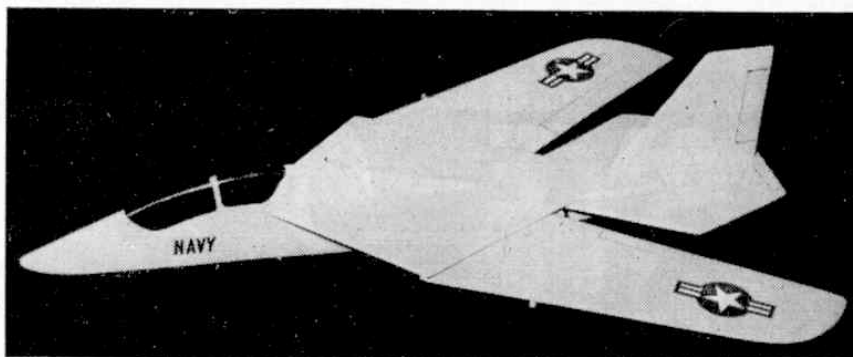


# Build something different for a change **SWINGER**

This model will never fail to attract interest wherever it is flown



**H**ERE'S SOMETHING different in catapult gliders—a swing-wing model on which you can set the wings at six different sweep positions and check the effect on performance. It's quite easy to make, but the method of mounting the wing panels on a pivot pin (short length of  $\frac{1}{8}$  in. dowel) is unusual, so study the plan, photograph and instructions carefully.

The plan is reproduced exactly half size, so you will have to scale up the patterns to twice size—or you can obtain a full-size plan if you prefer, price 2/6d., post free, from **Meccano Magazine Plans Service, 13-35 Bridge Street, Hemel Hempstead, Herts.** These are the parts you have to cut: two wing panels from  $\frac{3}{4}$  in. sheet; tailplane from  $\frac{3}{4}$  in. sheet (noting how two pieces of 3 in. wide sheet are joined together to give the required length); upper centre section from  $\frac{3}{4}$  in. sheet (here you will have to join three pieces of sheet together edge to edge); lower centre section from  $\frac{3}{4}$  in. sheet; fin from  $\frac{3}{4}$  in. sheet; underfin from  $\frac{3}{4}$  in. sheet; fuselage, the upper and lower shapes from  $\frac{1}{4}$  in. sheet.

Note the  $\frac{1}{8}$  in. diameter holes which have to be drilled in (i) each wing panel; (ii) the upper centre section; and (iii) the lower wing centre section. These must be positioned accurately.

## Construction

The model is assembled in the following order: 1, Cement the lower centre section into the notch in the top edge of the bottom half of the fuselage; 2, Cement the tailplane to the fuselage, making sure that it is positioned true and square. Note that the tailplane overlaps the lower centre section which makes for a strong joint; 3, Cement the  $\frac{1}{4}$  in. x  $\frac{3}{4}$  in. strip to the top of the fuselage assembly, butting up against the front of the tailplane; 4, Cement the upper centre section in place; 5, Cement the top of the fuselage in place; 6, Cement the fin and underfin in position.

Now comes the part where you have to be careful. Slide the wing panels into the gap between the upper and lower centre section pieces and see that they fit snugly and that the pivot holes line up. Then push a short length—say  $\frac{1}{2}$  in.—of  $\frac{1}{8}$  in. hardwood dowel through the pivot holes and check that each wing panel will swing easily backwards to its full sweep position.

When satisfied that all is well, mark the exact length of the dowel required to fit flush, remove each dowel

and cut off to this length, then reassemble permanently.

