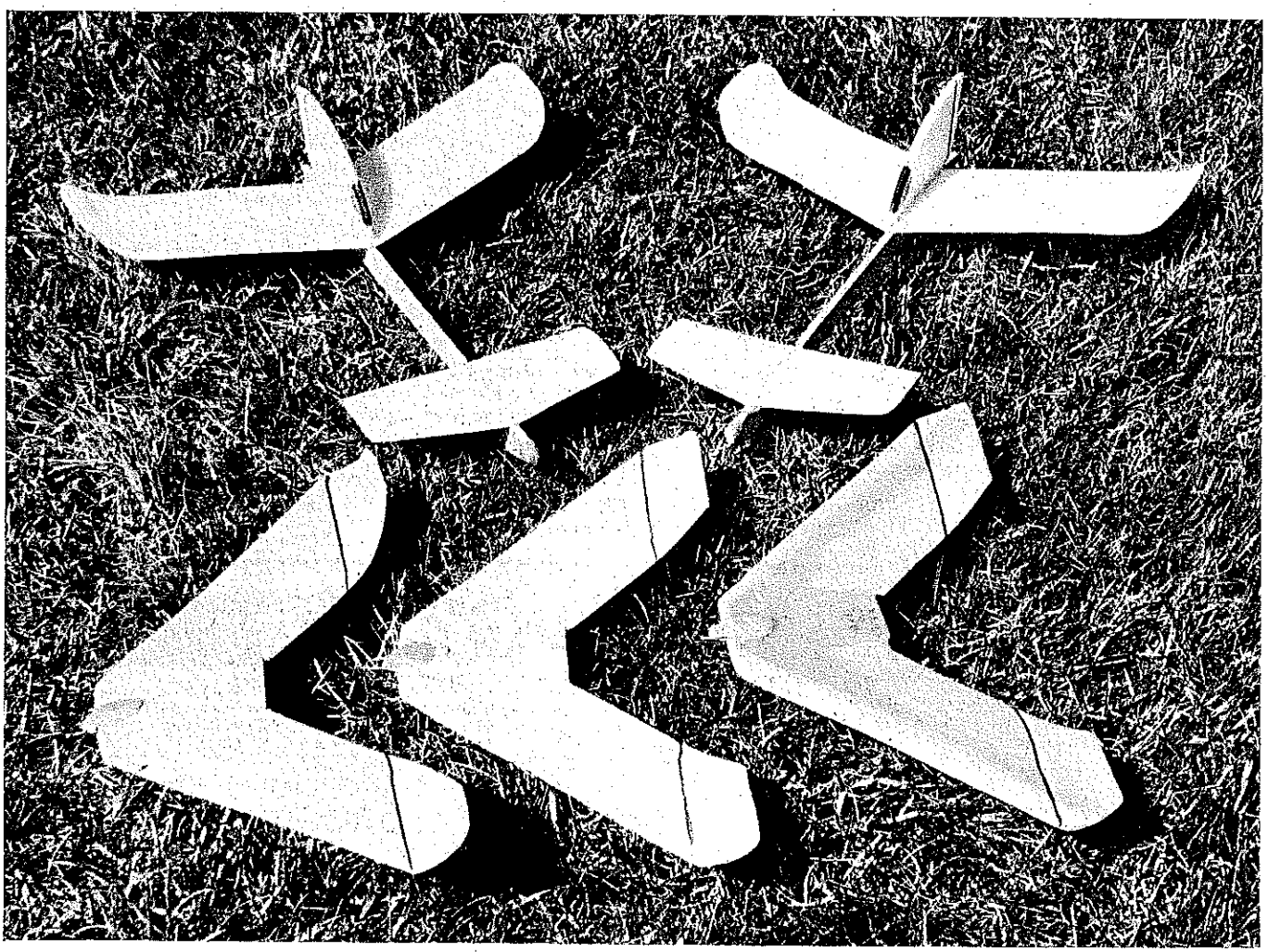
#688

Fun Flying Foamies

It's almost like being a kid again! Take a supermarket meat tray, cut out one of these neat little foam gliders, make up a dowel hand-launcher, and you're ready to play.

