

Catapult Gliders

Three simple and inexpensive fun models designed for you
by Stephen Archibald

MODEL aircraft do not have to be complicated and tricky to make and fly; an enormous amount of fun can be had from something very simple and cheap to make, such as these snappy little catapult gliders. You can even have competitions with them, shooting two or more off simultaneously with the winner obviously being the last one to land. Or you can fit little paper trim tabs (or warp the flying surfaces by breathing on them) to make quite remarkable aerobatic machines; as an example, a tiny amount of warp in one wingtip of the Gnat will produce an exhilarating series of upward climbing rolls, gradually slowing until the model's speed allows it to resume a normal flight path.

"Combat" is another possibility, an interceptor model being catapulted at a model already gliding—or at least, where you think it will be by the time the interceptor gets there. If the models do collide, chances of damage are very slight due to their light weight, and in any event repairs are very simple.

The only materials needed to build several such models are a sheet each of $\frac{1}{8}$ in. and $\frac{1}{16}$ in. balsa, medium hard (or a balsa pack containing these thicknesses), a tube of balsa cement, a tiny amount of sheet lead, and a modelling knife, though if you want to make a really good job, you will also need sanding sealer, glasspaper, and colour dope or paint.

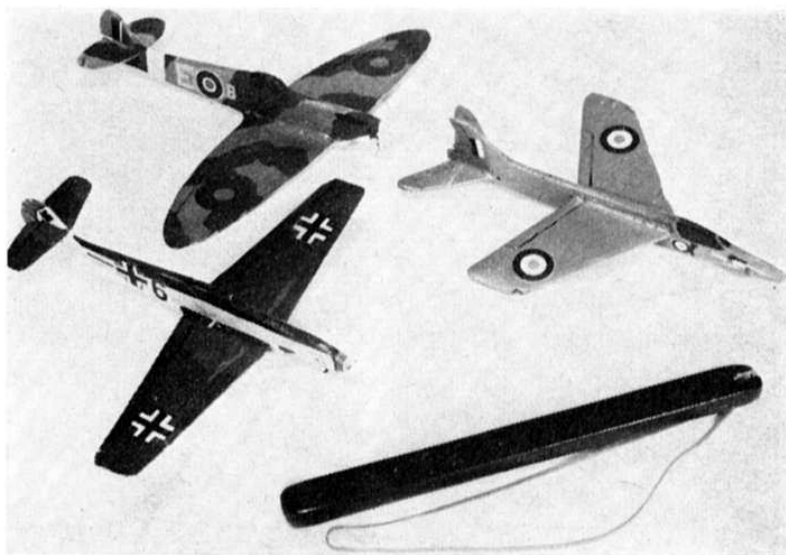
The construction is quick and easy and in no time a whole squadron of Messerschmitts and Spitfires or a formation of Red Arrows can be built. The wings can be traced down on to the $\frac{1}{16}$ in. balsa either by using carbon paper or by pricking round the lines with a pin, so leaving pin holes in the balsa which can be joined up with a soft pencil.

The fuselage is traced and then cut out using the same method on $\frac{1}{8}$ in. balsa. The slots for the wings have to be very carefully cut out, making sure they are not cut oversize, otherwise the wings will keep falling out. The wings can of course be glued, but are best left as a slide fit, so that replacements can be fitted if some part of the aircraft should break.

The amount of lead needed on the nose is very small and will vary slightly with each model. The models in the pictures used sheet lead under $\frac{1}{16}$ in. thick and needed a strip about $\frac{1}{4}$ in. \times $\frac{1}{2}$ in. folded in the centre and squeezed onto the fuselage as drawn. When finally adjusted for smooth flight, it is worth covering the edges of the lead with a film of cement to prevent losing it.

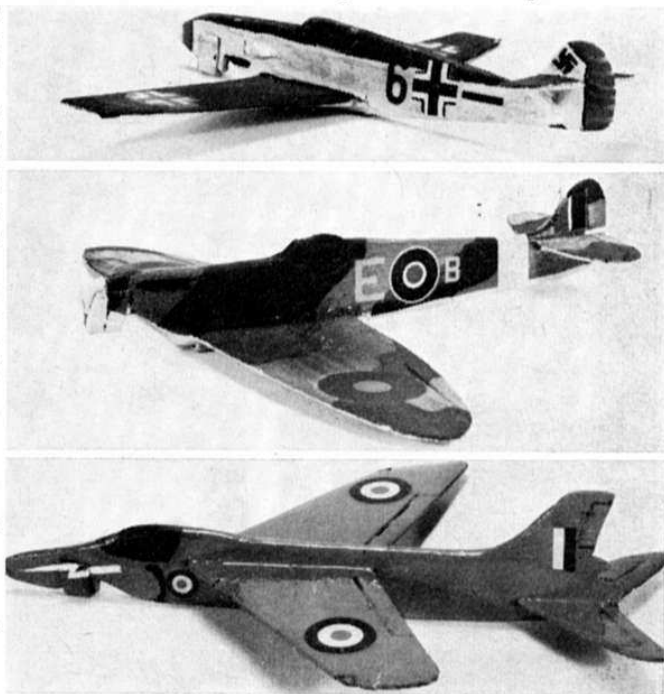
Decorating and painting the models is not essential but it does make them look a bit more realistic. The Spitfire was finished in dark green and dark earth, with duck egg blue undersides and fuselage band. All of these colours are available in the Humbrol range. The markings are from a box of old spare transfers as are the markings on the other two aircraft.

