PENNY-WEIGHT FLYING PAPER AIRPLANES

Cut, Fold & Fly – WWII Pacific, Volume 2 (alternate color schemes)

Phil Koopman, Sr.

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- How to Fly
- P40 (US red ball; v2)
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- Zero (Vector Blue; v4)
- Zero (Blue/red; v5)
- Wildcat (Gray/yellow; v2)
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- Val (Gray; v2)
- Hellcat (Vector 1943; v2)
- Hellcat (v3)
- Hellcat (Vector; v4)
- Dauntless (Gray, v2)
- BONUS: FW 190 (Vector)



Notes:

- These are alternate color schemes for some of the same designs as in volume 1.
 Some models are vector graphics rather than scans.
- 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 Zerd. 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.

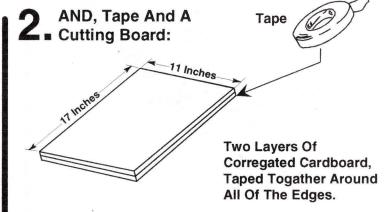
Our last suggestion is the penny weight. Our models were designed to use the early copper pennies for nose weight. Starting in 1983 the US. penny was lightened. Check the date and use pennies dated 1982 or earlier. Or if you have to use the light pennies, and the model stalls, add a tiny piece of modeling 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!

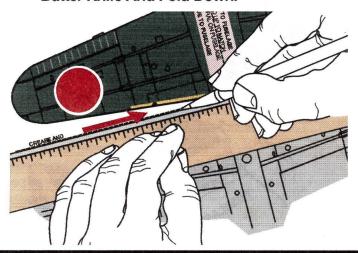
FLY'N THINGS™

Penny Weight Paper Models Building & Flying Instructions

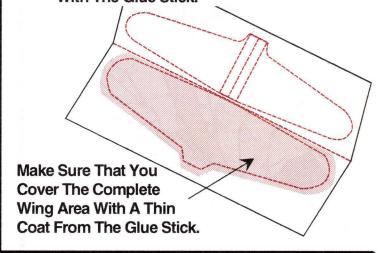




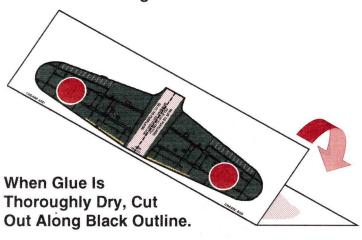
Score Along Dotted Line Of Wing With The Used Ball-Point Pen Or A Smooth-Edge Butter Knife And Fold Down.



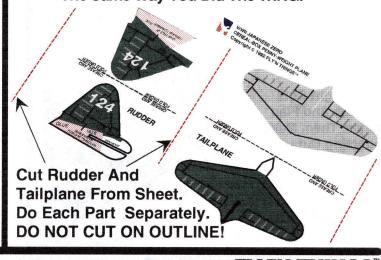
With Printed Side Down,
Coat ONE Inside Surface
With The Glue Stick.



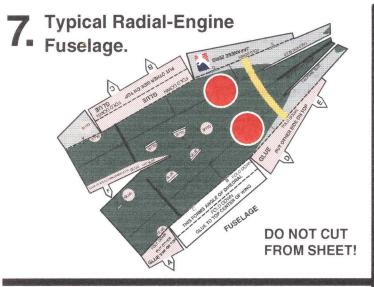
Place Wing On A Flat Surface, Fold Down And Smooth Out Glue. Weight Down So The Glued Wing Dries Flat.

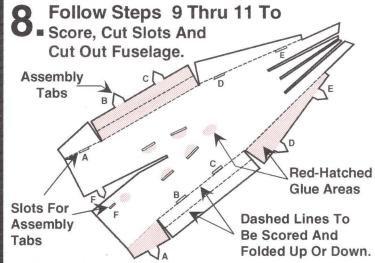


Score, Fold And Glue
The TAILPLANE And RUDDER
The Same Way You Did The WING.

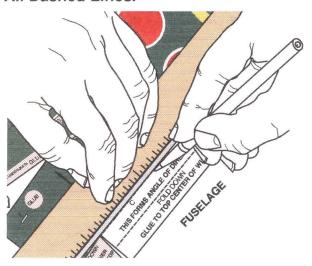


RADIAL-ENGINE FUSELAGE ASSEMBLY

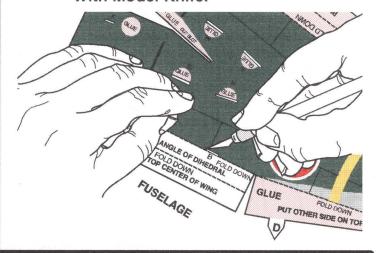


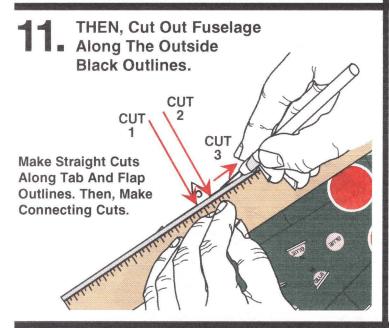


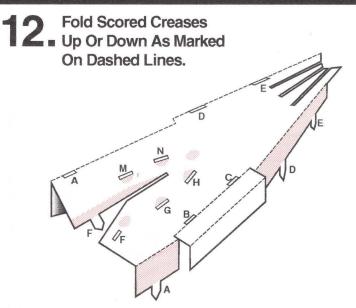
FIRST, Score Along
All Dashed Lines.

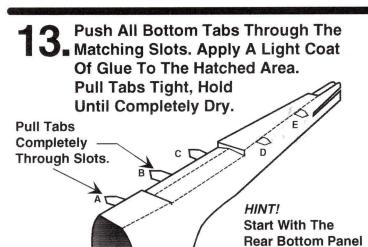


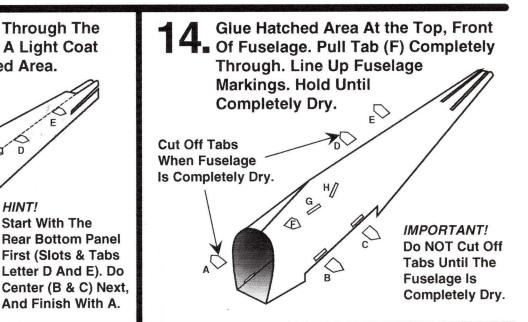
10. NEXT, Cut Out Slots For Assembly Tabs With Model Knife.









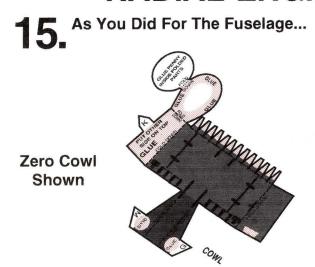


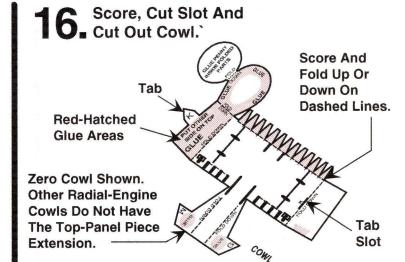
RADIAL-ENGINE COWL ASSEMBLY

First (Slots & Tabs

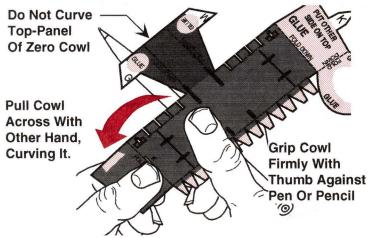
Letter D And E). Do

And Finish With A.

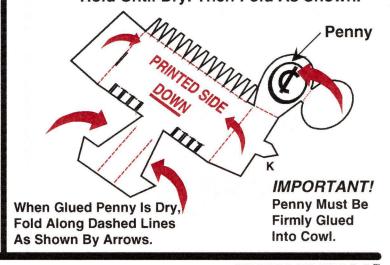




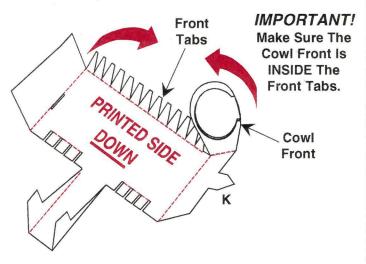




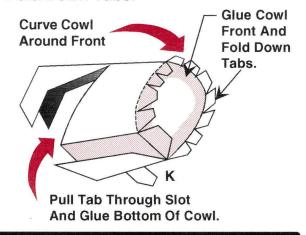
Glue Penny To Cowl, And Fold
Over Big Tab. Use Plenty Of Glue. Hold Until Dry. Then Fold As Shown.



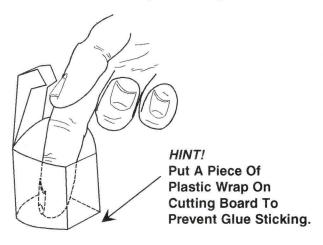
19 After Cowl Is Curved And Folded, Shape Around Cowl Front.



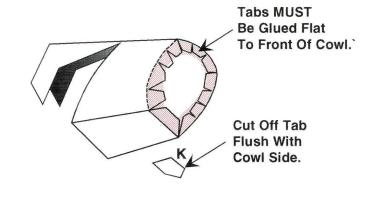
20 Pull Tab Through Slot, And Glue Bottom Of Cowl. Align And Hold Until Dry. Glue Front Of Cowl And Fold Down Tabs.



When Tabs At Front Of Cowl Are
In Place, Turn The Cowl As Shown
And Hold Firmly Until Dry.

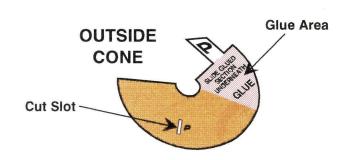


22 Check To Make Sure All Tabs Are Glued Flat To The Front Of Cowl. Reglue If Needed. Then, Trim The Bottom Tab Flush With Side.

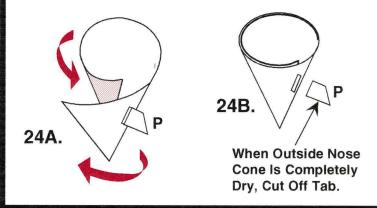


NOSE CONE ASSEMBLY

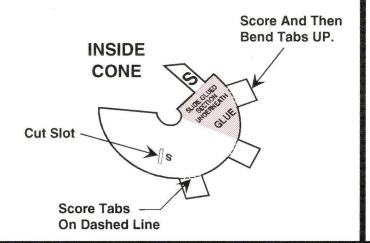
23 Cut Slot In Outside Nose Cone.
Cut To Outline And Curve Over
A Pen As You Did The Cowl.



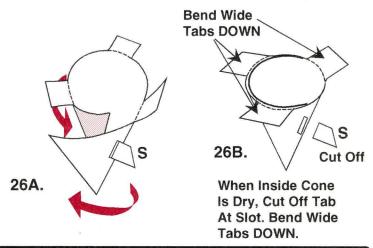
24 Apply Glue To Red-Hatched Area.
Pull Tab Through Slot. Curve The
Outside Around. Hold Until Dry.



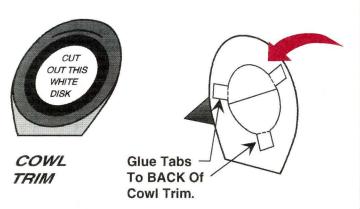
As You Did With The Outside Cone, Cut Slot And Curve Inside Cone. Then, Bend Tabs Up.



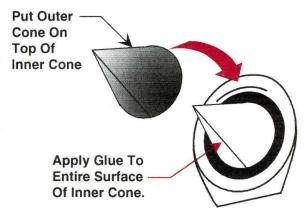
26. Apply Glue To Red-Hatched Area. Pull Tab Through Slot. Curve The Outside Around. Hold Until Dry.



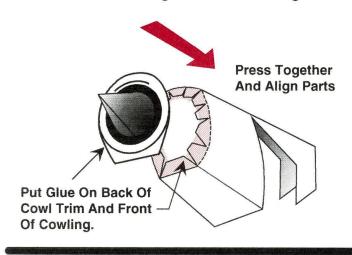
27 Cut Out White Center Disk Of Cowl Trim. Then, Cut Out Cowl Trim On Outline. Insert INSIDE Cone From Back. Glue In Place.



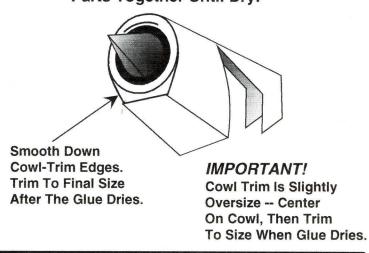
28 Apply Plenty Of Glue To The Inside Cone. Slip The Outside Cone On Top. Hold Until Dry.



29 Apply A Coat Of Glue To The Back
Of The Cowl Trim And The Front Of
The Cowling. Press Parts Together.

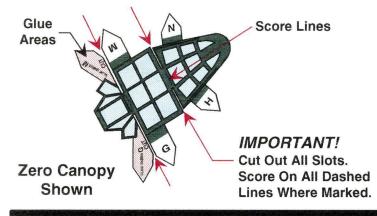


Check Alignment, and Smooth Cowl-Trim Edges Down. Hold Parts Together Until Dry.

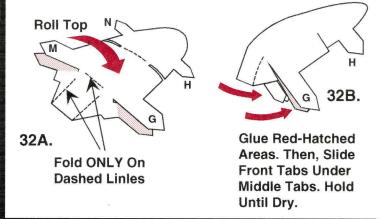


BUBBLE CANOPY ASSEMBLY

Cut Out The Canopy Along The
Outlines. Make Sure All Slots
Are Cut Out As Indicated On Part.

