



Free Flight

By BOB STALICK

• Several times each year, it seems that someone comes up with a new event to pique our curiosities. It was just about a year ago that this column featured the newly developed Pee Wee 30 event as it was promoted by the San Diego Orbiters. This month, another new event is being featured. The difference is that this event has been around on the continent for over five years, but it has just begun to be a part of the discussions here in the good old U.S. of A. The event is A-3 glider—a smaller version of the A-1 glider flown regularly in our AMA contests. Recently, I received a letter from occasional Czechoslovakian correspondent, Ivan Horejsi, who filled me in on some more details on the class.

Ivan notes that he read in the July (1987) issue of *Model Builder* about my curiosity with the event. He offers, "I feel I could add some comments, which might be of your interest because I live in the country where the class was created. I do not know exactly who is the inventor of the class, but I think it is not essential. The A-3s have been flown here for some five years. They have become very popular among young and old alike, as they are really fun both to build and fly. I am afraid they are not known outside our country and take this letter as an attempt to gain some more publicity for them. I believe they do deserve it.

... an A-3 model is quite simple to build and can be finished in a few days. I have tried to furnish my A-3 with a small circle tow unit, but it did not work. The best choice is a simple offset hook. Anyway, we feel the CT units should be banned by the rules.

"Very high zoom launches with the offset hook are possible and the performance of a good A-3 is in the 90-second range. Anyway, the 60-second max has proven to be appropriate, as it allows even a beginner to be competitive. The experts can show their quality in the flyoff.

"The 'Rapid' A-3 by my friend J. Jindrich, which was published in *Model Builder* earlier, is extremely simple to build and thus the perfect choice for beginners. I am enclosing a drawing of a 'second end of the

class' model. The author of the 'Bubak' high-performance A-3 model is another friend of mine, Lubomir Siroky. The full-size drawing of this model was published in our national magazine *Modelar*. (Note: a three-view of the Bubak is featured in this issue of *Model Builder Free Flight*.)

"I hope you will find my information of some interest for you, and I would be glad if it helps to spread our nice and popular class into some other part of the world."

APRIL MYSTERY MODEL

Now and then, a conscientious and helpful reader sends in a nomination for the Mystery Model. Such is the case this month. I offer you a strange design forwarded to me by Bill Colish of Harrison, New York. Bill notes that he actually built one of these things as a youth, powering it with a Spitzzy .045. Flight pattern was a straight line with minimal glide. The ship did not have any special helium bags or the like, it was built in the usual stick-and-tissue style. The model article was carried in a popular modeling magazine of the time. The designer was well-known for his odd-ball flying ships. Now what do you do with all of these clues? Well, you just correctly name the model design and forward it to *Model Builder* magazine, attention Bill Northrop. If you are first in line, you get a free, one-year subscription of *Model Builder* for your efforts.

APRIL DARNED GOOD AIRFOIL—GRANT X12

C.H. Grant may have been forecasting the future when he put this section on paper-back in the early days of free flight model-

ing. The Grant X12 is a more contemporary airfoil than any other section that I have seen published from the pen of Mr. Grant. The X12 has a seven-percent high point and a slight bit of undercamber. With the upswept leading edge, this section would be worth consideration for lightweight gas-powered free flight ships, such as any of the AMA gas classes. In contrast to other Grant sections, this one should be considered if you are looking for something new for that winter AMA Gas project.

A couple of thoughts: The leading edge would need to be either a large piece of lumber in order to get the upswept leading edge properly finished or it could be built up with the leading edge lumber set on its edge. Since the section is quite thin, it would pay to investigate webbed spars or a D box-type of construction as well. Good luck with it.

APRIL THREE-VIEW—THE BUBAK A-3 by Lubomir Siroky

As explained in the leader for this month's column, the A-3 class was developed in Czechoslovakia, and the Bubak is considered to be one of the most competitive designs of the class currently being flown. A-3 has established the following rules and are presented here for any reader who is interested in experimenting:

Total projected area of wing and stabilizer, 12dm sq. (approximately 186 sq. in.) with no wingspan limit; weight, 150gms minimum (approximately 5.91 oz.); towline length, 25m (or hi-start 25m line + 5m rubber); flights, 5 rounds with 60-second maxes.

You can see from the above rules that the models are quite small, with the wingspan of the Bubak just under 40 inches. Because of their size, they can be built practically anywhere and transported easily.

