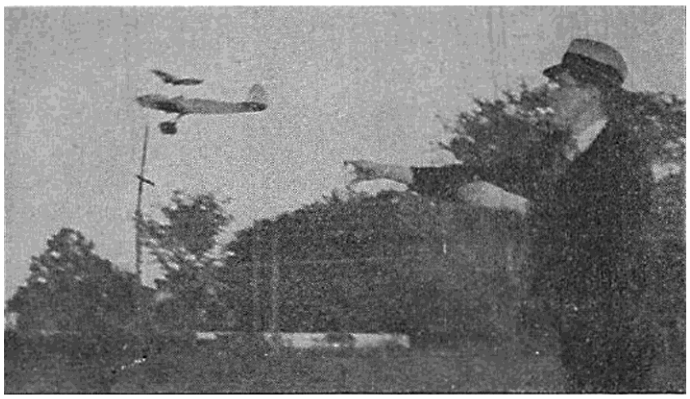
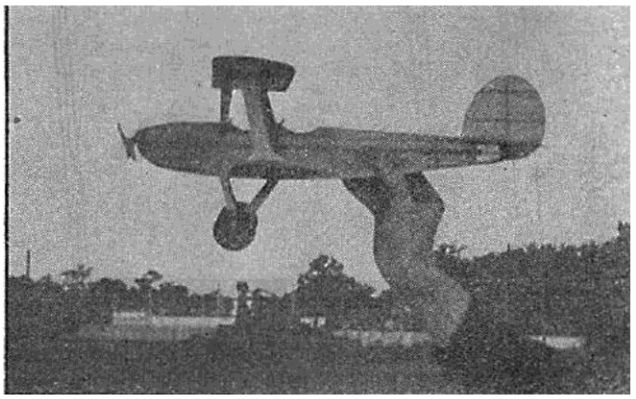


The model takes the air for a long and steady flight

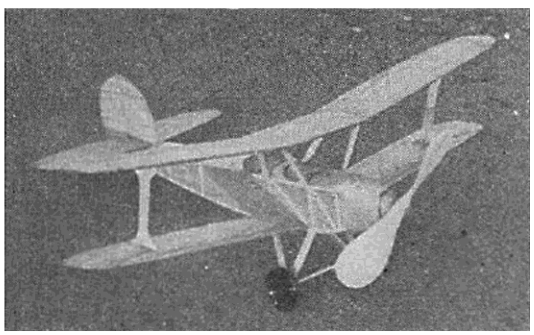


The finished model ready to hand-launch

Building the Famous Udet Flamingo

How You Can Build a Model of the Unusually Fine Flying Plane Used at the National Air Races by the Famous War Ace, Udet

By WILLIAM WINTER and WALTER McBRIDE



The completed ship is light and strong

The Udet Flamingo

THE Flamingo, a popular German light plane used for school and acrobatic work, is known to all of us through the spectacular stunts performed by the great German war ace, Udet, at the National Air Races in the past few years. We all can recall the dead stick acrobatics performed at low altitude. Despite the fact that it has only one hundred horse-power, it is one of the best combination school and stunt planes of the last 10 years. To date about eighty have been built.

The model is rugged and is an excellent flyer. It has a very steep climb with quick recovery.

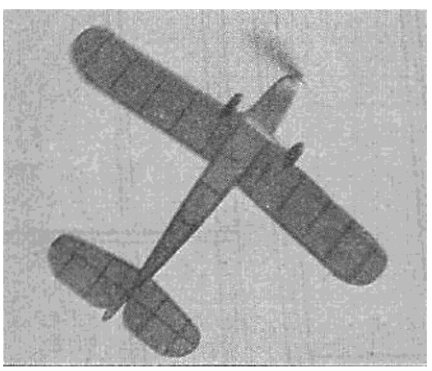
Fuselage

(Note: Both sides are assembled at once)

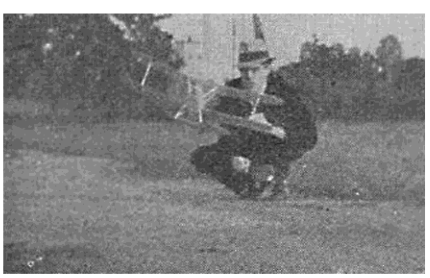
It is advisable to cover drawing of fuselage with waxpaper to prevent sticking. The longerons of ⅛" sq. should be a soft grade. They are pinned down on the side view. All cross pieces are cut to size and cemented in place. When dry remove pins and separate fuselage sides with razor blade. Widest cross pieces are cut to size as shown in top view and glued in place. Pins will hold work in position. When dry, draw rear together and cement. Add remaining cross pieces at designated positions.

Cut T section from a ⅞" piece of ¼" sq. and cement in place. Rear hook might now be added. Formers are cut from 1/16" sheet and cemented at stations shown. Cut notches to receive 1/16" sq. fairing strips and cement fairing in place. 1/32" sheet is bent between cockpit formers and cemented. When dry, mark out cockpits and cut with a sharp razor.