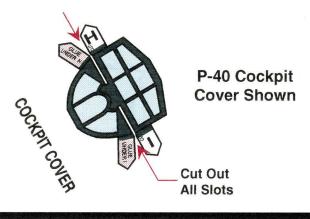


32. ROLL... Do Not Fold Top Of Canopy. Fold Only On The Dashed Lines.

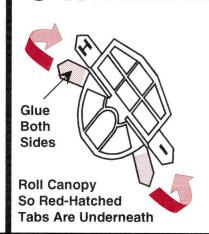


STANDARD CANOPY ASSEMBLY

33 Like The Bubble Canopy, Cut Along Outline, Making Sure That All Slots Are Cut Out.



34. Roll Canopy. Fold ONLY On Dashed Lines.

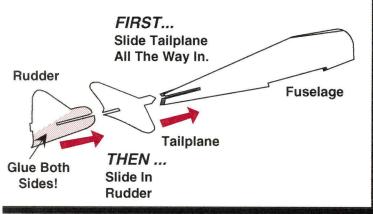


Glue Red-Hatched Area, And Slide Underneath. Hold Until Glue Dries

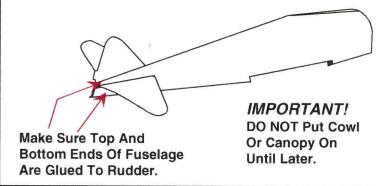


FINAL ASSEMBLY RADIAL-ENGINE PLANES

35 Coat Red-Hatched Area Of Rudder With Glue. Slide Tailplane All Of The Way In. Then, Slide Rudder In.



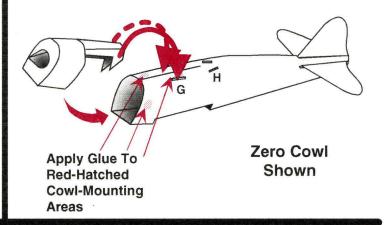
Glue Ends Of Fuselage To Rudder.
Check Vertical And Horizontal
Alignment Of Rudder And Tailplane.
Hold Until Glue Dries.



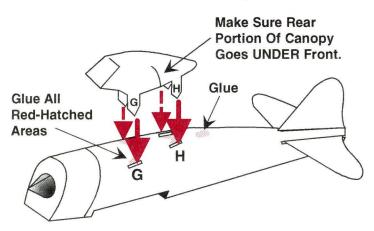
37 Apply Glue To The Red-Hatched Cowl-Mounting Areas. Then, Slide The Cowl All The Way On Over The Fuselage.

IMPORTANT! DO NOT ATTACH COWL IF THE PLANE HAS A BELLY PAN. SEE STEPS 43 THROUGH 46. Slide Cowl Over The Fuselage Cowl-Mounting Glue Areas

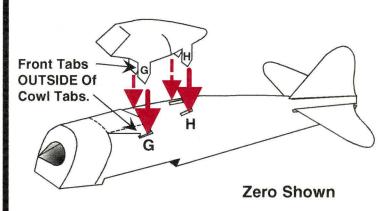
For Planes With A Top-Panel Extension On The Cowl, Hook Tabs Into Fuselage Slots As You Slide The Cowl On.



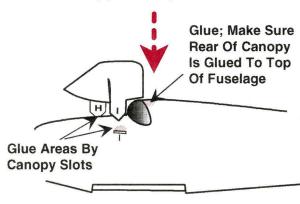
Cement Glue Spots Next To Canopy Slots. Slide Canopy In Place. Hold Until Dry.



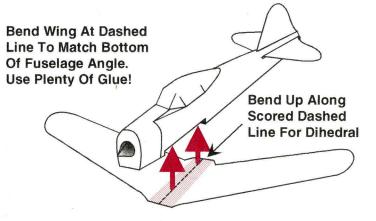
For Planes With Cowl Extension,
Make Sure The Front Tabs Of The
Canopy Go On The Outside.



Standard Canopies Mount In The Same Way. Make Sure Rear Part Of Canopy Overlaps The Front.

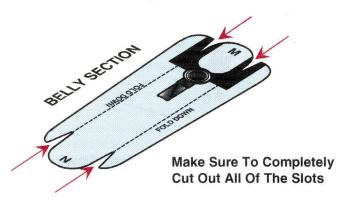


Fold Wing Up EXACTLY Along
The Dashed Line In Glue Area.
Glue Wing FIRMLY To Bottom
Of Fuselage. Hold Until Dry.

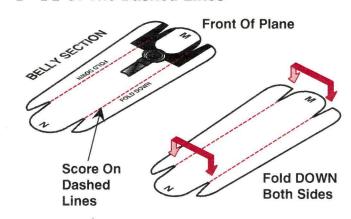


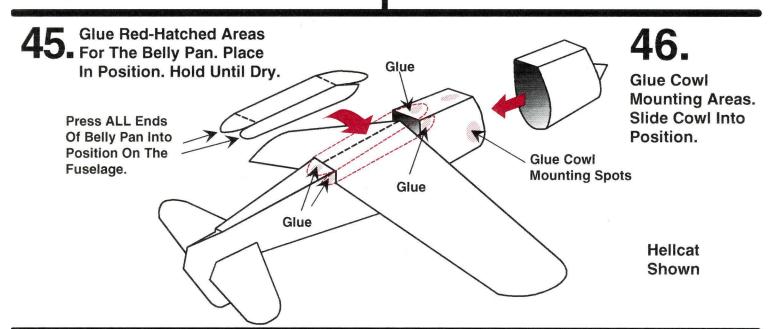
BELLY PAN ASSEMBLY

43 Score Along Dashed Lines.
Cut Out Belly Pan On Outline.

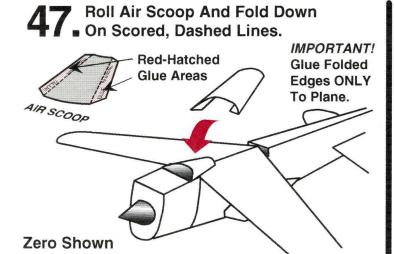


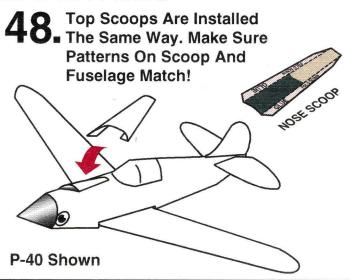
Fold DOWN On Both Of The Dashed Lines





ADDING FINAL DETAILS

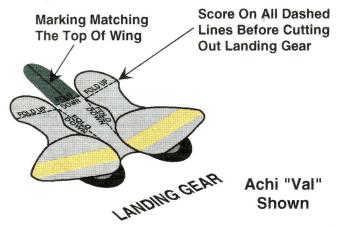




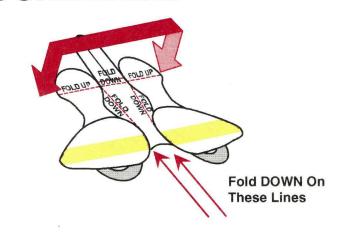
FIXED LANDING GEAR

49 Score Along All Dashed Lines.

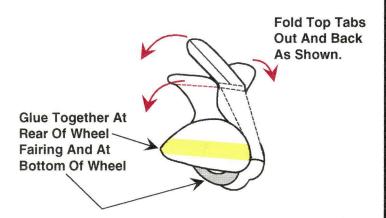
Cut Out Landing Gear On Outline.



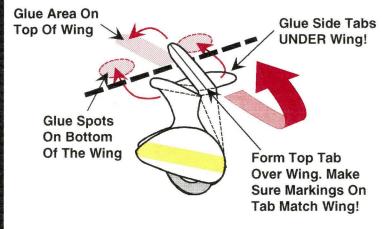
50. Fold DOWN On Dashed Lines AS Shown.



Fold Down Top Tabs As Shown.
Glue INNER Surfaces At Back Of Fairing And At Bottom Of Wheel.

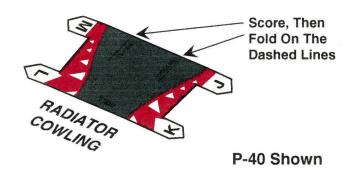


52 Glue Red-Hatched Areas On Top And Bottom Of the Wing. Slide Landing Gear Over Wing. Press Down Tabs.

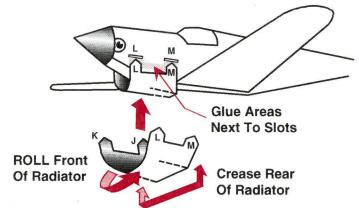


RADIATOR AND COWLING

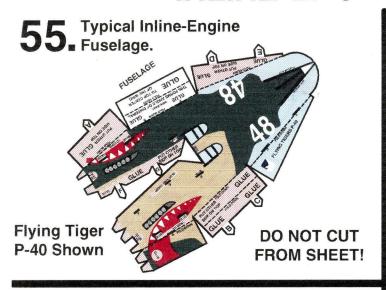
53 Typical Nose Radiator And Bottom Cowling. Score On Dashed Lines. Then, Cut Out On Outlines.



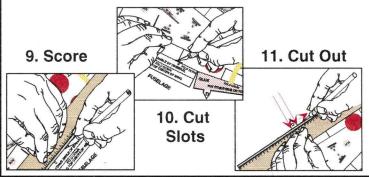
54 Glue Red-Hatched Mouting Areas. Slide Tabs Into Slots. Hold Until Dry.



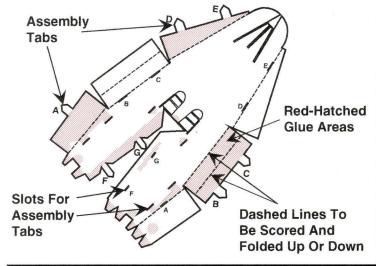
INLINE-ENGINE FUSELAGE



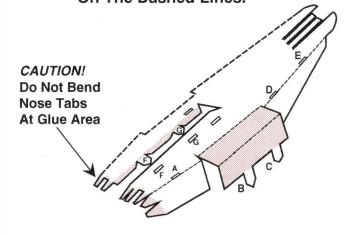
Referring To Step 57, Follow
The Instuctions of Steps 9
Through 11 To Score, Cut Slots
And Cut Out The Fuselage.



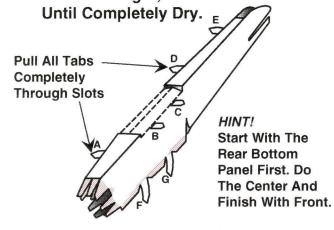
57. Refer To Building Steps 9 Through 11.



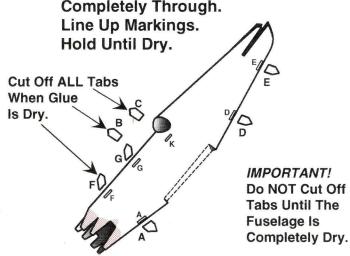
58 Fold Scored Creases
Up Or Down As Marked
On The Dashed Lines.



Push All Bottom Tabs Through The Matching Slots. Apply A Light Coat Of Glue To The Red-Hatched Areas. Pull Tabs Tight, Hold

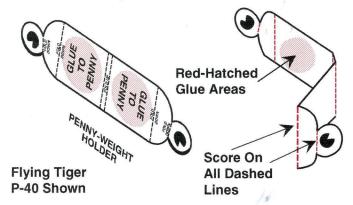


Glue Hatched Area At The Top, Front
Of Fuselage. Pull Top Tabs (F And G)
Completely Through.

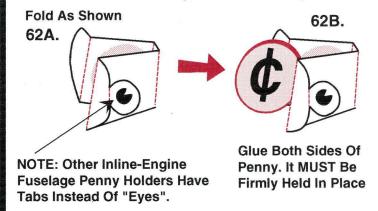


PENNY-WEIGHT HOLDER

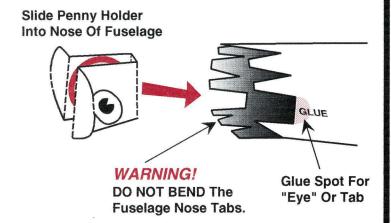
Score On Dashed Lines.
Cut Out On Outlines And
Fold Up Or Down On Lines.



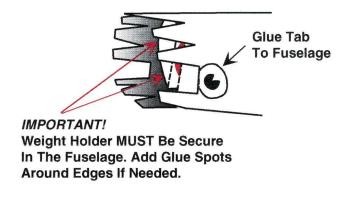
Fold As Shown. Apply Plenty
Of Glue To Both Glue Areas.
Slide In Penny, Hold Until Dry.



Slide Penny-Weight Holder Into Fuselage. Line Up The Tabs With Fuselage Slots.



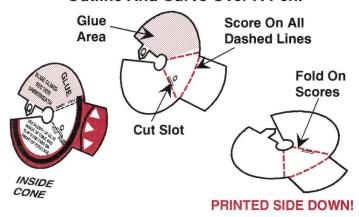
Glue Penny-Weight Holder
Tabs In Place. Hold Until Dry.
Weight Holder Must Be Secure!



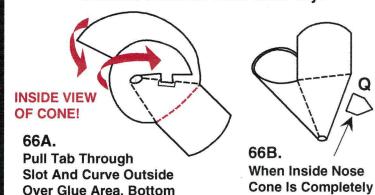
NOSE-CONE ASSEMBLY

Cut slot In Inside Nose Cone.

Score On Dashed Lines. Cut To
Outline And Curve Over A Pen.



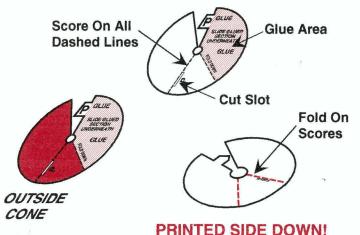
Apply Glue To Red-Hatched Area.
Pull Tab Through Slot. Curve The
Outside Around. Hold Until Dry.



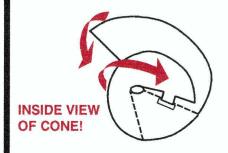
Of Cone Has STRAIGHT Sides.

Dry, Cut Off Tab.

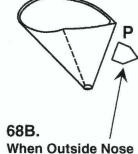
As You Did With The Inside Cone,
Score Dashed Lines, Cut Out Slot,
Cut To Outline And Curve The Cone.



Apply Glue To Red-Hatched Area.
Pull Tab Through Slot, Curve The
Outside Around. Hold Until Dry.

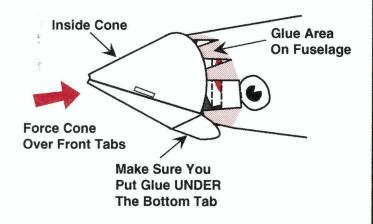


68A.
Pull Tab Through Slot
And Curve Outside Over
Glue Area. Bottom Of Cone
Has STRAIGHT Sides.

