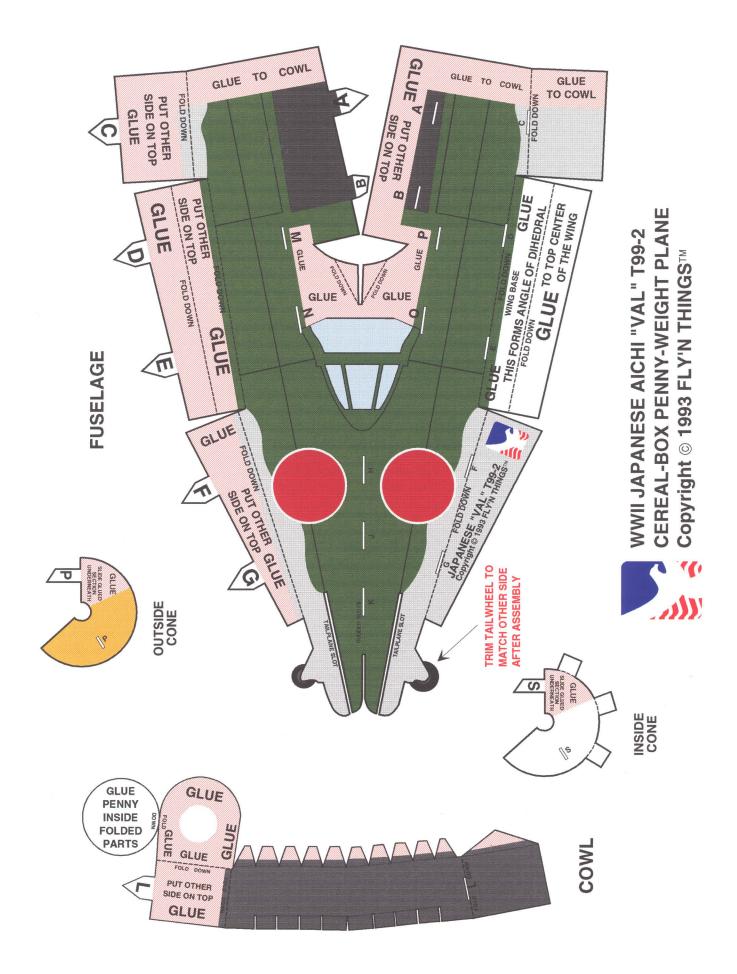


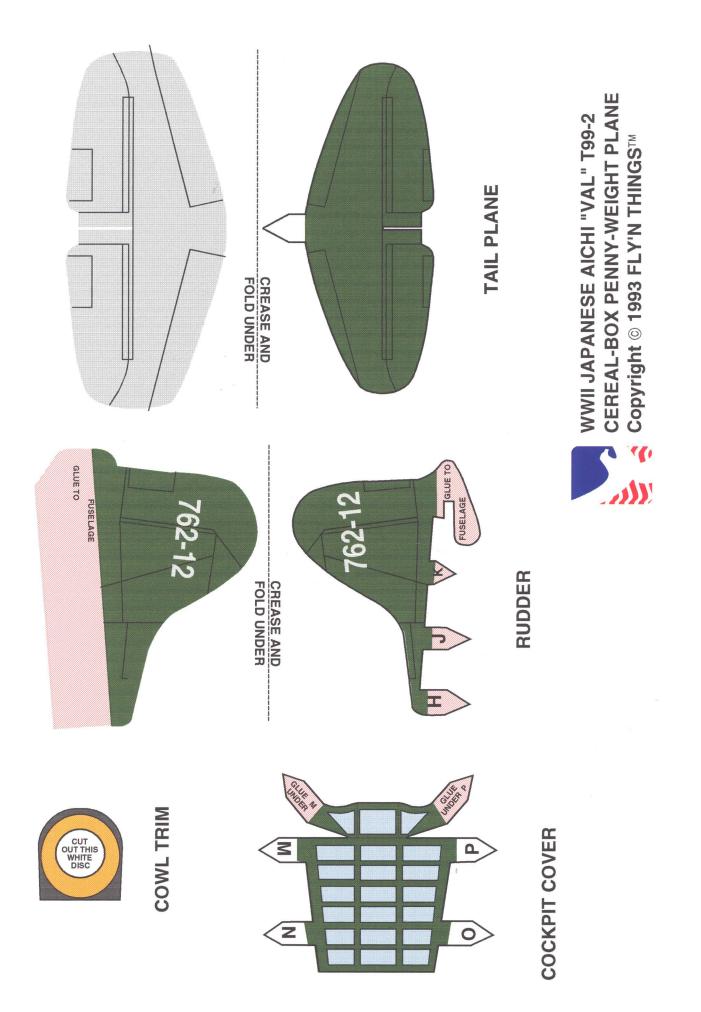


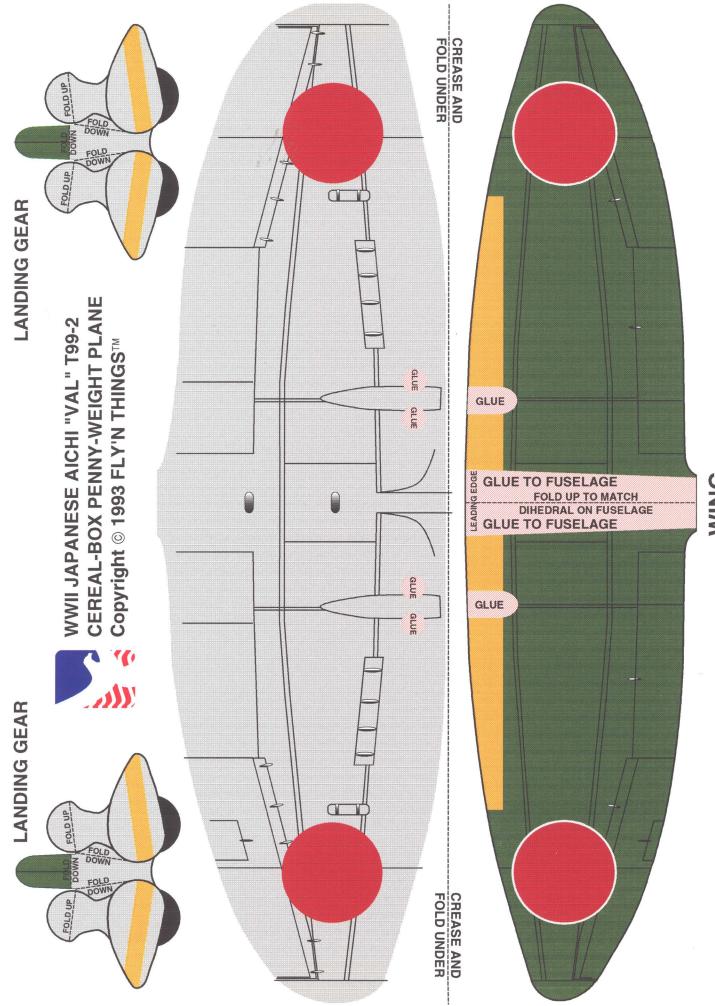












WING

