

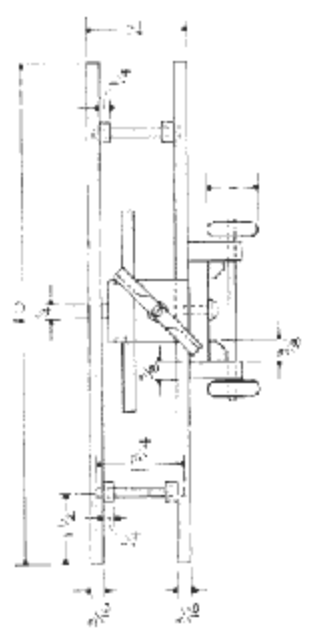
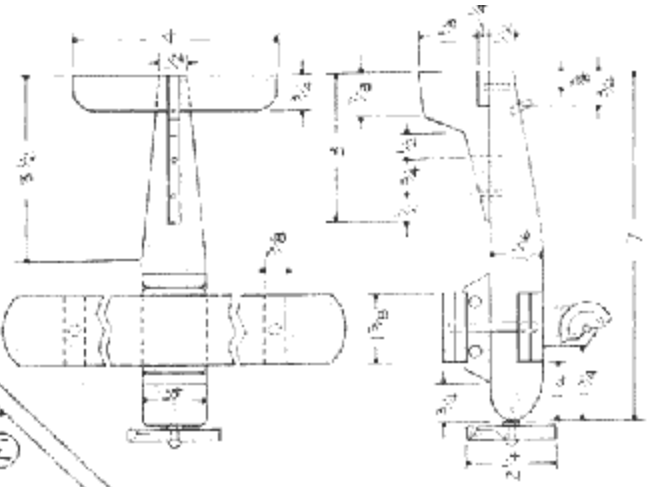
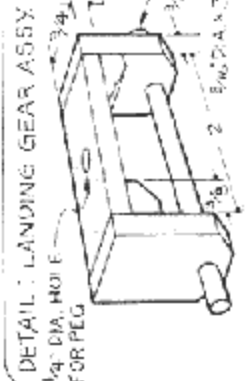
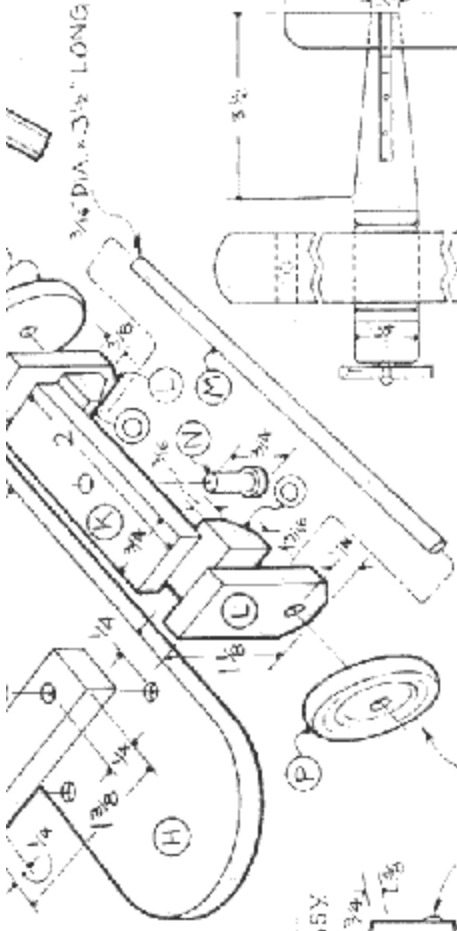


Project 18565ez: Toy Biplane

It's always been our opinion that a toy need not be complex, or battery-powered, or computerized in order to be fun. Perhaps we've been right. In a recent newspaper article, a longtime toy designer said that much of the fun has gone out of today's toys. The reason, he said, was because they have lost their fairytale aspect and leave little room for imagination. This biplane may not be an electronic marvel, but with a little imagination, it can provide hours of fun for a young child.