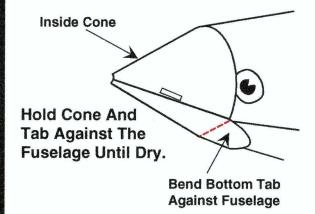


68B. / When Outside Nose Cone Is Completely Dry, Cut Off Tab.

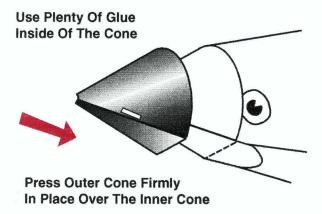
Apply Plenty Of Glue To The INSIDE Of The Cone. Force The Nose Tabs Into The Cone.



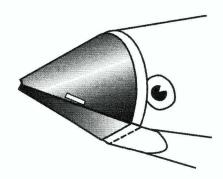
70 Hold Inside Nose Cone Against
Fuselage. Bend The Bottom Tab
Against Fuselage. Hold Cone
And Tab Until Glue Dries.



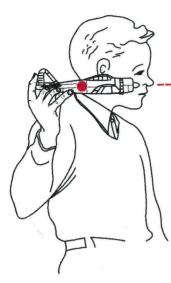
Apply Plenty Of Glue To The Inside Nose Cone. Firmly Press The Outside Cone On Top.



72 Hold Cone Until Dry. Finish
Construction By Adding Tail,
Wings, Canopy And Details As
You Did For The Radial-Engine
Planes.



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.



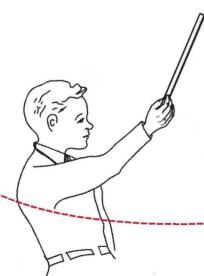
The Rudder Must Be Straight - NOT Curved Or Twisted. It Must Be Vertical And In Line With The Fuselage.





GHI WRONG

FLY WITH G-LINE INDOORS OR OUT!



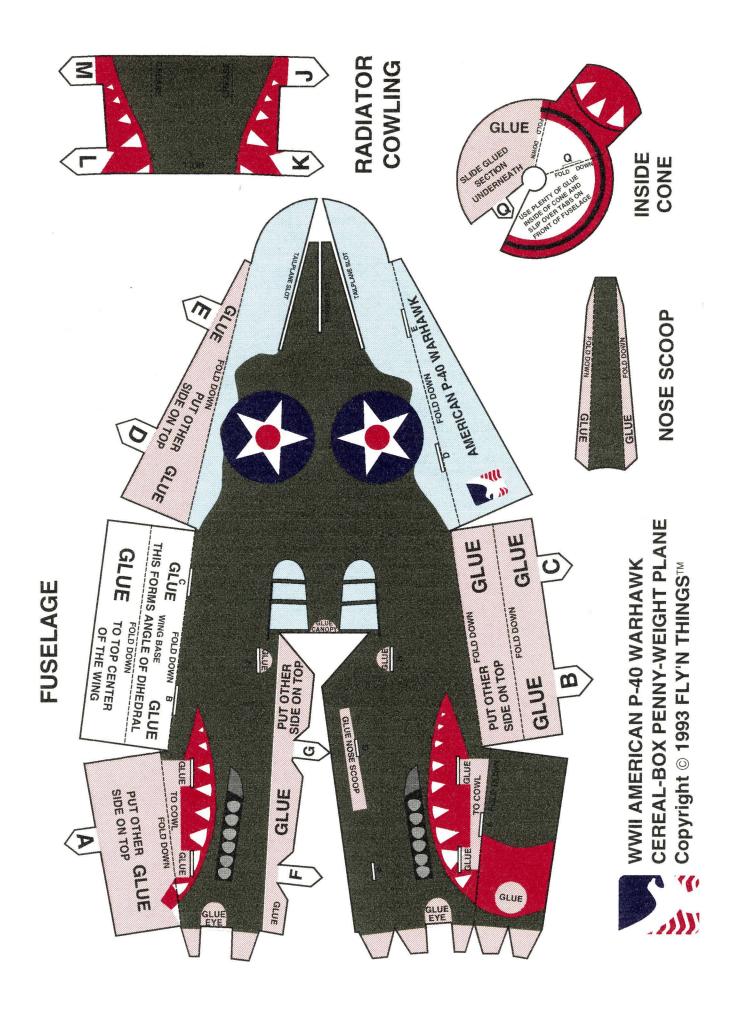
For Great Fun Indoors Or Out! Any Of Your Models
Fly With G-Line Control. You'll Soon Learn To Make
Them Loop And Even Have "Dog Fights" With A
Friend. This Picture Shows All That's Needed.

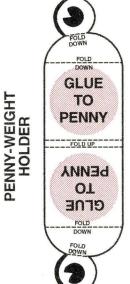
Tie A Thin String Or Thread To A Short Stick. Thread The Other End Of The Line Into The Wing As Shown Below. Start With 6 To 8 Feet Of Line. Swing The Stick Around Your Head From Right To Left.

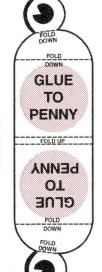
Your Plane Will Rise And Fly At the End Of The G-Line. It Obeys Your Every Move For Speed And Control. You Will Soon Be Able To Perform Loops, Dives And Landings.

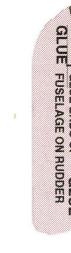


Tie A Light Line To The Leading Edge Of The Wing Near The Tip. Thread Line Through The Wing With A Needle. Tie A Large Knot.

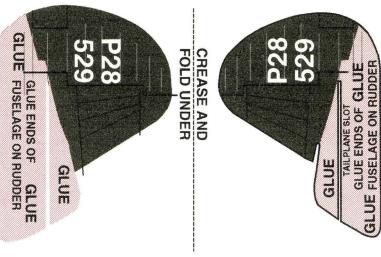


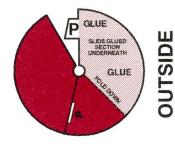


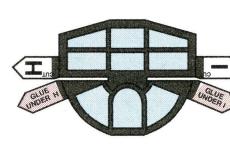




CONE

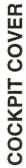


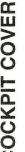




CREASE AND FOLD UNDER





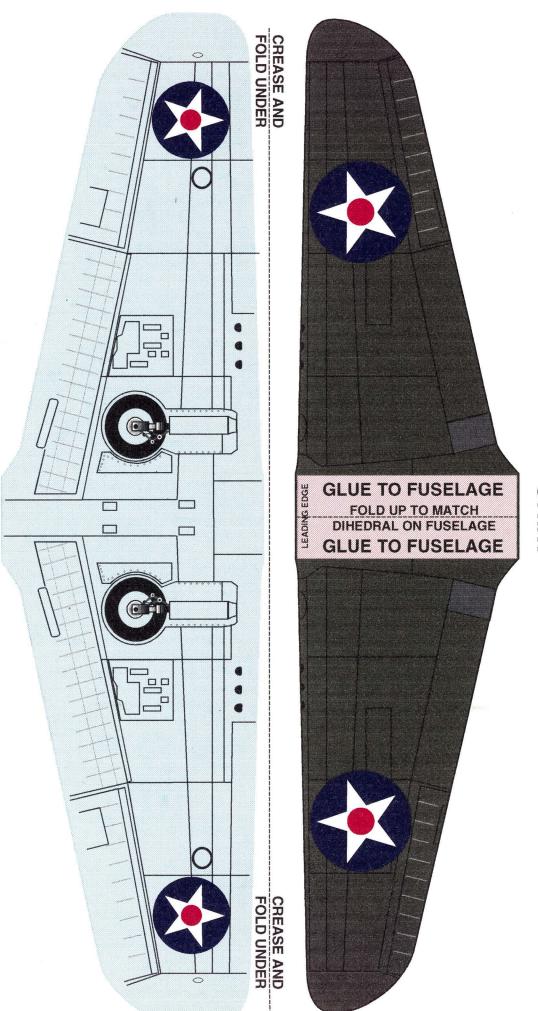


RUDDER



TAIL PLANE

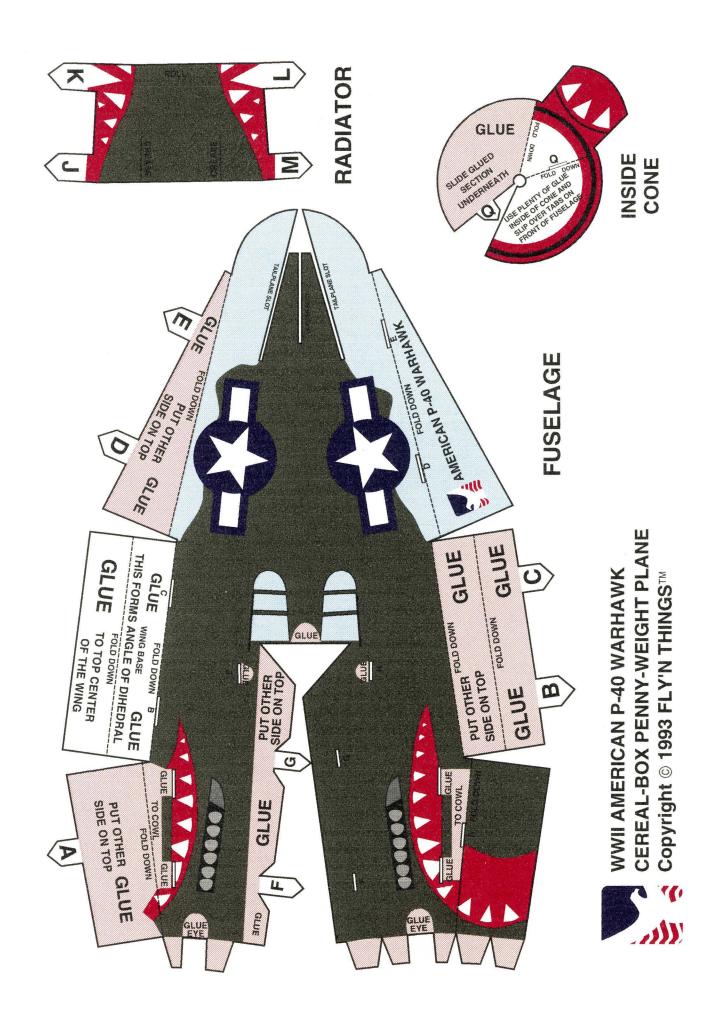


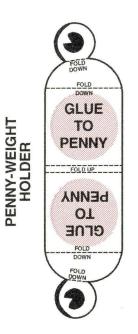


WING

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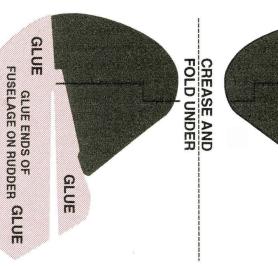