For the potential builder, the Bubak three-view has been presented in metric scale; however, the major large parts, rib patterns and fuselage front, are presented full-sized. If you will must, convert the metric scale to the English (American if you will) system of measure. Here are a couple of easy conver-



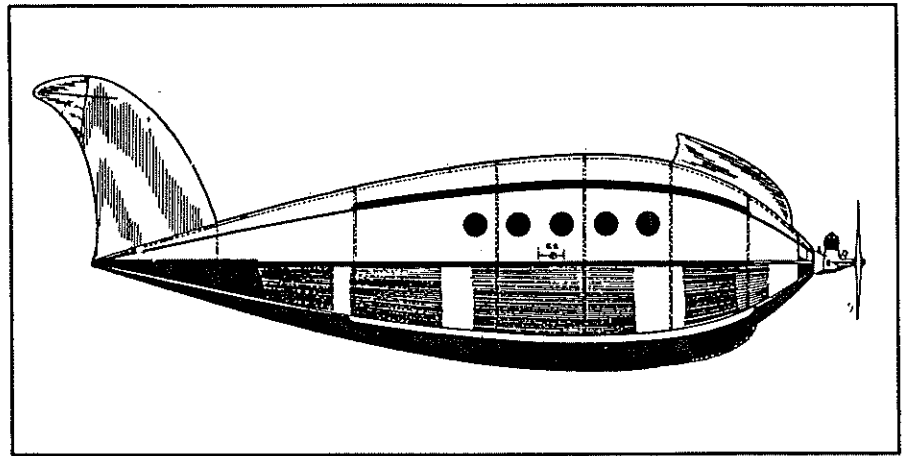
All the way from Czechoslovakia comes this photo of a trio of A-3 glider fliers. From left: correspondent Ivan Horejsi, Lubomir Siroky, holding the Bubak, this month's 3-view, and J. Smitka. Small ships, as you can see—or maybe the Czechs are very large men!

sions: 2mm wing ribs or other balsa parts can be substituted by 3/32-inch sheet. 3mm equivalents are close to 1/8-inch. Any metric measurement can be converted to inches by dividing by 25.4. Enough of this, let's get to the Bubak.

Review the three-view carefully. The surfaces are built in a very straightforward manner. Construct each wing panel separately with all spars completely installed. Install the wing wires where indicated by the + on the rib pattern. Use epoxy to adhere the aluminum tubes in the wing root. Since the model has tip dihedral only, sand in the dihedral angle where the tips join the main panel. Use epoxy to adhere the tips to the main panels. Cover both the wing and stab with a good-quality tissue.

The fuselage uses an 8mm (3/8-inch) basswood, pine, or hard balsa core. The rear end framework is made from 2mm x 8mm (3/32 x 3/8) balsa strip with uprights every 1-3/4-inch or so. Glue to the core and when dry, cover the entire fuselage with 3/32-inch medium "A" grain balsa. Sand to smooth section. If you decide to use a fiberglass tailboom as shown in the full-sized sketch, then the 3/32-inch balsa sheet cover only covers the core—not the boom.

After construction, add weight to the weight box in the nose until the ship balances at 50 percent. Add the towhook and other rigging as detailed. The model can glide to either the left or the right, so rig the autorudder to suit your particular tastes. Check the overall weight of the model. It must weigh 150 grams. If it is underweight, then add weight under the CG to bring it to



APRIL MYSTERY MODEL

150 grams. If it is too heavy—build the next one lighter.

Flying: Hand glide the model to determine glide. Raise the trailing edge of the stab if the model dives; raise the leading edge if it stalls. Turn is adjusted by autorudder offset. When satisfied with the glide, test-fly the model with a lightweight 25-meter line. Tow gently into a light wind. Move the towhook forward if the model weaves on the line; move the towhook back if it will not climb. Ideally, the model will climb straight ahead, and when overhead, you pull back on the reel to release the towline. After the release, check the glide for a 150- to 200-foot circle. Adjust the circle with autorudder. Good luck with the ship, I think it's a good starting point for small field towline glider—and worth the

effort.

KEEPING UP WITH FREE FLIGHT AROUND THE WORLD

For free fliers who are interested in the world free flight scene, the premier magazine is *Vol Libre*. *Vol Libre* contains articles on all aspects of free flight—mainly in French, but also in German and English. It also contains a wealth of plans of models and details. Each issue contains approximately 60 pages 8.5 x 11.5 inches.

Now, *Vol Libre* is available via an American source. Send to Peter Brocks, 313 Lynchburg Dr., Newport News, Virginia 23606. The cost is \$18 per year (6 issues).

AN OBSERVATION

Hollywood is great. It's the only place you can buy a calculator with unlisted numbers.



Doug Galbreath peers skyward to find his just-launched FAI ship. Roger Simpson peers skyward in the opposite direction to find the right lift so he can launch his FAI ship. Photo: Dobbins.



Here's Walt Ghio, perched on the grass at Waegel Field in Sacramento just waiting for the thermals to come through. Photo: Dobbins.



STA	0	1.25	2.5	5	7.5	10	15	20	25	30	40	50	60	70	80	90	95	100
UPR	0	1.6	2.47	3.6	4.47	5.13	6.0	6.6	6.87	7.0	6.87	6.33	5.53	4.4	3.13	1.6	-	0.04
LWR	0	-0.8	-1.07	-1.53	-1.73	-1.8	-1.73	-1.2	-0.87	-0.6	-0.33	-0.4	-0.53	-0.6	-0.47	-0.27	-	0.04