Toy Biplane Materials List

Part	Description	Size	No. Req'd
A	Fuselage	1-1/16" x 1-1/4" x 7"	1
B	Cabin	1/2" x 1-1/4" x 2-1/4"	1
C	Stabilizer	1/4" x 3/4" x 4"	1
D	Rudder	1/4" x 1-3/8" x 3"	1
E	Long Stabilizer Pin	1/16" dia. x 1" long	1
F	Short Stabilizer Pin	1/16" dia. x 3/4" long	1
G	Upper Wing	3/16" x 1-3/8" x 10"	1
H	Lower Wing	3/16" x 1-3/8" x 10"	1
I	Wing Brace	1/4" x 3/8" x 1-3/8"	4
J	Wing Post	3/16" dia. x 1-3/4" long	4
K	Landing Gear Base	3/8" x 3/4" x 2"	1
L	Landing Gear End	3/8" x 3/4" x 1-1/8"	2
M	Axle	3/16" dia. x 3-1/2" long	1
N	Peg	See detail.	1
O	Landing Gear Brace	3/8" x 3/8" x 3/4"	2
P	Wheel	1" dia. x 1/4" thick	2
Q	Tail Rest	3/16" dia. x 1/2" long	1
R	Tail Pin	3/16" dia. x 5/8" long	1
S	Propeller	1/4" x 1/4" x 2-1/4"	1



Toy Biplane Step-by-Step Instructions

1. Rip 5/4 stock (which measures 1-1/16" thick for hardwoods, 1-1/8" thick for pine) to a width of 1-1/4" and a length of 7".
2. Lay out and mark the location of the 3/16" by 1-3/8" notch for the lower wing (H).
3. Use the table saw equipped with a dado-head cutter to cut the notch.
4. Start at a point 3-1/2" from the back and lay out the 1-1/4" to 1/2" taper on the fuselage.
5. Use a sharp hand plane to remove the stock.
6. Transfer the side fuselage profile as shown in the grid pattern.
7. Use a band or saber saw to cut just outside the marked line.
8. Use a file and sandpaper to smooth exactly to the line.
9. Use a table or band saw to resaw thicker stock to get the 1/2" thick stock needed to cut the cabin (B).
10. Rip the stock to a width of 1-1/4".
11. Use a dovetail or back saw to cut the bevel on each end.
12. Mark the location of the 1/4" diameter "windows."
13. Use a drill press to bore the window holes to a depth of 1/8".
14. Cut the stabilizer (C) and the rudder (D) to the dimensions shown.
15. Glue and clamp both parts to the fuselage as shown.
16. Allow the glue to dry.
17. Bore holes for the stabilizer pins (parts E and F).
18. Glue each pin in place.
19. Sand the ends flush with the surface.
20. Use the table or band saw to resaw thicker stock to get the 3/16" thick stock needed to make the upper and lower wings (G and H).
21. Cut the wings to overall length and width.
22. Round the ends generously as shown.
23. Cut the wing braces (I) and the wing posts (J) to the dimensions shown.
24. Glue and clamp the wing braces to the wings.
25. Allow the glue to dry.
26. Bore a pair of 3/16" diameter holes through each wing brace and into the wing.
27. Add glue to the holes and to the ends of the wing posts.
28. Assemble as shown.
29. Use clamps to hold the parts together until the glue dries.
30. Cut the landing gear assembly (parts K, L, M, N, O, and P) to the sizes shown.
31. Lathe-turn the wheels (P) and the peg (N) to the dimensions shown.
32. Cut and shape the propeller (S).
33. Use glue and assemble all remaining parts can as shown.
34. Allow the glue to dry.
35. Round over all sharp edges.

36. Final sand through 220-grit paper.
 37. Join the propeller to the nose with a sheet metal screw.
 38. Add a drop of epoxy to the screw hole to make sure the screw stays in place.
 39. Leave unfinished.
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