■Model Design: Joel Goldbach ■Text: Larry Kruse



A gaggle of foamies. The three Stealth Gliders at bottom are all-foam; the Canard Catapult (top) adds balsa parts, hence should never be aimed at anyone during launch. The Stealth Glider's distinctive lines were inspired by the angular planform of the well-known Stealth Bomber.

THESE TWO little gliders will provide a lot of fun for a very little expenditure of time and effort. Both designs can be cut from the same source—a supermarket foam meat tray. In fact, more than one set of parts for each plane can be made from the same tray by judicious positioning of the patterns.

The Stealth Glider was inspired by the popular "Zanonia Seed" glider published in Model Aviation (2/83). The more modernized squared-off wings of the Stealth Glider work the same way as the original but give the suggestion in flight of the angular planform of the well-known Stealth Bomber.

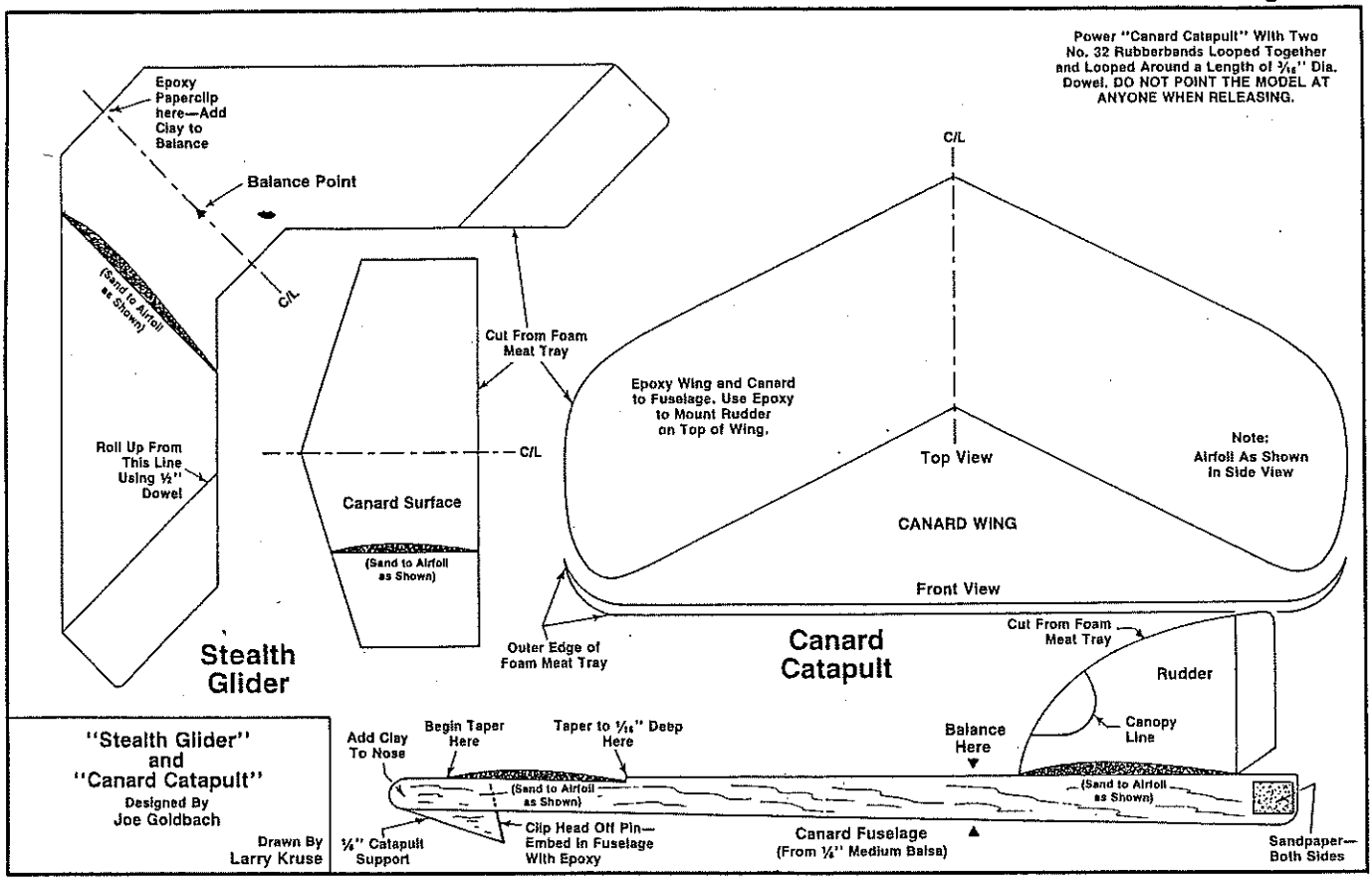
There is no real construction to the Stealth Glider. All you need do is trace the wing outline and the balance point on the bottom of a 5/32-in. thick foam meat tray with a ball-point pen, and cut it out. Sand the wing outline to shape, and sand the wing itself to airfoil shape. The airfoil is not critical, but the better the airfoil shape, the better the glider will fly. Taper the extreme tips of each wing, then use a ½- to ¾-in. dowel to carefully bend each tip up ¼ to ½ in. These "elevons" will control turn in the glide.