GLUE

GLUE

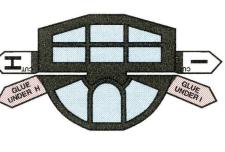
OUTSIDE CONE



FOLD UNDER



COCKPIT COVER





GLUE FUSELAGE ON RUDDER

TAILPLANE SLOT

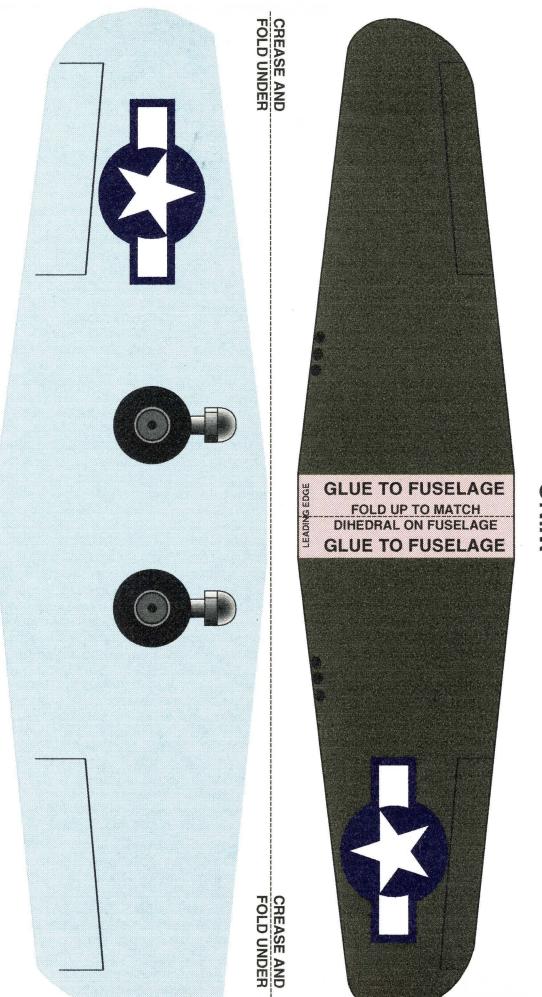
GLUE

RUDDER



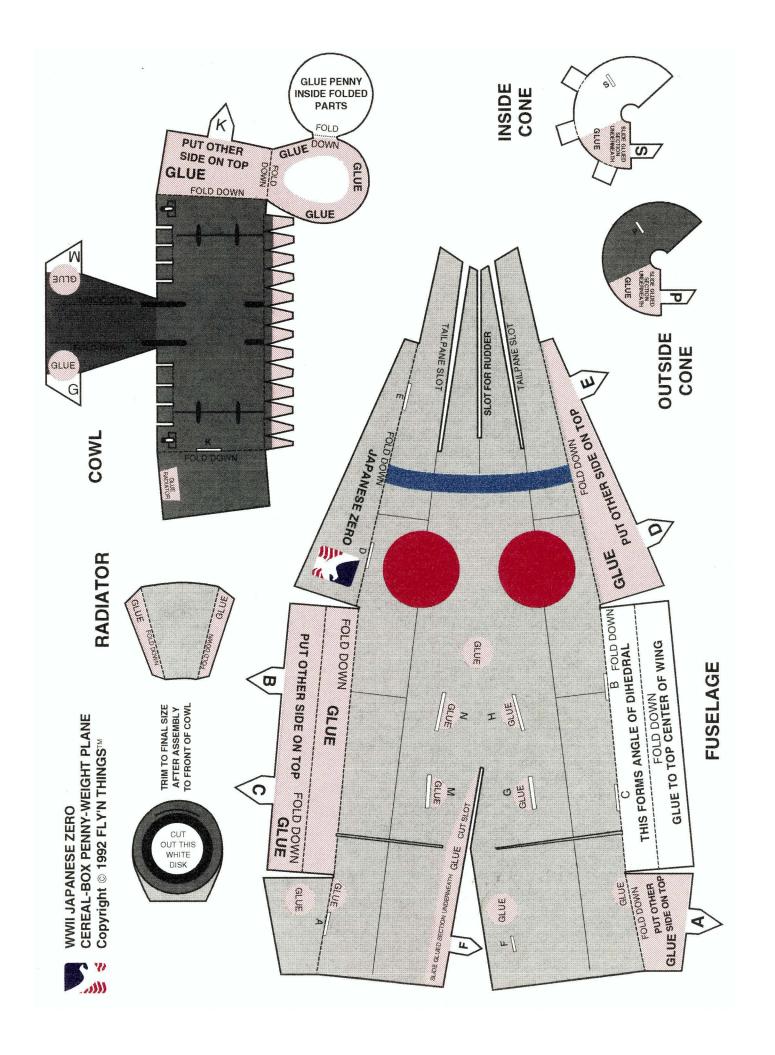
TAIL PLANE

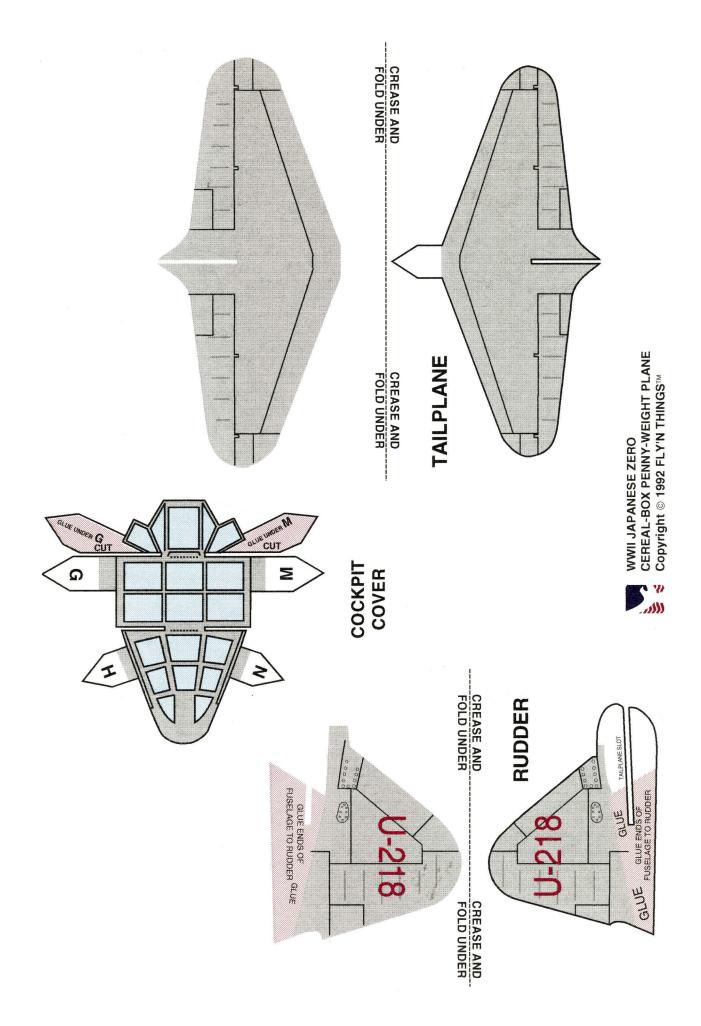


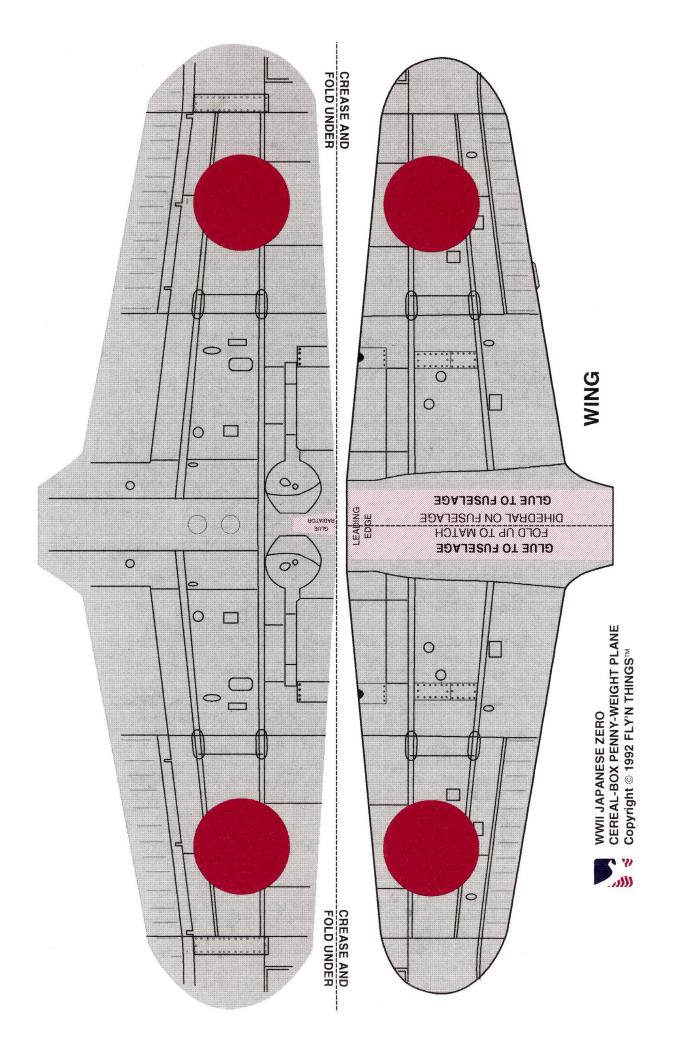


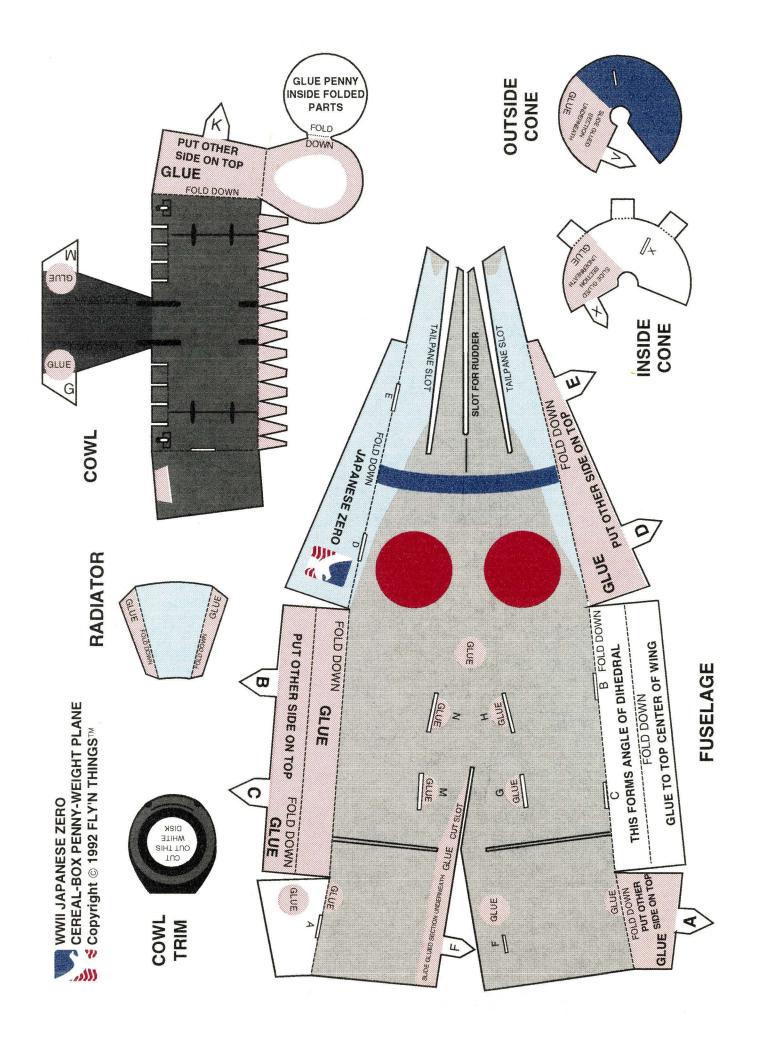
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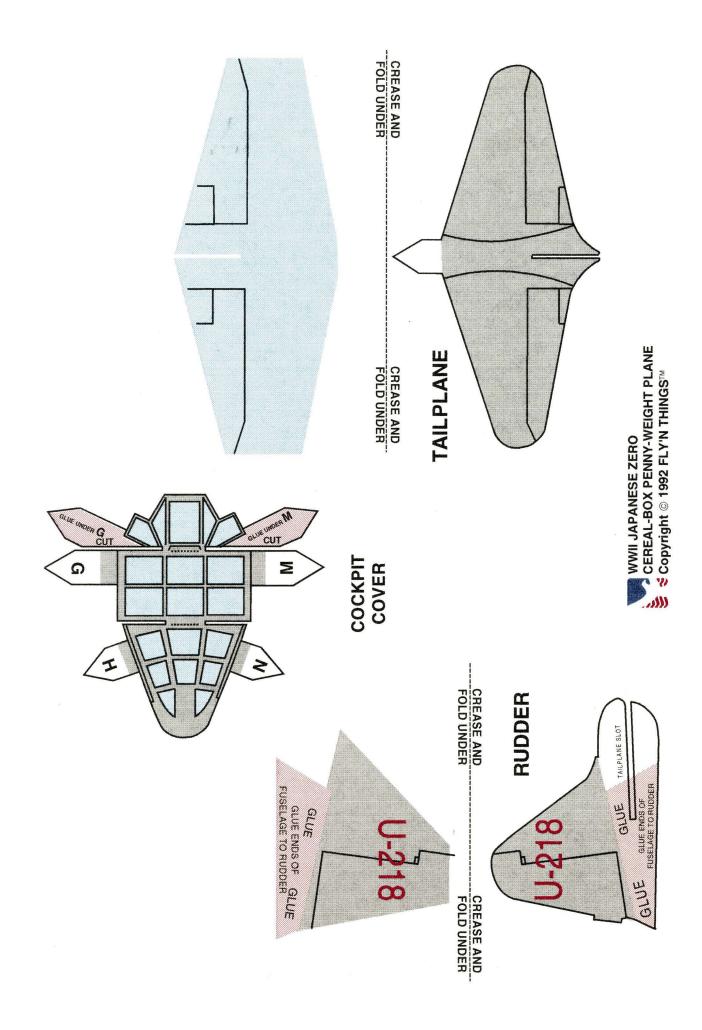
WWII AMERICAN P-40 WARHAWK
CEREAL-BOX PENNY-WEIGHT PLANE
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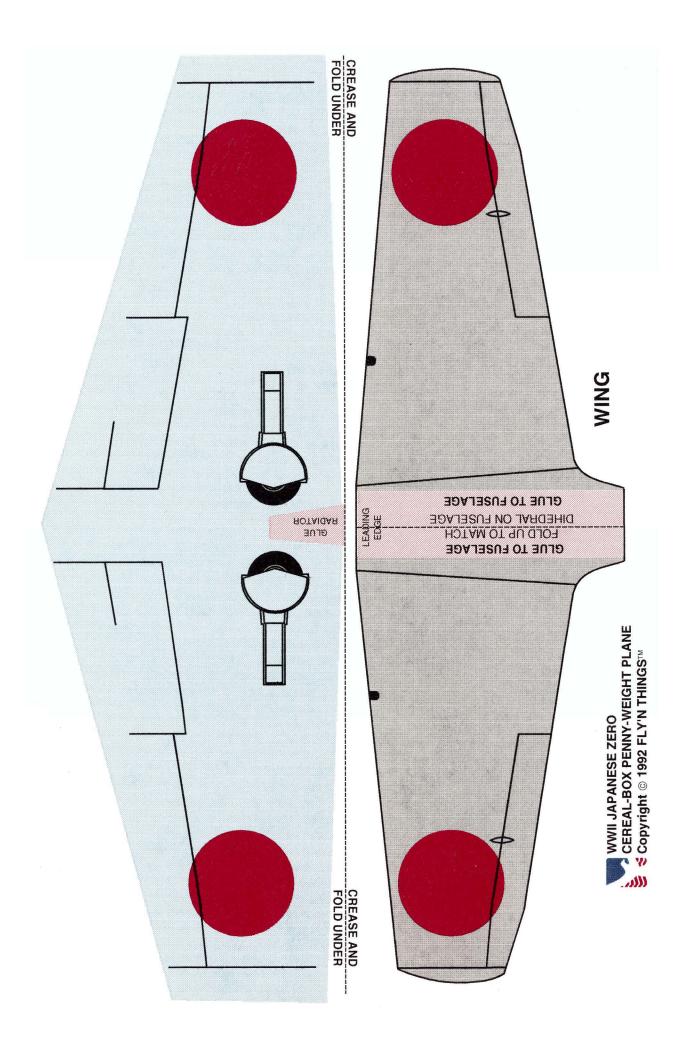