## Wing sweep rigging

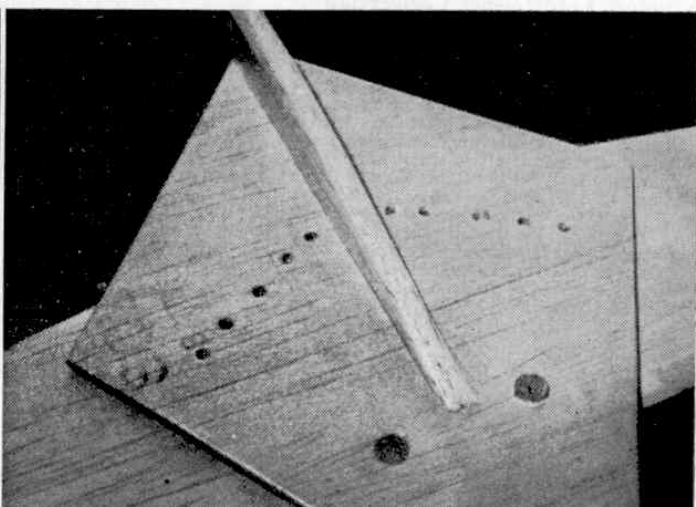
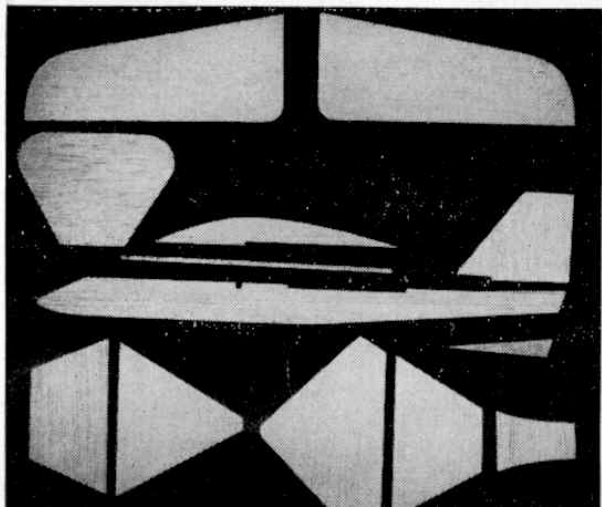
Pins are now pushed into the leading edge of each wing in the position shown on the plan and a rubber band stretched between the pins, passing through the hole in the fuselage. This band should only be strong enough to hold the wings in the full forward sweep position.

On the plan you will notice five holes marked on each side of the upper centre section for lock pin positions. These are the positions at which pins are inserted to hold the wings at any required angle of sweep other than the fully forward position. For instance, to set the wings for 20 degree sweep, pull back both wing panels and insert pins in the first hole each side. Releasing the wings will then allow them to pivot back against these "lock" pins to stop at the 20 degree sweep position. In a similar manner you can set the wings for 30 degrees, 45 degrees, 60 degrees or full (72 degrees) sweep.

## Trimming for flight

For initial flight trimming use the full forward wing position and add ballast to the nose as necessary until your model will perform a "floating" glide. With this sort of trim it will loop when catapult launched. Now try flying with 20 degrees sweep. This gives you a faster flight with more height from the catapult launch, followed by a fast glide. The 30 degree sweep position will give you more height still, but an under-elevated glide. With 45 degrees sweep or more you will have to remove some ballast weight in order to stop the model diving.

With adjustable sweeps you can alter the flying characteristics of your model at will—e.g. from aerobatics to high-speed flight—but wouldn't it be nice to be able to launch the model with the wings at full sweep for maximum height from a catapult launch and then have them move forward to full forward sweep for a long, floating glide? Well, if you have made your model accurately and the wings are pivoting very smoothly and easily you *should* be able to achieve this, simply by cementing a 12 in. length of paper streamer to each wing tip.



A 12.3/4" WINGSPAN CATAPULT GLIDER  
WITH VARIABLE SWEEP WINGS FOR IN  
FLIGHT ACTION. COPYRIGHT OF MECCANO  
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JOIN →

TAILPLANE  
3/32" SHEET

**RUBBER BAND**

UPPER CENTRE  
SECTION 3/32" SHEET

LOWER CENTRE SECTION  
3/32" SHEET

3/16" HOLE

WING - CUT TWO  
FROM  $3/32$ " SHEET

○ ← 3/16" HOLE

### FUSELAGE PARTS

1/4" SHEET

1/4" SHEET

PAINT BLACK

HOLE FOR RUBBER BAND

- WIRE FOR CATAPULT LAUNCH

UNDERFIN 3/32" SHEET

WING IN FULLY FORWARD POSITION

### ROUND OFF EDGES

WING IN FULLY SWEEP  
POSITION

3/16" DOWEL  
PIVOT

### TAIL PLANE

### LOCK PIN POSITIONS

3/16"  
HOLE

3/32" SHEET

FULL  
FORWARD

WINGS MAY BE SET TO ANY  
OF THESE SWEEP POSITIONS

FIN

UPPER CENTRE SECTION

LOWER CENTRE SECTION

**TAIL PLANE**

BALLAST WEIGHT AS REQUIRED

## MATERIAL LIST

13X2X1/4" Balsa Sheet - Fuselage  
36X3X3/32" Balsa - Wings Tailplane Fins  
6 1/2 X 1/4 X 3/32" - Fuselage Centre  
1" Length 3/16" Dowel - Pivots  
1 1/2" Length 18G. Wire - Catapult Hook  
6 BA Bolt & Washers - Ballast Weight