To balance the glider, epoxy a paper clip to the top of the nose area. When the epoxy is cured, poke a pin through the balance point shown. Holding the glider vertically, add nose weight in the form of clay until the glider hangs slightly nose down.

Launch the glider by holding it between thumb and forefinger. An easy toss will give you a nice long glide; a hard toss will make the glider loop and then level out into an extended glide. Add or subtract clay to adjust the glide angle. Bend the elevons up or down to tighten or open the turn. The Stealth Glider flies well indoors (our cats love it) or outside in calm air.

In contrast, the Canard Catapult should only be flown outdoors and never aimed at anyone during launch. To construct the little flier, cut out the foam parts as you did with the Stealth Glider and airfoil the canard surface (front stabilizer) and the wing. Note that the wing uses the up-turned sides of the meat tray as tip dihedral. The rudder does not need to be airfoiled, but it should be thinned slightly and the edges rounded.

Cut the fuselage from balsa stock, and cement the catapult hook to the front. Clip the head from a straight pin, and poke it into



the fuselage as shown in the plan. Use a thin bead of epoxy or Hot Stuff to keep it in place.

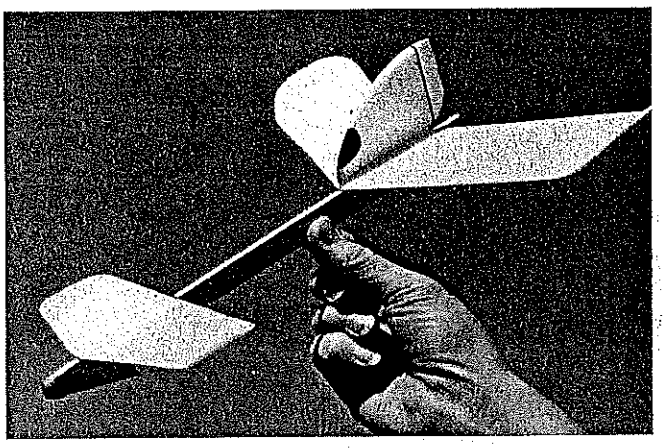
To assemble the other parts, poke holes in the top of the fuselage with a pin where the stab and wing are to be mounted, and epoxy them in place. Check as the epoxy is curing to make sure both are square with the fuselage. Add the rudder to the top of the wing and two small squares of sandpaper to the rear of the fuselage to assist in gripping during launch.

Balance the plane by adding clay to the nose. A round pencil or dowel placed under the plane at its balance point will help. You may need to add or subtract a bit of clay later to fine-tune the glide.