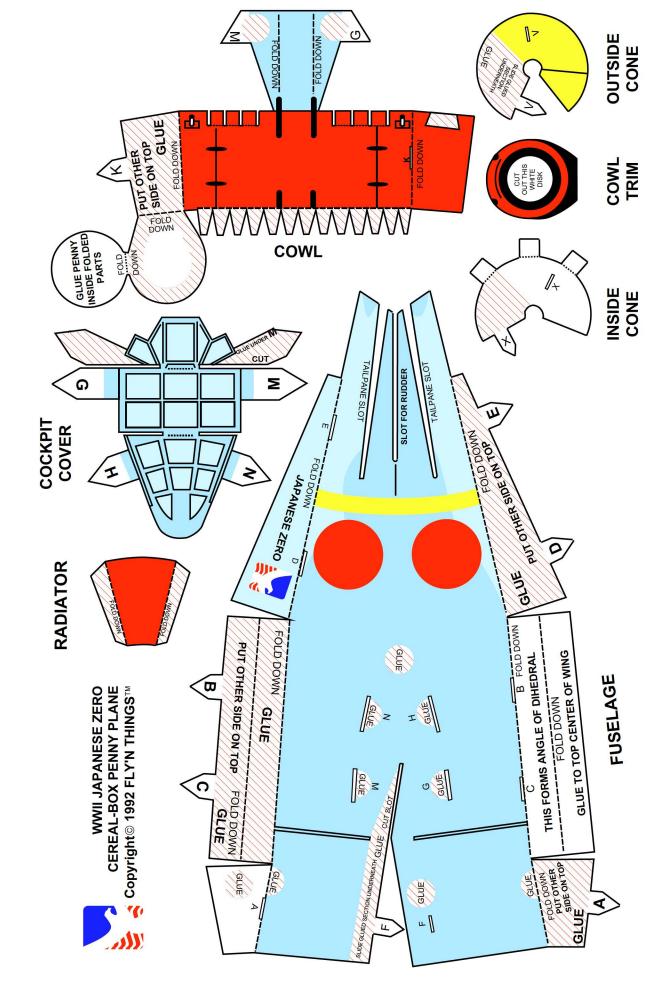


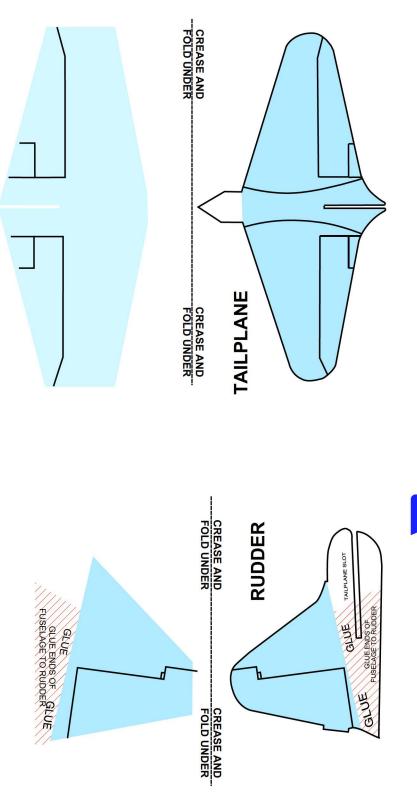




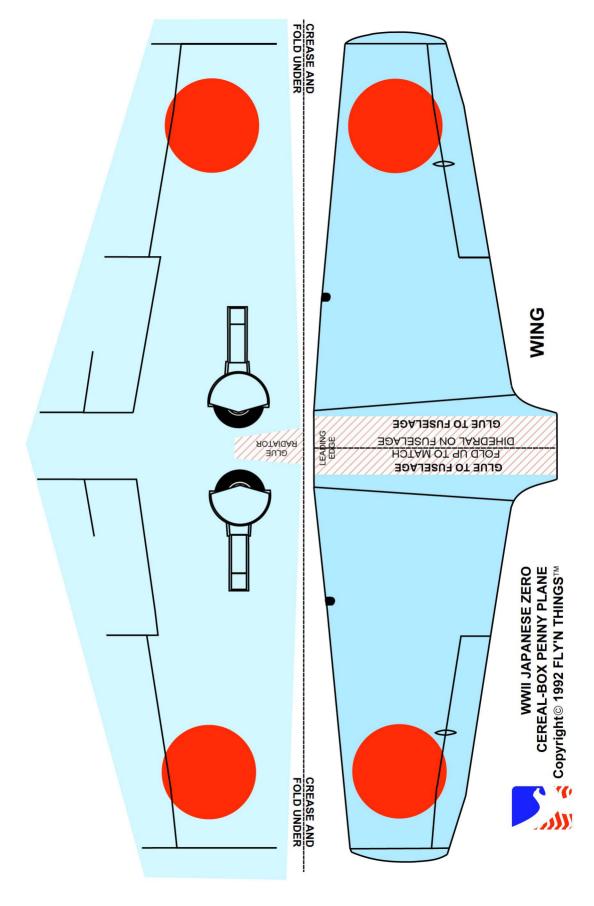


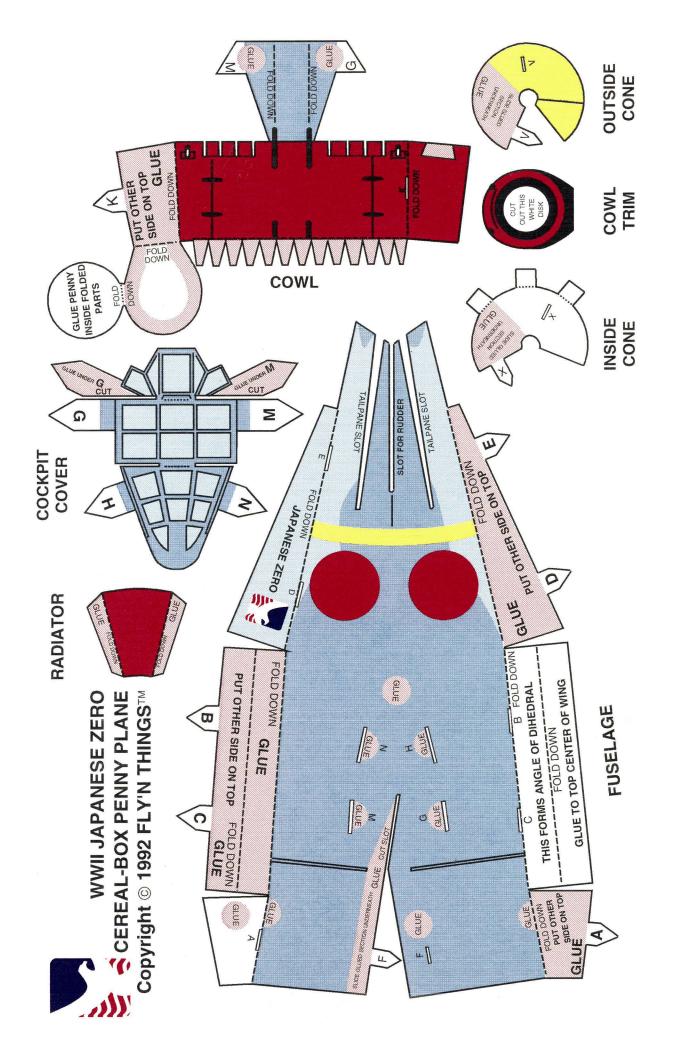


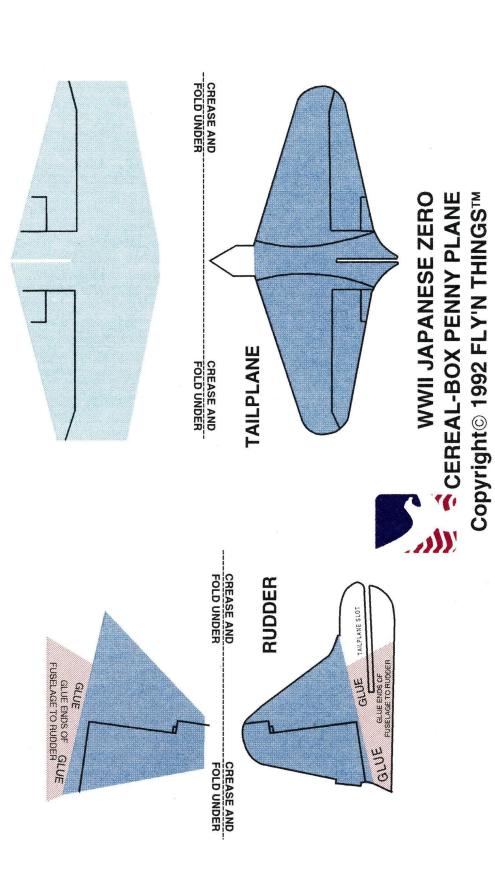


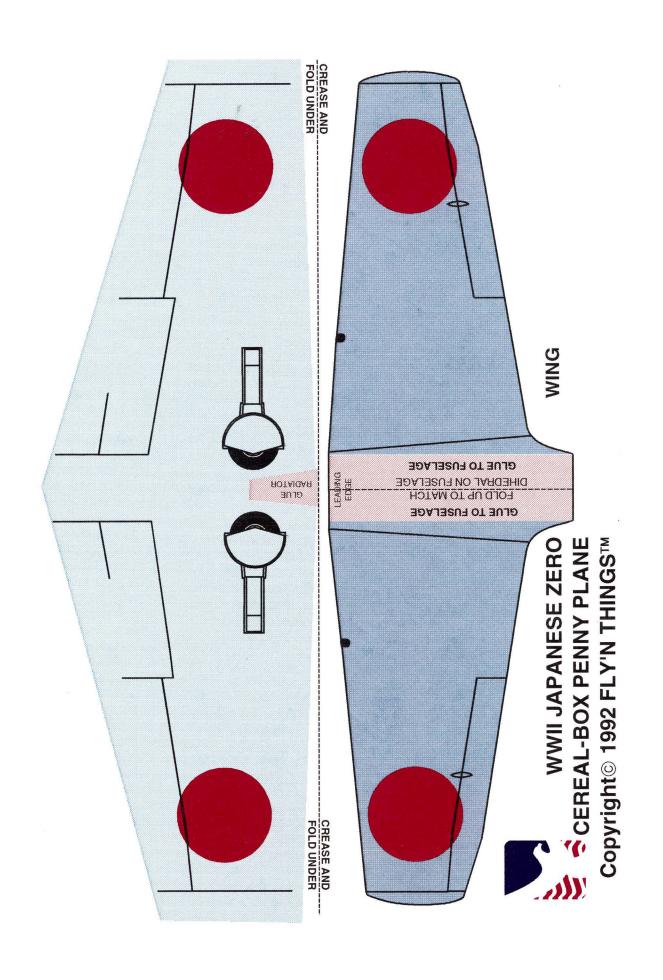


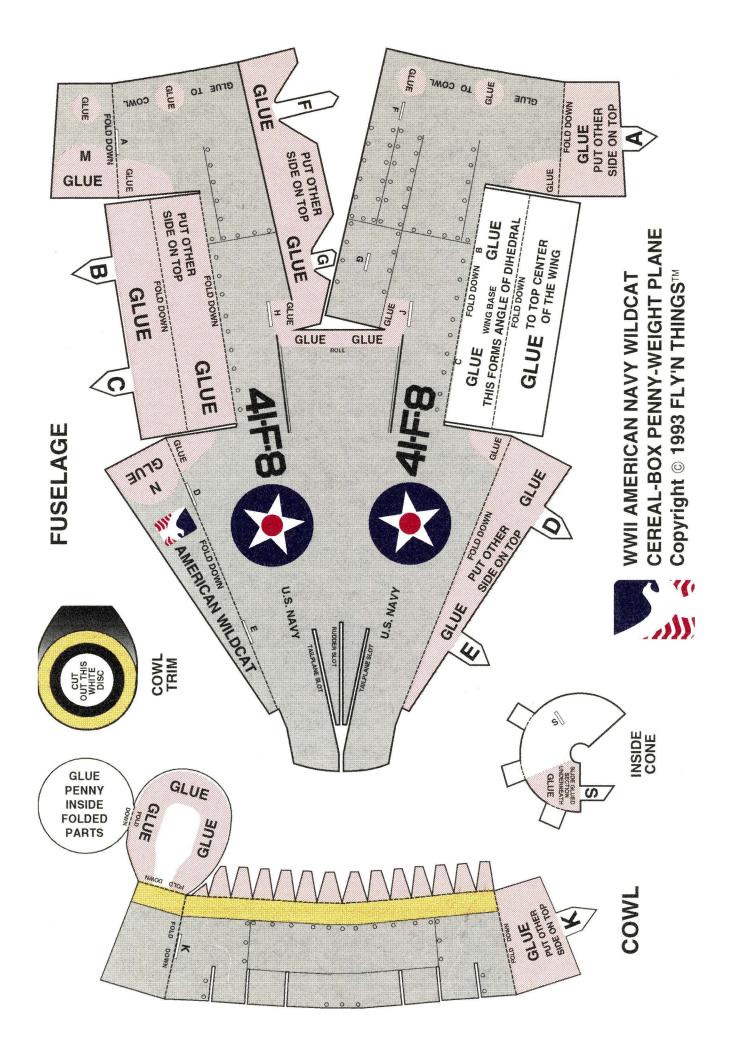




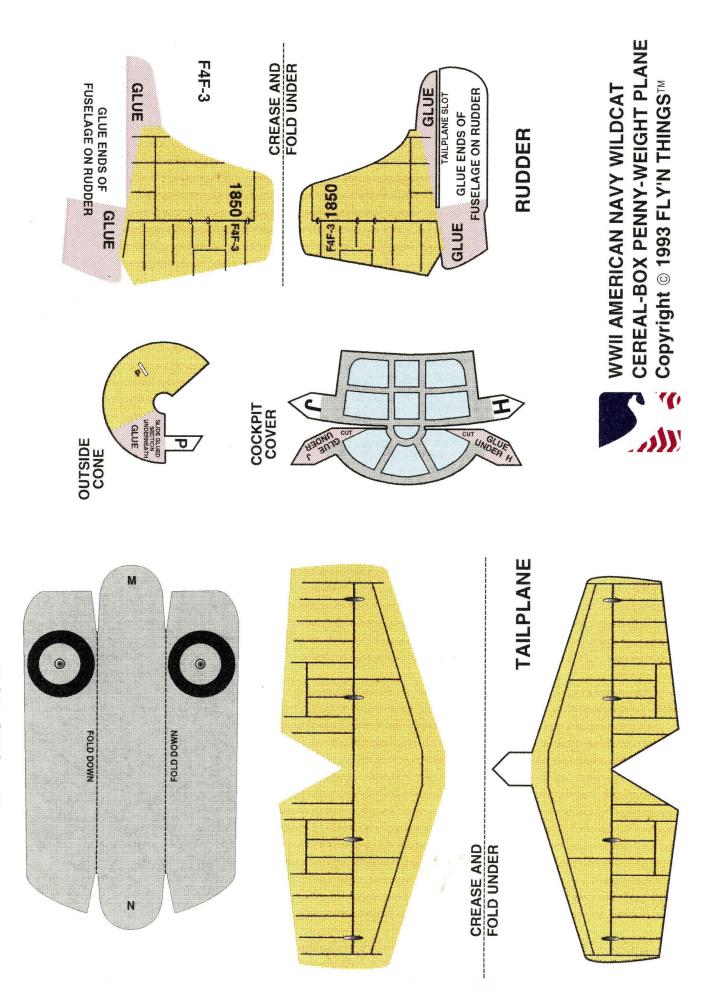


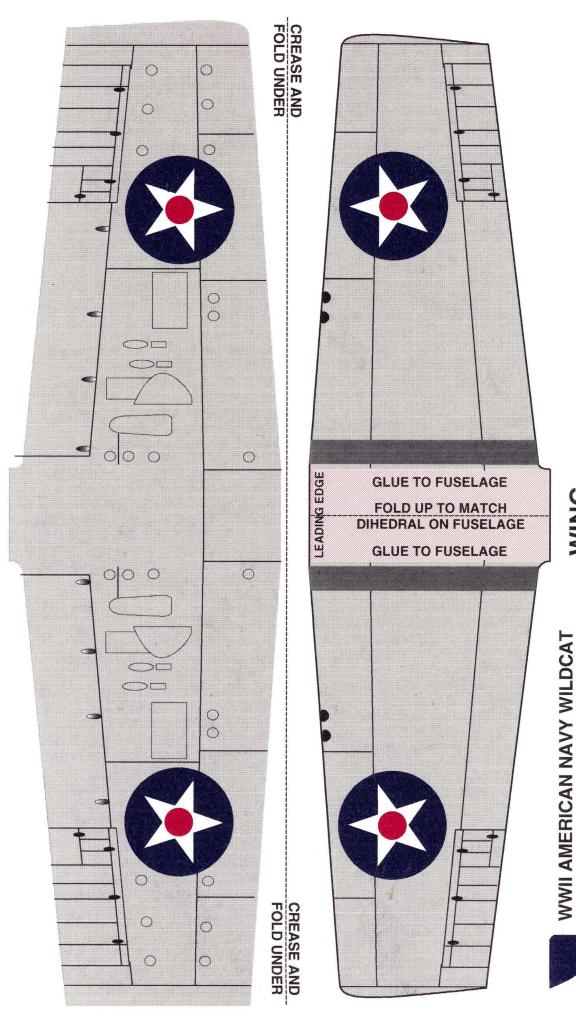






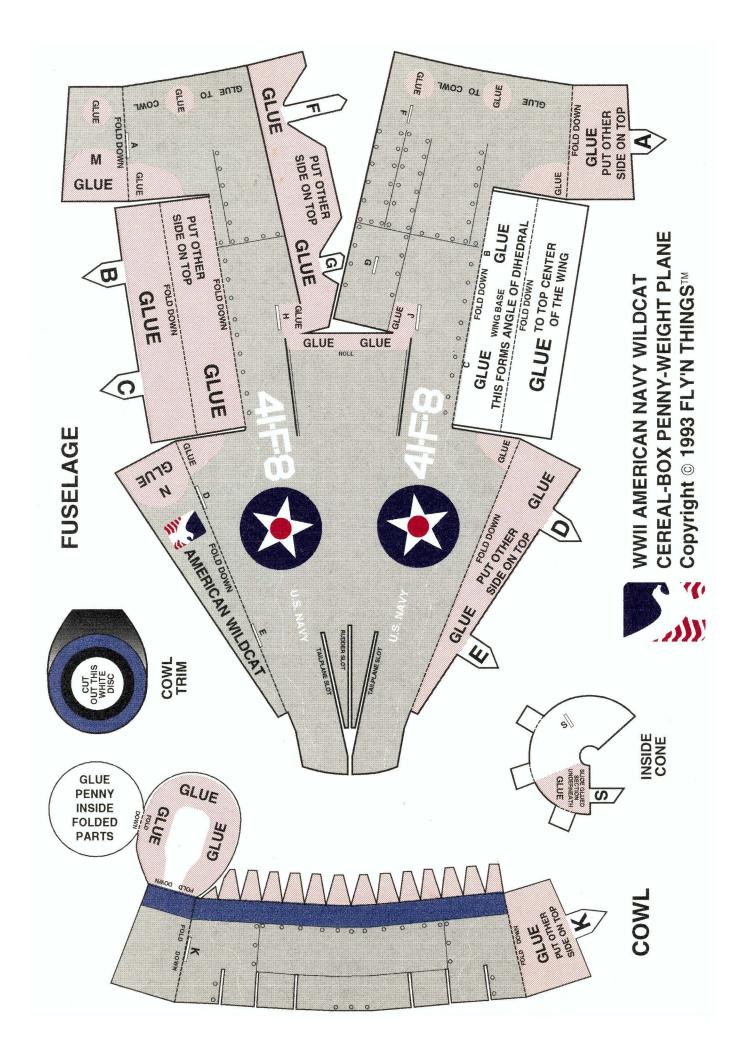
BELLY SECTION



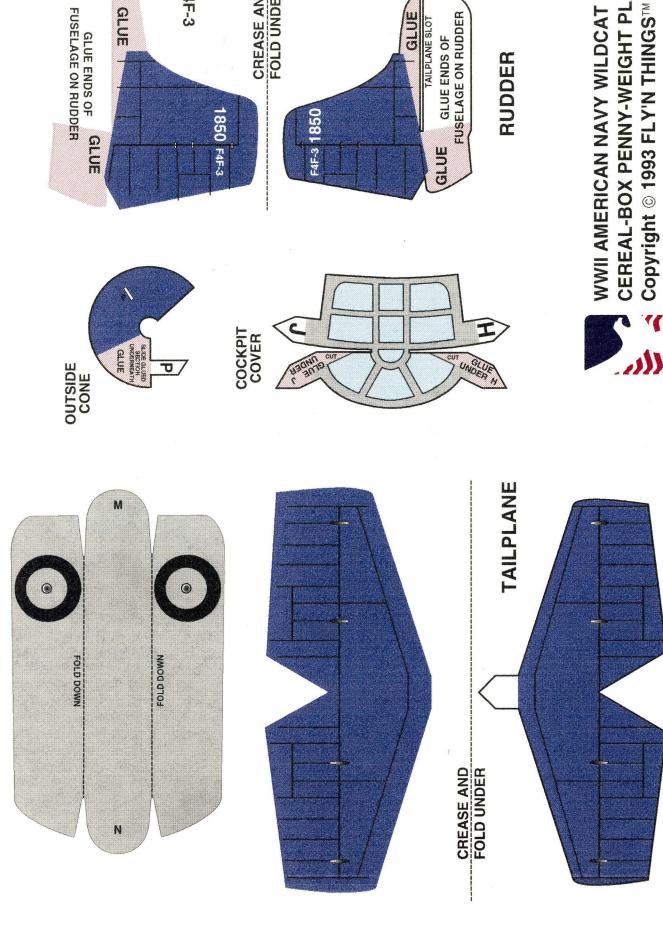


