Author's prototype is good example of every day sport flier. Modelers may correspond in English, Swedish, or Chinese with Hoh Fang-Chiun, Skordevagen 8, Stockholm/Tyreso 1, Sweden.

# THE PIKOLO

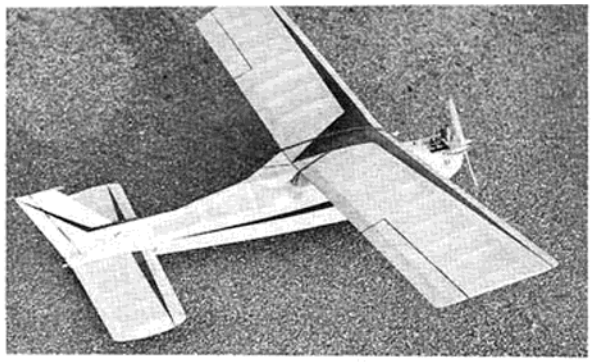
BY
HOH FANG-CHIUN

Escapements or four channel, the Pikolo is a rugged, dependable, and easy-to-handle design for the Sunday Flier.

THIS Radio-Controlled Sport design is recommended if you want fun at low expense and little effort. It is easy to build, robust in construction and possesses a constant stable flight performance once the model is properly trimmed. The powerplant can be any diesel or glow engine of .09 to .15 capacity. Any radio outfit providing rudder and motor throttle controls may be readily installed. Because there are so many suitable R/C systems available on the market I did not specify any particular installation on the plan. My original prototype uses a German Variophon-Varioton R/C set, with a Bellamatic servo for rudder and a Servo-automatic servo for throttle, the installation of which is clearly shown on the photographs. The construction of the model is quite conventional, so building it should not offer difficulties even to the beginners. As can be seen from the plan, materials used are often generous. Therefore, select only medium or medium-soft balsa wood throughout the entire model in order to keep the weight down to a minimum.

## CONSTRUCTION

Start with the wing. After cutting the ribs and spars, pin down the trailing edge directly on the plan over wax paper. Be sure that the notches are already cut in the trailing edge. When cutting these notches, make them slightly undersize for a tight fit to the ribs. Cement all ribs in place except the center rib WA, using pins to hold these in position while they are drying. Note that rib WB is cut 1/16" undersize, top and bottom, to hold center section sheet covering. Add 3/16" sq. top spar and leading edge stock while the panel is still on the working board.



Now cement the lower spar and sheet wing tip in place. The opposite wing panel is built in the same manner on the back side of the drawing. The three dihedral braces are cut from 3/32" plywood. To join wing panels, first cement brace BB to the 3/16" thick center rib WA, checking carefully that the joint is at right angle. Fill the gaps between brace and wing spars with 1/16" strips and cement this unit to one panel side, allowing several hours for drying. Now join opposite wing panel very carefully with spar ends joining each other precisely. Cement the leading- and trailing-edge braces in place, using spring-loaded wood clamps to hold them in position. Complete the wing by adding leading edge- and center-section sheeting, both on top and bottom. Note that the leading edge sheeting butts against the back of the leading edge but rests on top of the spar. Finally, add the trailing edge protector wire, reinforced with gauze as shown on the plan.

The stabilizer may be built next. Note that the trailing edge is cut down to 3/4" wide from 1/4" x 1" stock. Since the stabilizer has a symmetrical airfoil I suggest you assemble it "in air" rather than on the working board. Slide and cement the ribs onto the mainspar, checking the alignment frequently to avoid warps. Next, add leading edge, trailing edge and sheet tips. Cover top and bottom of the center section with 1/16" sheet before final sanding.

Start the fuselage by cutting all the components. For fuselage sides, medium-hard balsa is preferred. Cement cabin formers FC and FD to the sides and be certain that the joints are at right angle. Now cement front formers FA and FB in place and join the fuselage sides at the rear with a small balsa block. Add remaining formers and complete rear fuselage with top boom and 1/8" sheet covering as shown. Install a suitable metal fuel tank between the hardwood engine mounts and cover front top with 1/8" balsa strips.

With regards to the fuel tank, I personally believe that a permanent metal one is entirely satisfactory for sport flying purposes, as in the case here. The one shown on the plan gives my model a powered flight of approximately 20 minutes. With a .15 engine a good 15 minutes engine run should be obtained.

Landing gear platforms consist of three 1/8" plywood plates. Cement these in place. Before covering the fuselage bottom with 1/8" sheet do not forget to cement tailwheel components in place. The tailwheel wire should be bound to the platform with heavy thread using plenty of cement. Nose- and windshield-blocks are now added and sanded to shape. Use soft blocks for this purpose to facilitate the sanding. Leave all hardwood dowels at this stage. These are glued in place after the fuselage is covered in order to facilitate the covering.

The vertical stabilizer is built up entirely of sheet. Cut two identical fin pieces from soft 1/8" sheet. Cement the 3/32" x 1/8" center spar to the sheet sides and join the leading- and trailing-edges as shown on the cross section of the plan. Add a small block on top of the fin and sand it to a streamlined section. Join the sheet rudder to the fin with durable linen hinges or miniature metal ones.

Make the landing gear from piano wire or dural aluminum, the former method being shown on the plan and as used in the original model. Use lightweight balloon wheels, the air-filled type being preferred but certainly not necessary.

Finish the model by first giving the exterior balsa surfaces two coats of thin clear dope, sanded lightly between each coat. For covering, use lightweight silk for maximum strength. To cover "open areas," that is, wing, stabilizer and fuselage rear top, it is suggested to use the wet method for freedom from wrinkles. After fuselage covering is completed cement the rudder assembly and dorsal fin firmly in place and add all the dowels as previously mentioned. Now give the entire model at least four coats of clear dope before applying any colored dope with regard to weight and future repairs. If no colored dope is used, add two extra coats of clear dope. The original model is covered with white silk and finished with red decorative lines.

Radio installation is up to you! A general rule is to house heavy components such as batteries and receiver as far forward as possible to avoid a tail-heavy condition which, incidentally, is very common for high wing designs. Also, always secure the battery and receiver packs in place against foam rubber pads.

The engine should give about 2 degrees right thrust. The down thrust may vary from model to model, so the exact amount can only be obtained through flight tests. To start with, the built-in downthrust should be sufficient for a .09 engine. More downthrust will be required if a .15 engine is used. Regarding the propeller, an 8" x 4" size would be correct both for .09 and .15. If a .15 diesel engine is used, increase propeller size to 9" x 4". Before flight attempts, be sure that the Center of Gravity location is according to the plan and there are no warps in the lifting surfaces. Glide testing is good, but not necessary if the above precautions are taken. With an .09 powerplant, full power can be used for tests while reduced power is recommended if a .15 engine is used.

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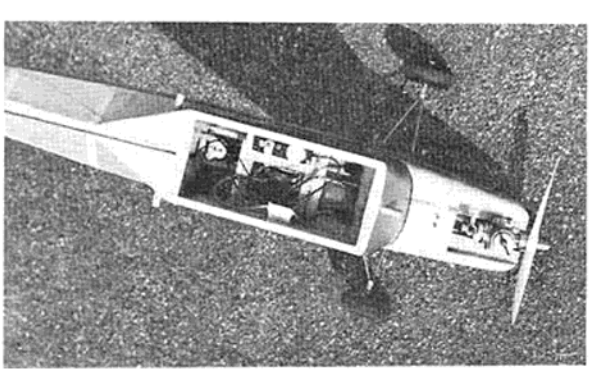

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