Continued on page 123

Gary Blake (left), Taryn Blake (center), and Shelby Spell (right) obviously think their Stealth Gliders are great. Six-year-old Gary and his five-year-old sister are the children of Richard and Teresa Blake. Five-year-old Shelby is the son of Kenny and Carrie Spell.

Gary Blake gets set for another launch. His little foam-and-balsa Canard Catapult is practically indestructible and regularly survives collisions with playground equipment, trees and the ground. Both projects can be completed and flown in an evening—perfect for kids.



This simple canard can teach novice fliers a little about trimming. Flexible and forgiving foam surfaces can be bent to various angles to experiment with the effects of different control adjustments.

FF Indoor/Tenny

Continued from page 121

power test of flight adjustments: use a shorter motor of the same rubber cross-section, and add ballast corresponding to the missing rubber weight. For example, in a real-life situation, the model CG is ½ in. ahead of the center of the motor; that is, a lighter motor will shift the CG back. A normal motor is 22 in. long; the test will be done with a 15-in. loop. The rubber to be used weighs 0.00189 oz./inch, so a 15-in. loop weighs 15 x 2 x 0.00189 or 0.0567 oz.

To balance the model for the 22-in. motor (0.08316 oz.), add 0.02646 oz. to the model ½ in. behind the CG. The trim won't change, but the torque burst response of the model will be accurate if you use the same launch torque. The other flight parameters will change somewhat because the test loop has a different amount of slack as it unwinds. The climb will last longer than with a proper spacer, and the cruise will be extended unless the model runs out of turns too soon. The ratio of launch turns to turns left probably will be very inaccurate.

Mini-Stick revisited. The August 1990 column reported on Tom Vallee's Mini-Stick concept, a livingroom-class model he uses to introduce Indoor flying to new recruits. This class seems to be catching on, with some of Tom's plans and plans for original versions appearing in several club newsletters. Burr Stanton's INMARC Newsletter even had a design with both conventional tractor and pusher canard versions.

The abbreviated rules are: Maximum wing: 7-in. span, 2.5-in. chord; maximum length: 10 in. with motor stick, 5-in. maximum; Stab area: 50% of wing area maximum. Monoplane only: covering can be anything except microfilm, and all-wood prop. Special rules for contests in Tom's living room: Fly by AMA rules except three ten-second steers are permitted, and all winding must be done in the kitchen.

The Rescue. The photo documents one of my more spectacular goofups. At the 1990 USIC I had a new Intermediate stick which was totally untested. In desperation I made some test flights in one of the small practice areas at the end of the bleachers. I did my best to avoid an air circulation intake which served a laboratory. Unfortunately, the model found the air intake anyway and ended up plastered against the grill. Roy Bourke recorded the successful rescue effort. An extensible service platform was available to boost me to the right level (about 18 ft. above the floor). Luckily, the air flow could be blocked well enough by sliding pieces of typing paper between the surfaces and the grill. This allowed me to unplug the tail boom and get the model down in two separate pieces with only minor damage to everything except my pride!

Unusual Motor Stick. The models flown by Rene Butty (Switzerland) at the 1990 World Champs have unusual construction for the motor sticks. The photo shows how thin balsa is spiral-wrapped to create a torsionally rigid motor stick. Not visible in the photo are four pieces of boron which add compression strength and stiffness.

Stan Chilton's props always run smoothly. That's because he uses a pitch checking gauge which allows him to precisely set the blade angle and measure the pitch anywhere on the blade. □

When responding to advertisers, mention that you read about them in *Model Aviation*.

FF Foamies/Goldbach-Kruse

Continued from page 53

Make a launcher by looping two Number 32 rubber bands together and then looping them around a 6-in. length of 3/16-in. dowel. Tilt the plane about 30° to the right, and aim it upward at about a 45° angle as you pull it back into launch position. Trim it to arc up to the right and then glide left. When properly trimmed, it should glide slowly, almost on the verge of a stall.

Enjoy both Foamies. They can provide a welcome break from the more complicated projects we usually tackle. □