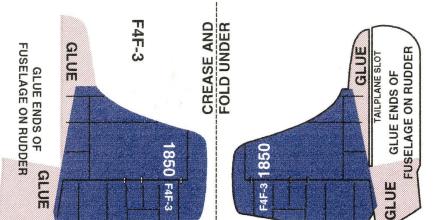
WING

CEREAL-BOX PENNY-WEIGHT PLANE
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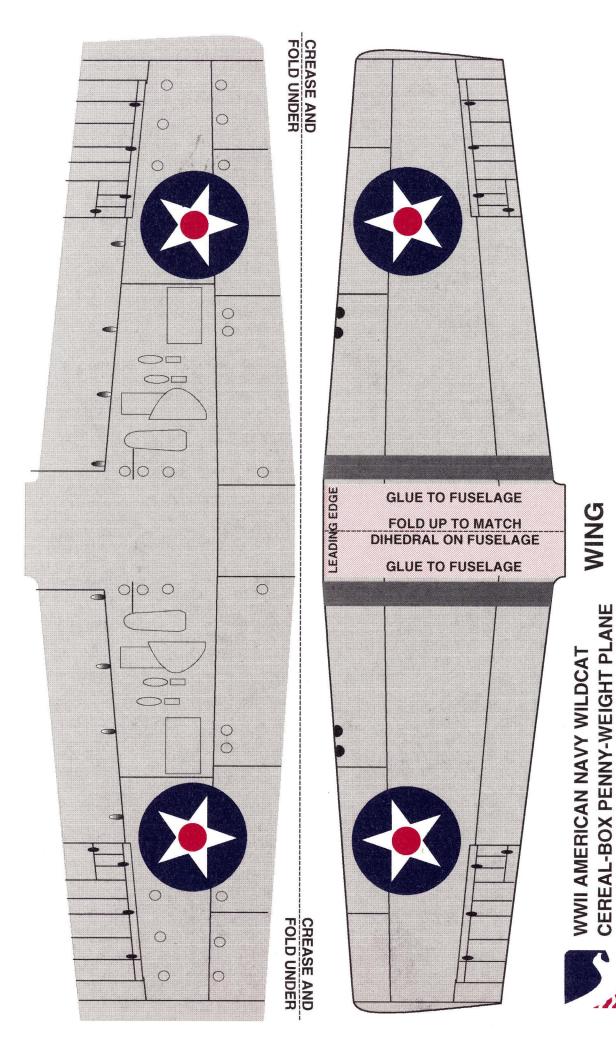
BELLY SECTION



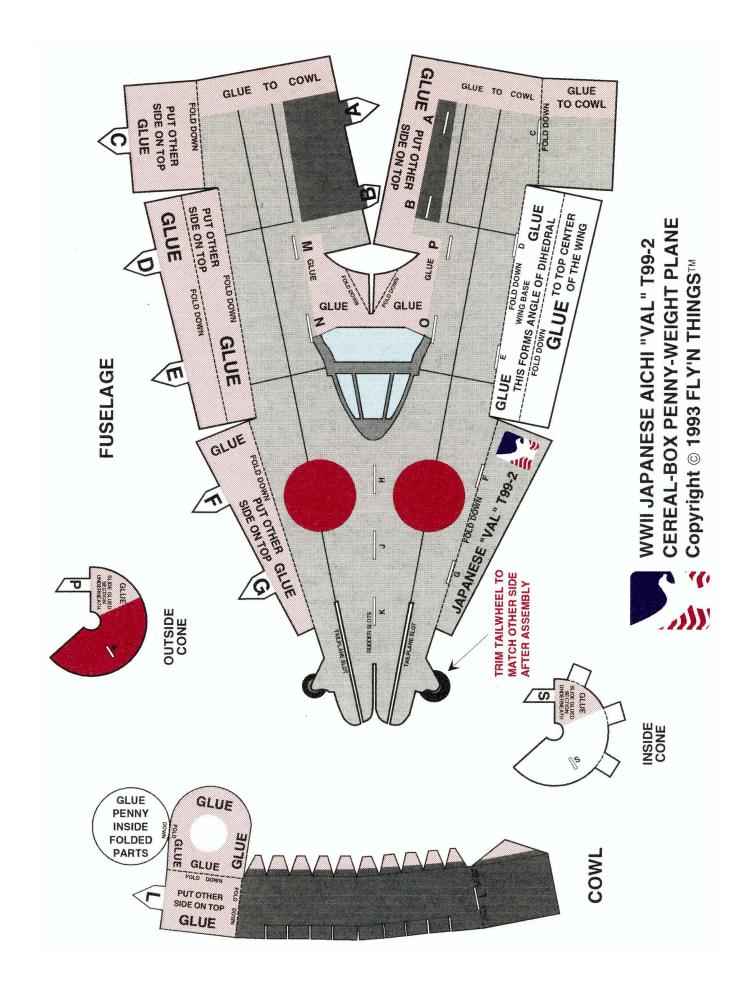


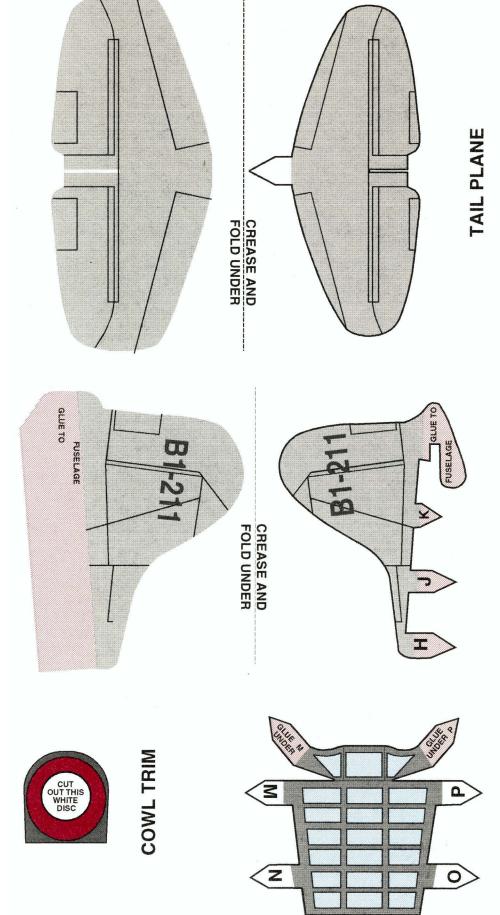


CEREAL-BOX PENNY-WEIGHT PLANE WWII AMERICAN NAVY WILDCAT



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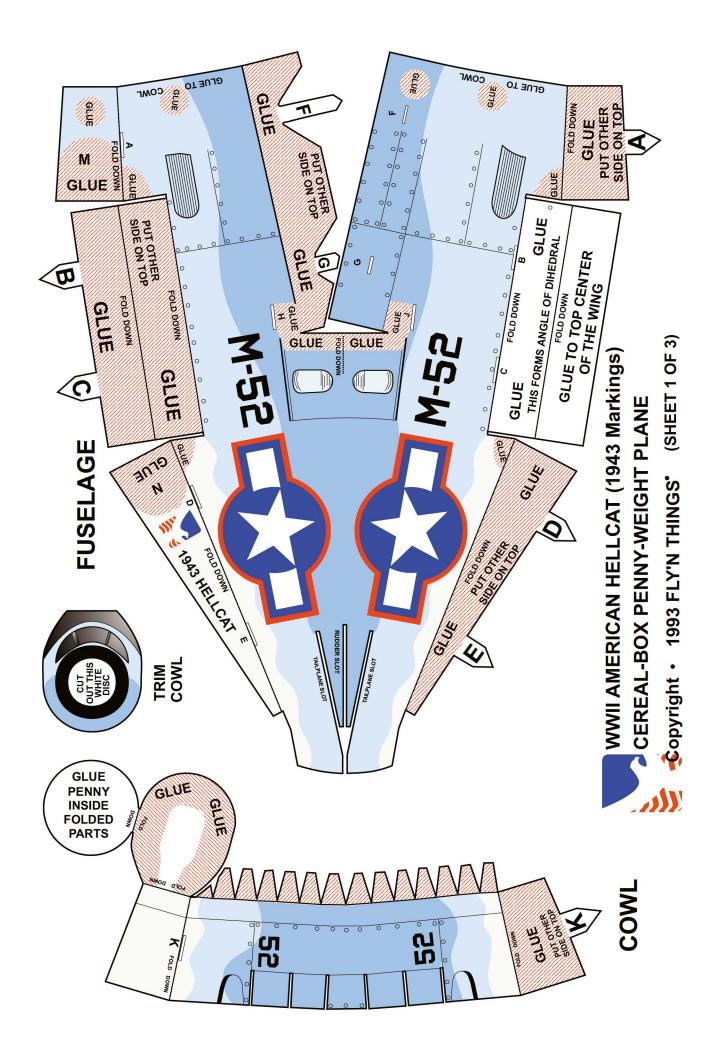
WWII JAPANESE AICHI "VAL" T99-2 CEREAL-BOX PENNY-WEIGHT PLANE Copyright © 1993 FLY'N THINGS™