The Messerschmitt 109E was finished in two shades of green and pale blue, the lighter shade of green being the same as used on the Spitfire and the darker shade being



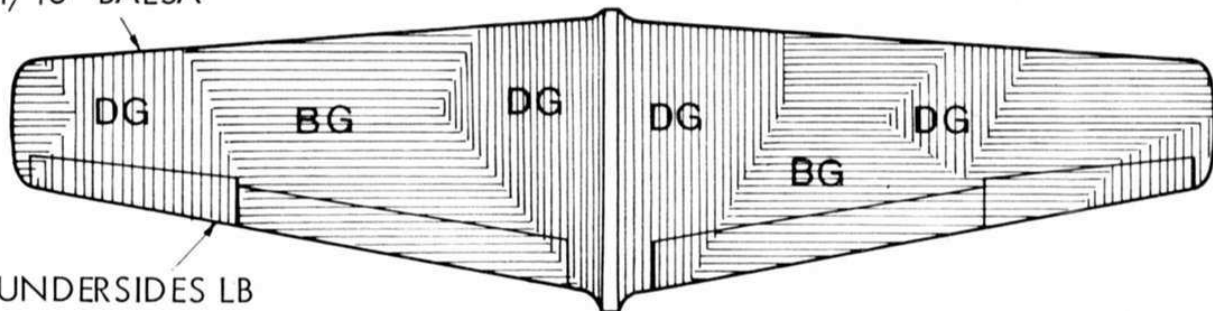
the same paint with a little matt black added. The pale blue for the undersides is made from four parts white and one of blue. The spinner, number and rudder should be painted red, white or yellow. As you can see our model has a black number, which is due to the fact that we couldn't find the correct colour number in the transfer box. The Red Arrows Gnat was painted Humbrol gloss red all over with a white lightning flash.

The hand catapult, shown in the photograph, is simply made from a length of wood roughly $\frac{1}{2}$ in. \times $\frac{1}{8}$ in. \times 6 in. with a hole drilled at one end and a groove cut in the end and a rubber band threaded through and tied as per the diagram. With some amount of practice the gliders can be made to perform various stunts using this method. The other method is to use a 20–25 foot length of $\frac{1}{8}$ in. flat rubber which has a wire ring tied to one end and the other tied to a peg in the ground. This method, although the best for height and long flights, can be dangerous and care must be taken to ensure that no one is in front of the catapult at the time of releasing—the model will be travelling at over 100 m.p.h.!



