Looking for something different? Try this out-of-the-ordinary air-buggy. This unique design makes an exciting project for sport flying. Pixie's design was motivated by two things. 1- Previous successes with delta free-flights. 2 - A long standing admiration for the negative-stagger-wing Beechcraft. With the introduction of the Pee-Wee engine we decided to combine these two factors into a single configuration. The results of this combination produced a unique appearance and still retained the easy adjustment characteristic of deltas.

When the original Pixie was completed, we headed for the local flying field. The wind was blowing fairly strong. Not an ideal day for test flying. However, we were unable to contain ourselves and decided to give it a try anyway. A few test-glaides were made and we were ready for a try at powered flight.

With the engine running rich we launched the ship on its maiden voyage. Pixie struggled to maintain altitude—but she was airborne. With the engine barely running the ship settled and the flight was finally terminated by a gust of wind which resulted in a not too smooth landing. On subsequent flights the engine speed was increased, flights became longer and minor adjustments were made. Five flights were made that first day and as the .020 approached peak performance it became evident that the

(Please turn Page)
little engine had power to spare. On the final flight a little down-thrust was added and the engine was operated wide open. Pixie took off in a fast left climbing turn. Her twin silhouette made a fascinating picture as she continued her fast low-angled climb. Her glide while not being of the sailplane type was flat and fast.

The day was not completely without mishap however the gusty air with subsequent hard landings had taken its toll. The auxiliary wing on Pixie showed signs of stress and cracking Changes were made and the auxiliary wing was covered with sheet top and bottom, A reinforcing strip was also added. A balsa fillet was added which in this case serves as a gusset. The additional weight was handled easily by Pee-Wee.

Below: Winging along in a left bank, Pixie zooms skyward from the catapult. This device it not necessary for flying, but was used in early tests to prove the design's merit. Simple hand-launching will suffice and the model will go in a wind. Deltas are noted for their extreme stability under power and the rather poor glide. These features add up to a fine sport flying free-flight.

Rib W-2 is now cemented in position. When this half has dried remove the assembly from the plans and build the left wing by the same method. Notice that the rear spar and the leading edge do not join at the center line at this time. This is to accommodate rib W-1 which extends through these points and attaches to the rear of the firewall. When the left wing has dried, you are then ready to cement rib W-1 in place. This is best done by laying the wing on a flat surface and then propping up the tips of the trailing edge so that they are equal.

A right angle check will now assure that rib W-1 is aligned. Add the 1/16" x 1/8" cap strip to rib W-1. Former F-1 should be omitted at this time.

AUXILIARY WING: First cut all the ribs from 1/16" sheet. Begin by pinning down the leading and trailing edges of the right half Attach the spars and ribs. In this case, it will be easier to cement the center rib in at this time being careful to mount it at the proper angle. Build the

STRUT: Little explanation is needed here. The strut consists of a 1/16" plywood core with 1/16" hard balsa facing on each side. Once this unit is sanded to shape you will be ready to join all the major components i.e., main wing, strut and auxiliary wing.

Bevel the bottom edges of the strut and cement securely in the slot of the auxiliary wing. The balsa fillet is now added. Cement rib W-1 into the slot of the strut.

Care must be taken to insure that the auxiliary wing is mounted with 1/8" incidence. This is accomplished by the movement of the entire assembly in the slot. Formers F-1 are now cut from 1/8" sheet and cemented in place.

FIREWALL: Cut the firewall as shown on the plans and mount. The balsa filler blocks are mounted after the engine is installed.

RUDDER: Cut the rudder from 1/16" sheet. The use of lightening holes is optional. The elevons are cut from 1/16" medium sheet.

COVERING: Finish sanding all components.

MAIN WING: We'll start with the main surface. Cut out the wing ribs from 1/16" hard sheet. Only three ribs are used Next cut out all spars and gussets as shown on the plans. Now assemble the wing outlines for the right wing directly on the plans Next attach all spars in the proper position Note spar A-l and B-l when pinned flat for the right wing will cause the left half of these spars to be raised. This is normal and will give automatic dihedral when the left wing is built. Gussets are added at this time.
Cover the main wing in conventional manner and attach the elevons before shrinking the paper. If lightening holes were cut, it will also be necessary to cover the rudder. The auxiliary wing and elevons need not be covered but it is recommended. After the first coat of clear dope has dried, cement the rudder in place. Then give the entire aircraft three additional coats of clear.

**FLYING:** Check the balance point. If the model balances within 1/4" of the proper position, you are ready to test glide your Pixie. Adjust the glide with the elevons. Initial power flights should be made with the engine running rich. The design appears to adjust equally well either left or right under power. Once a satisfactory flight path is obtained run the engine at peak and watch your Pixie go!

Deltas have been a popular subject and we have received many requests for models of this type. We hope that this unique model proves satisfying and inspires you to send us comments on your delta modeling experiences. Drop a note, or card, c/o the Editor.
NOTE: ALL RIBS ARE 1/16" HARD SHEET BALSA.

Commitment to fire safety:

- Plywood Gusset
- Plywood Center Ends Here
- Balsa Gusset
- Firewall
- Lightening Holes
- Rudder
- Rudder Tab

Plate 2a
Plate 2b

PIXIE