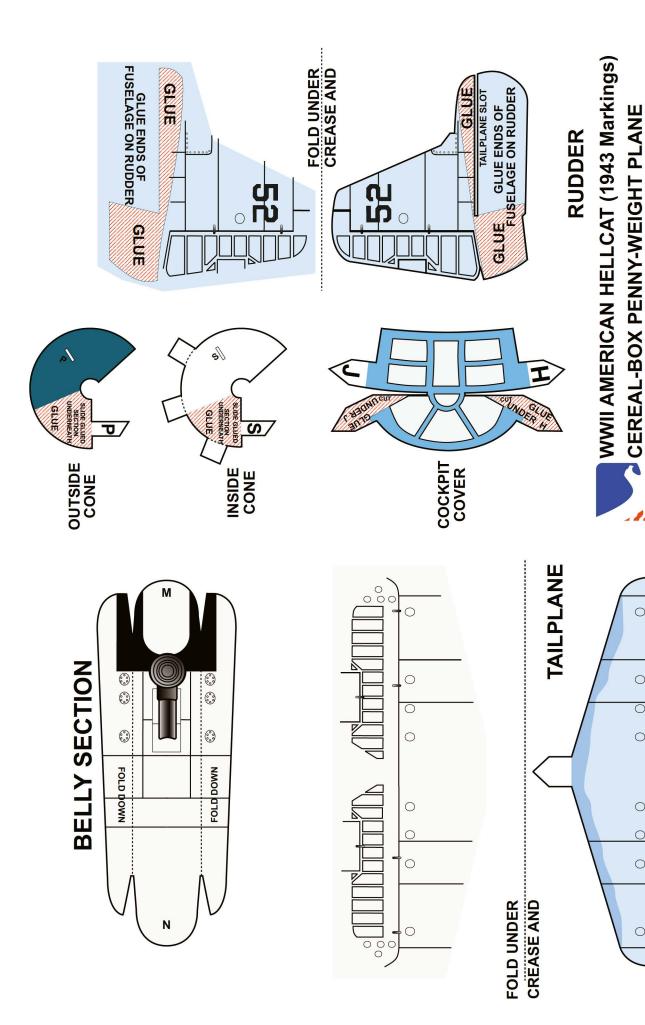


COCKPIT COVER



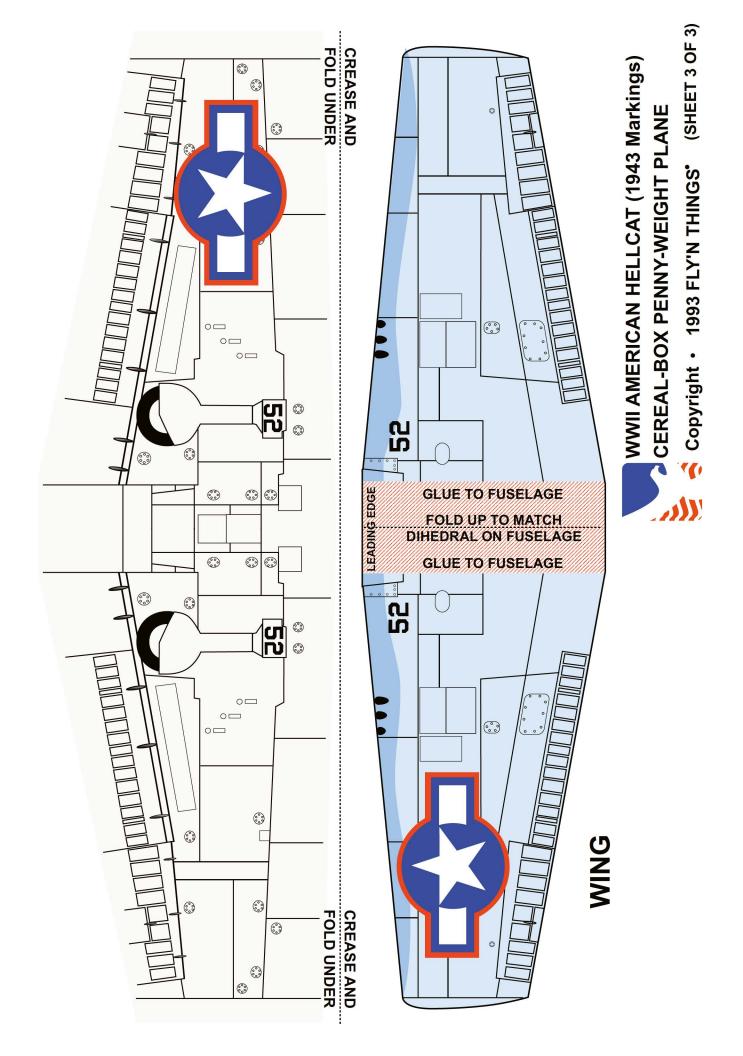
MING

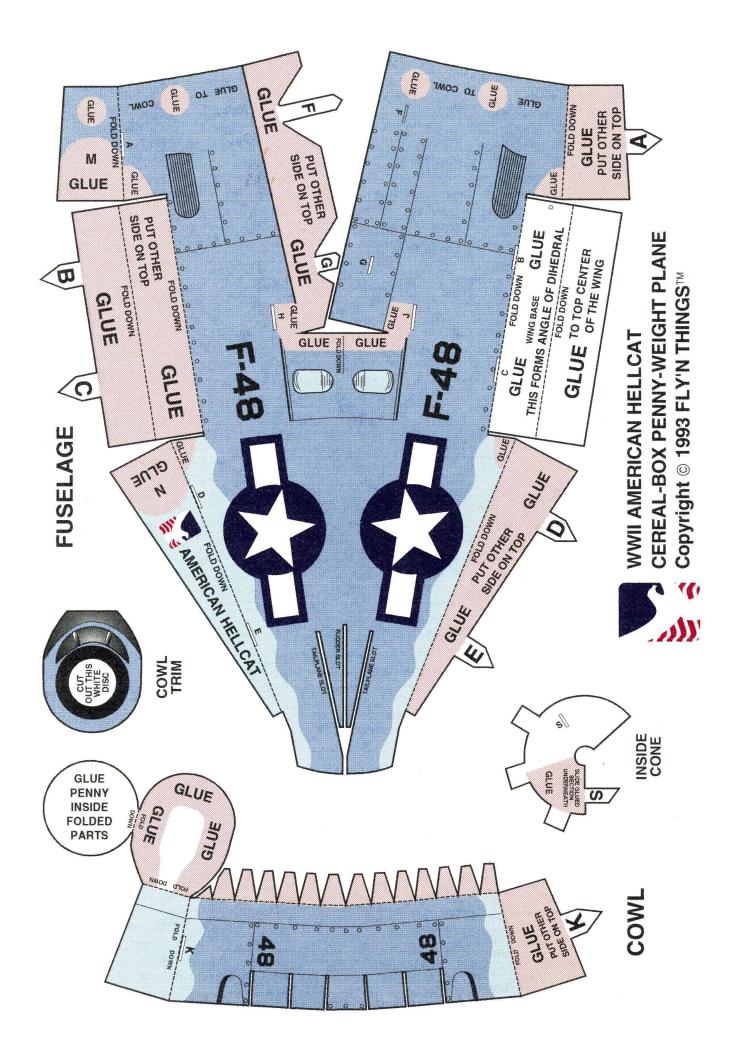




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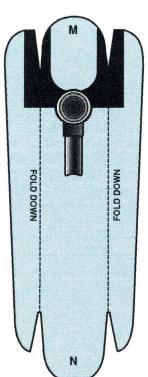