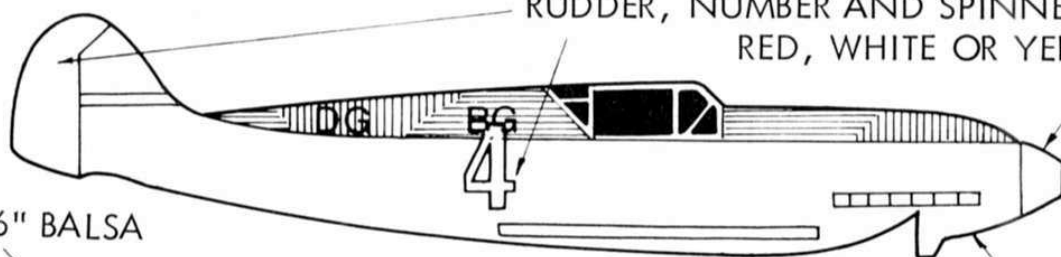
Messerschmitt BF 109E

1/16" Balsa



UNDERSIDES LB

RUDDER, NUMBER AND SPINNER
RED, WHITE OR YELLOW

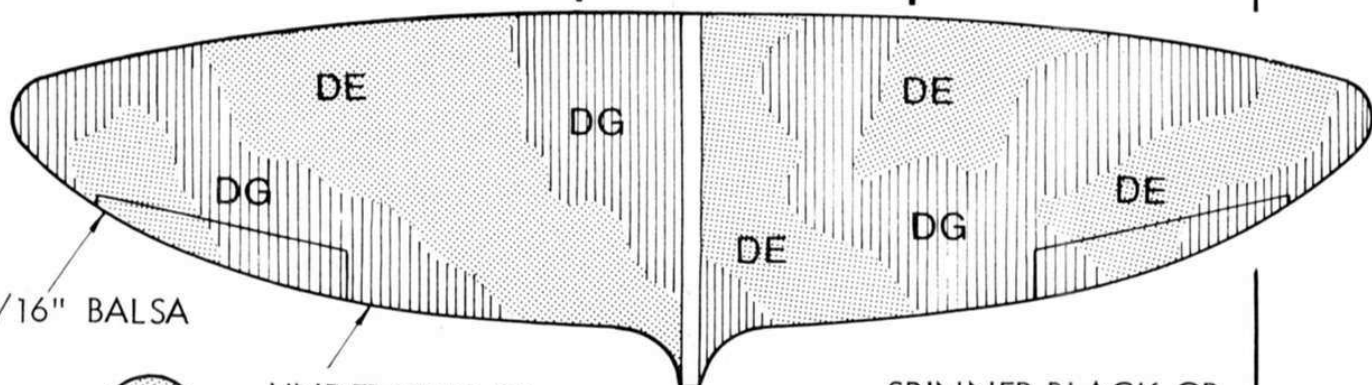


1/16" Balsa



1/8" Balsa

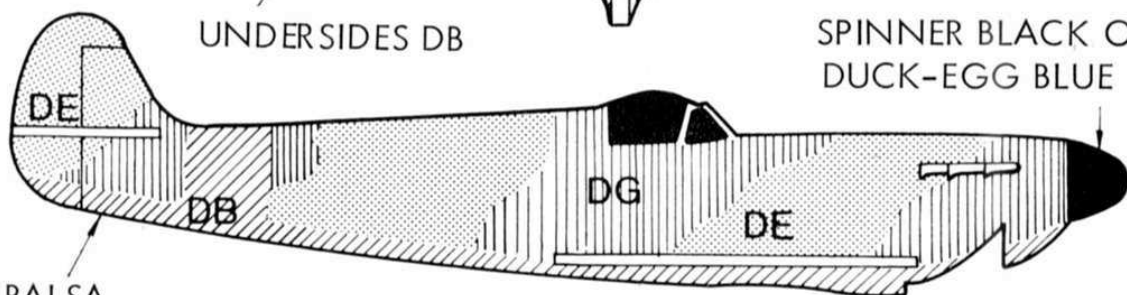
Supermarine Spitfire Mk I



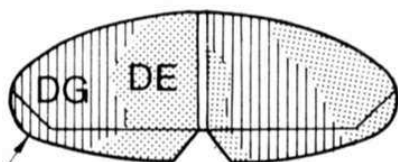
1/16" Balsa

UNDERSIDES DB

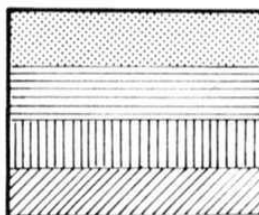
SPINNER BLACK OR
DUCK-EGG BLUE



1/8" Balsa

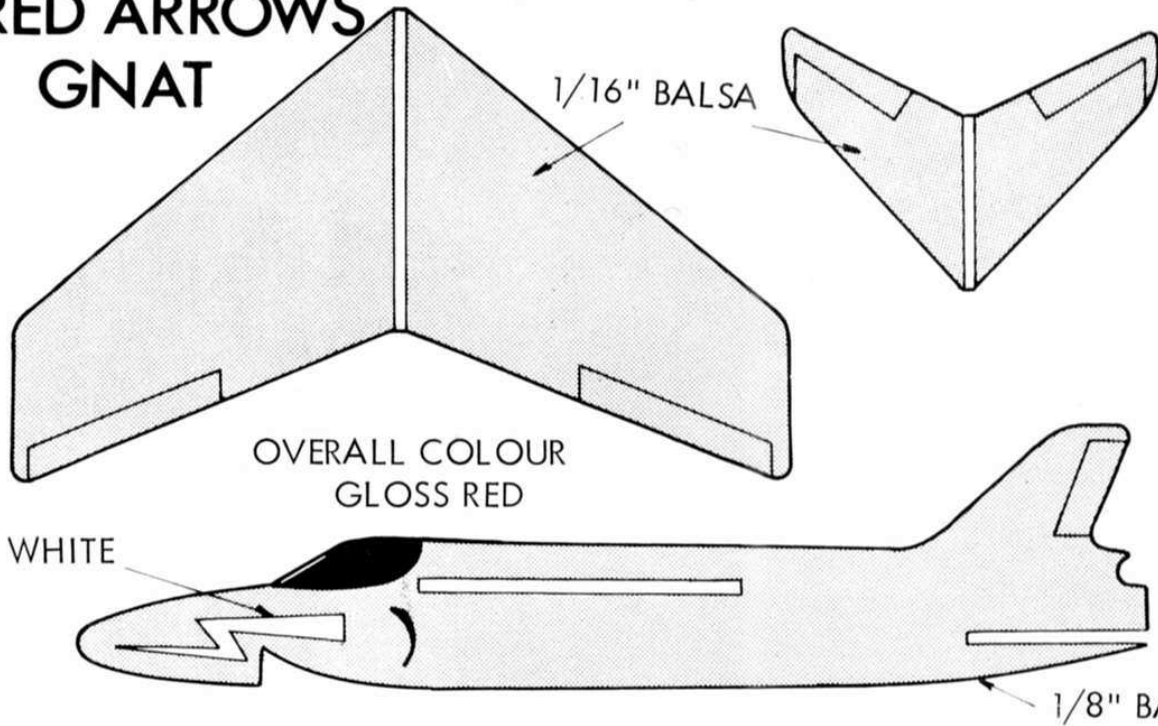


1/16" Balsa



- DE DARK EARTH
- BG BLACK GREEN