BELLY SECTION

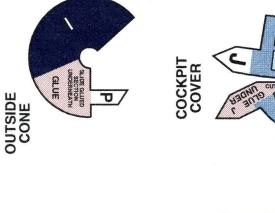
GLUE ENDS OF FUSELAGE ON RUDDER

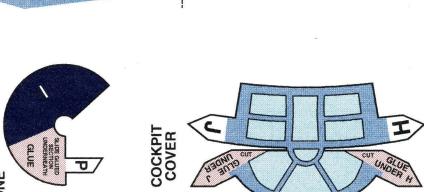
GLUE

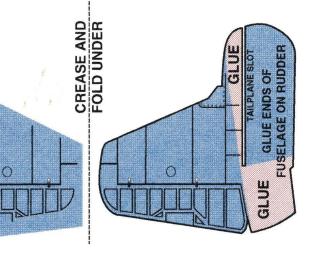
GLUE











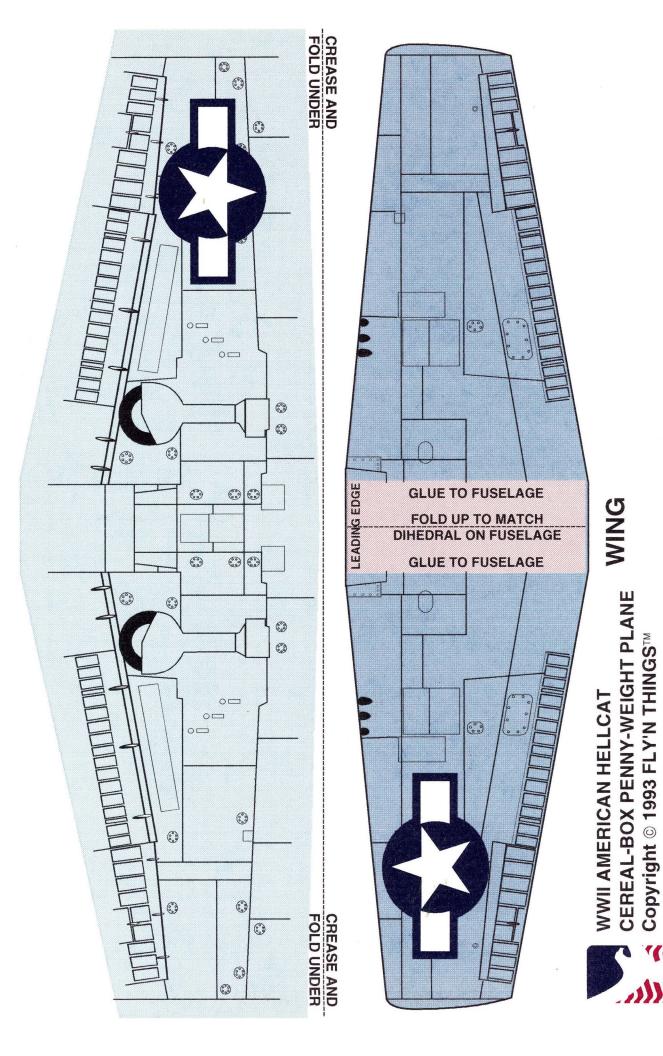


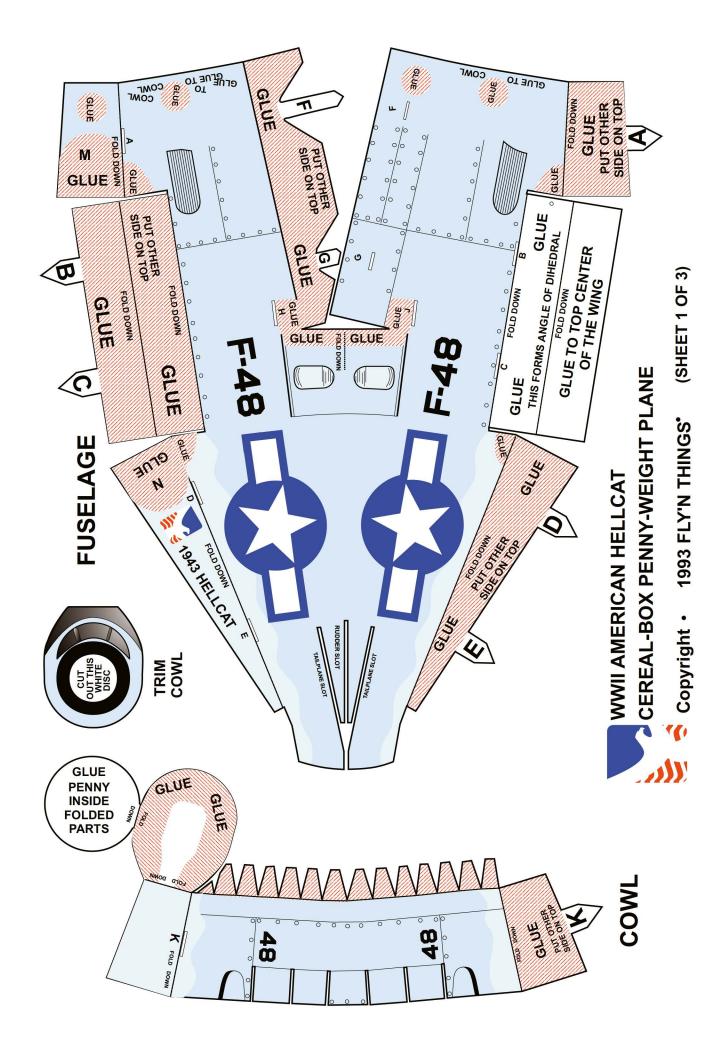
TAILPLANE

CREASE AND FOLD UNDER

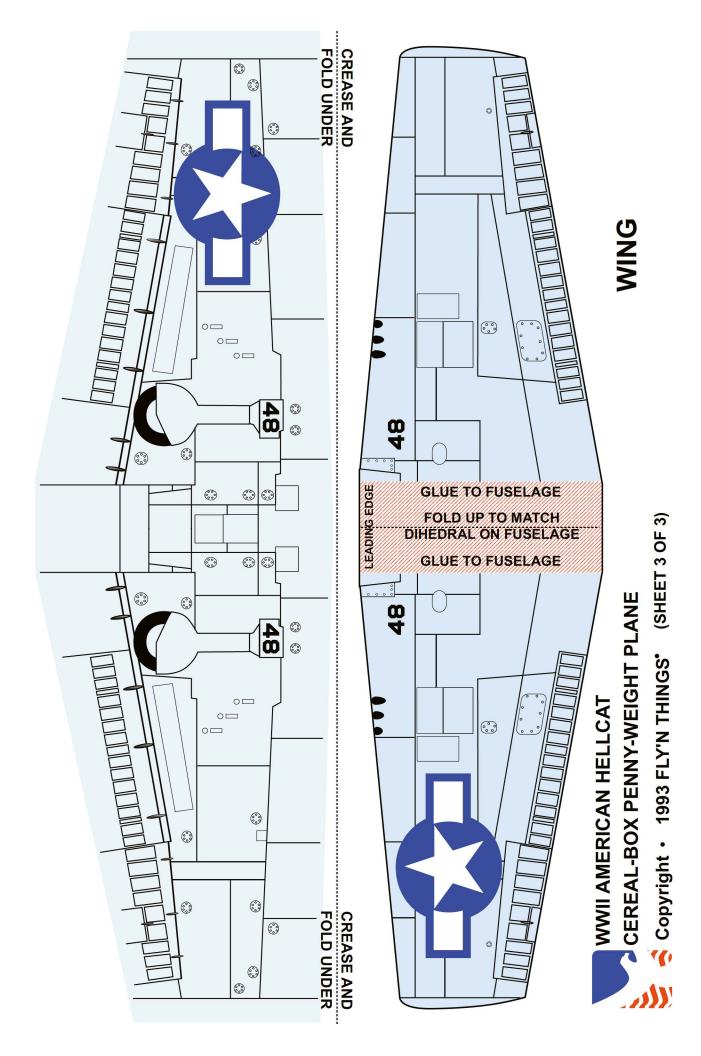


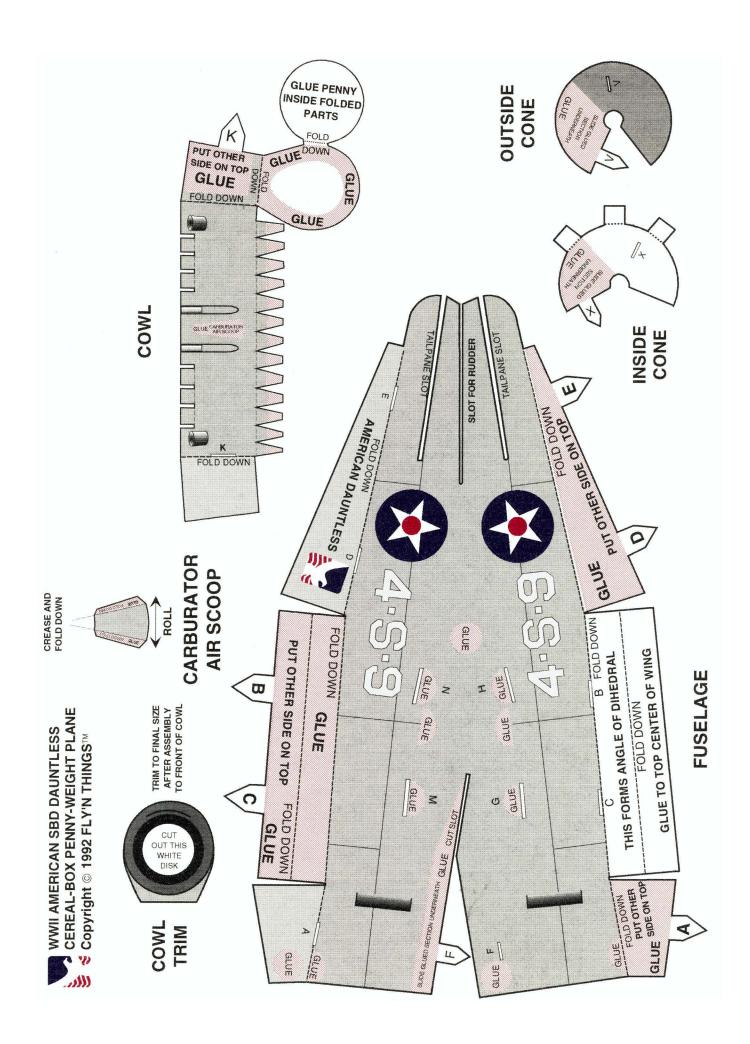
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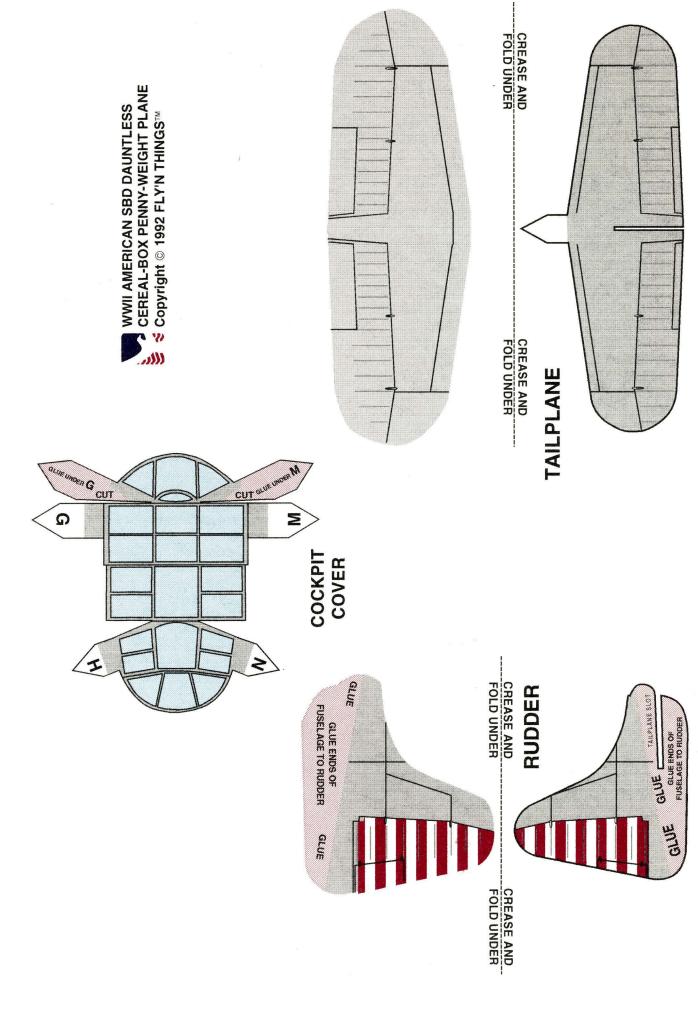


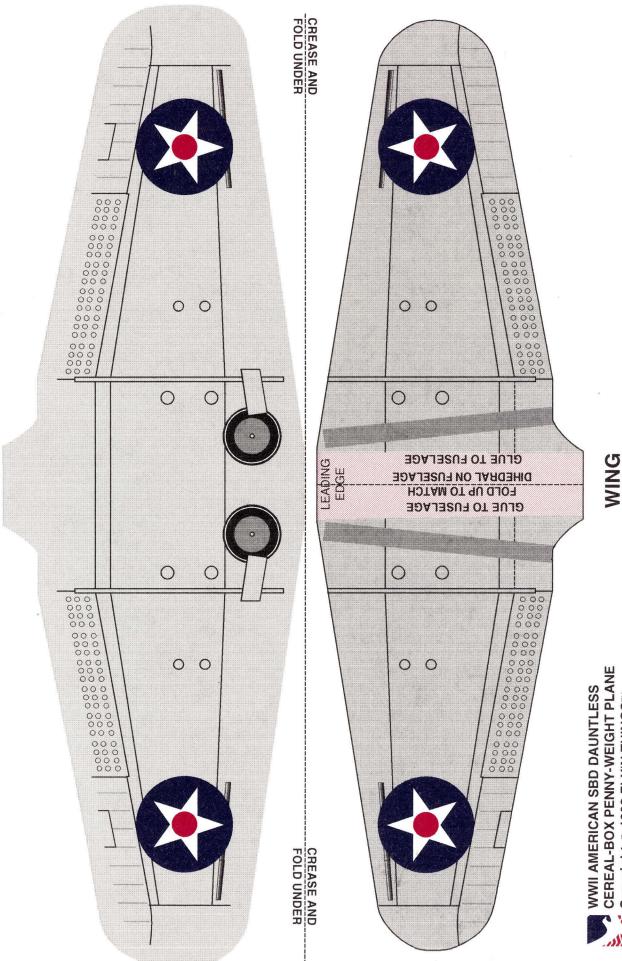


(SHEET 2 OF 3) FOLD UNDER CREASE AND GLUE ENDS OF FUSELAGE ON RUDDER GLUE GLUE GLUE ENDS OF FUSELAGE ON RUDDER TAILPLANE SLOT CEREAL-BOX PENNY-WEIGHT PLANE RUDDER Scopyright • 1993 FLY'N THINGS **4**0 **48 WWII AMERICAN HELLCAT** GLUE 5 UNDER H SLIDE GLUED SECTION UNDERNEATH COCKPIT COVER OUTSIDE CONE INSIDE **TAILPLANE** 0 **BELLY SECTION** 0 0 0 0 0 0 **FOLD DOWN** FOLD DOWN FOLD UNDER CREASE AND 0 0 0 0 0 0 0 1000 000

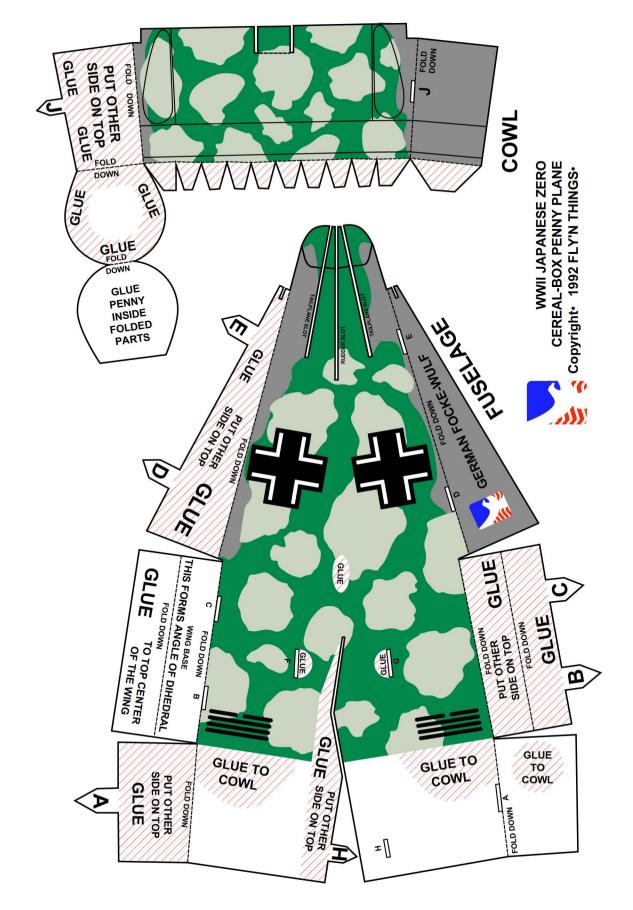


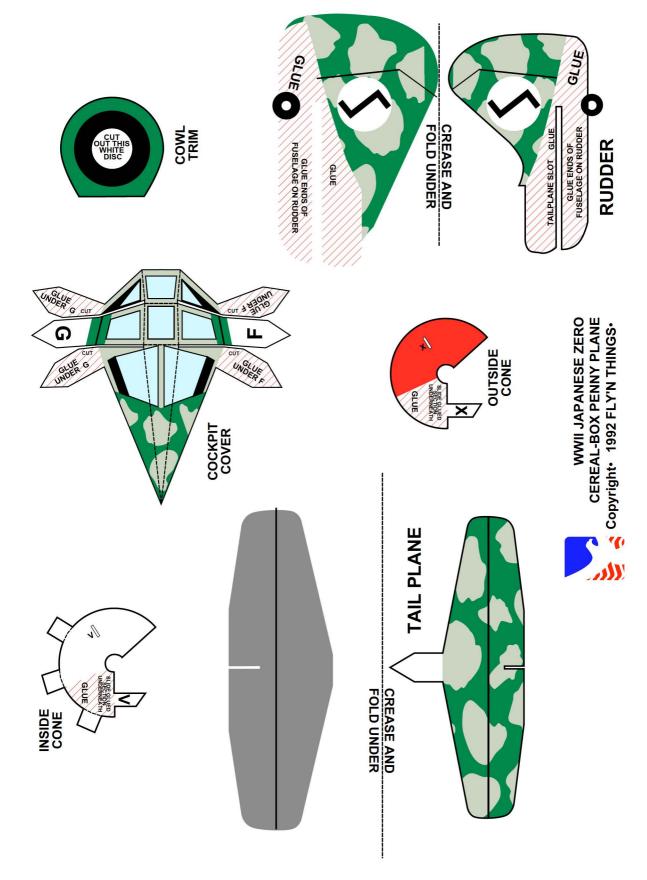






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FOLD UNDER