- DG DARK GREEN
- DB DUCK-EGG BLUE
- LB LIGHT BLUE

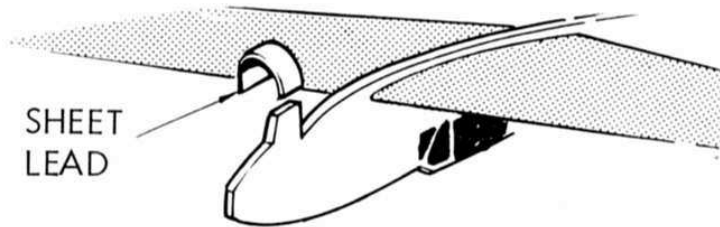
'RED ARROWS' GNAT



OVERALL COLOUR
GLOSS RED

WHITE

1/8" Balsa

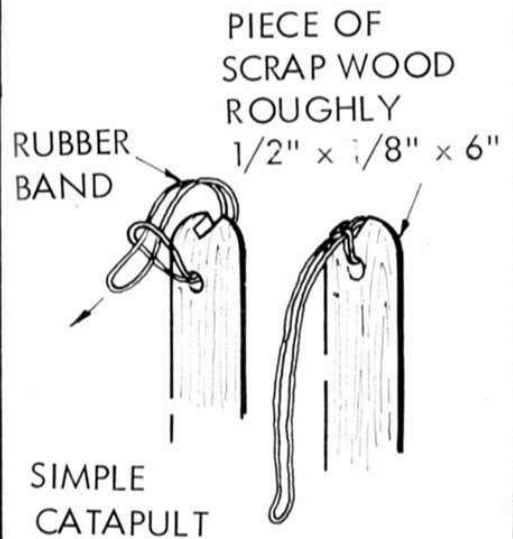


SHEET
LEAD

STRENGTHEN
HOOK AREA WITH
BALSA CEMENT
BEFORE
POSITIONING
LEAD



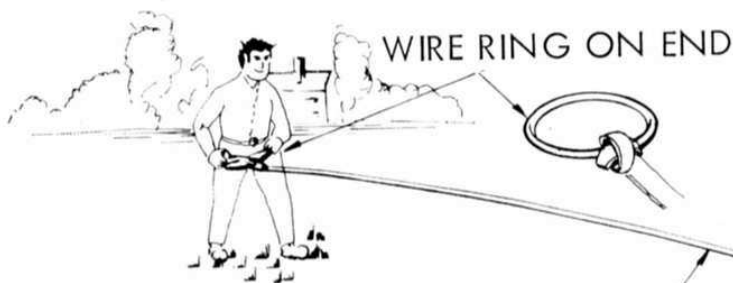
SECTIONAL VIEW
OF WING



PIECE OF
SCRAP WOOD
ROUGHLY
1/2" x 1/8" x 6"

RUBBER
BAND

SIMPLE
CATAPULT



WIRE RING ON END

DO NOT RELEASE WITH
ANYONE NEAR CATAPULT

PEG IN GROUND

20-25FT. 1/8" FLAT RUBBER