The nose block is cut from a soft block 1⅞" x 2 1/16" x 1½". Cut top and side patterns, mark and cut block to suit. Round edges as shown in nose detail and sand. Cut block in half and hollow out. Leave block heavy as it balances plane in flight. Cement halves together and finished nose block to fuselage.



An unusual "shot" of the model in actual flight directly overhead



It R.O.G.s with ease and grace

Cut a piece of tissue for *each* side and bottom of fuselage. Leave it long enough to cover nose block in order to match color of fuselage. Dope a few cross pieces at a time and starting at one end, work paper toward the other. Trim loose edges. The fairing is covered with narrow strips to avoid wrinkles. Cover both cockpits in order to match colors. Trim excess paper and dope-frayed edges down. Cement windshields in place. Bend tail skid from 1/16" bamboo, point one end and insert in proper cross piece. The surface is doped lightly.

Landing Gear

Streamline an ⅛" x ¼" strip and sand. Cut struts as shown in detail and bevel edges (both ends) to fit flush with fuselage and each other. Use pins to hold in place while cement is drying. Bend .028 music wire for axles, mount wheels, and fasten with thread and cement to spreader bar.

Tail Assembly

The stabilizer is built much in the same manner as the fuselage. It is laid on the plan and held in place by pins. First the spar of 1/16" x ⅛" is located and then the ribs are cut from 1/32" sheet balsa and glued in place. Their sizes can be found in the stabilizer detailed plan. The edge is 1/16" bamboo bent around a candle flame and glued to the cross pieces. A sheet of tissue should be cut to fit either side of surface and by doping a few cross pieces at a time, cover in same manner as fuselage. Trim all edges and dope surface lightly.

The rudder is built in the same manner with the exception that the ribs are in one piece. They are cut out to receive the 3/32" spar. Ribs are cut from 1/32" sheet. Spar passes through holes in ribs. The tail surfaces may be pinned in place while cementing to fuselage.

Center Section Struts

The center section struts are cut from a piece of ⅛" x ¼", streamlined and sanded.

(Continued on page 35)

Building the Famous Udet Flamingo

(Continued from page 15)

The proper lengths are shown in detail on the plan. Bevel the ends to fit flush with fuselage and wing. Pins are used to hold in place while drying.

Wings-Upper

The spars of 1/16" x ⅛" are pinned in place with the narrow side down. The ribs are cut from 1/16" sheet and pinned together. Sand them even and trim ends. Cut notches and remove pins. Cement ribs in designated positions. The leading edge of 3/32" sq. is rounded on one side and cemented in notches at front of ribs. Be careful that edge is not wavy as seen from above. Trailing edge is of 1/16" x ⅛", shaped as shown in plan. Tips are bent by heat from 1/16" bamboo. Notch end of trailing edge to receive tips. Both trailing edge and tips are held in place by pins while cement is drying. When dry, remove pins and crack spars and edges at first rib on either side of center. This is to obtain the proper dihedral. Pin center section to bench at the first rib on either side of center rib. Elevate by placing 1" blocks under each tip (keep center section flat on bench) and cement cracked spars. A short piece of 3/32" square is for the top outer sections, one for the section in the center and one for the underside. Dope a few ribs at a time, or if you wish, dope only the edges and last two ribs and apply paper. If the last method is used the surface is doped, which, of course, causes the paper to adhere to the ribs. In either case, trim all loose edges and dope down frayed ends.

Wings-Lower

The lower wings are built the same way as the upper but in two sections, each of which is cemented to fuselage when completed and covered. Care should be taken that the first rib is tilted to permit the correct amount of dihedral. It is now advisable to pin the upper wing to the center section struts and to line it up with care. When everything is true, cement struts to wing.

I Struts

These interplane struts are cut from a piece of ⅛" x 1¾". Cut them to proper profile and then streamline and sand. A detailed drawing is provided for this purpose. when completed, cement between wings at ribs shown on plan.

Propeller and Motor

The prop is cut from an 8" x 1" x 1¾" block. The block is first cut to the outline shown. The top surface of each blade is then cut, slanting the blade toward your right side. It is slightly rounded as is the upper surface of a low lift rib. The back surface of the propeller is cut in the same manner with the surface cambered slightly inward. A cross section of the blade would be similar to a wing rib. Drill a hole large enough to receive the shaft, and placing a pen through this hole, balance the propeller. Whichever side descends should be cut a little more. The prop is then sanded and rebalanced. Bend the shaft and glue in place. A ¼" washer is fastened to the rear of the hub. An ⅛" washer is placed loose on the shaft to take up friction.

The nose plug is cut and sanded to shape shown on detail drawing. Drill hole for shaft and cement ¼" washer to front end to act as bearing. Plug is placed on shaft before hook is bent. Motive power is six strands of ⅛" flat rubber.

Flying

The model should be first tested in deep grass with a few turns. If it noses up, the tail should be slightly bent down along the elevator line. If, for some reason, your model should be an extreme case, a little weight may be added to the nose. As this is a flying scale model with the wings in real plane position, a nosing down is not probable. When balanced and fully wound this little ship is stable and climbs rapidly to about 20 feet, levels off and then commences a long, gradual ascent in circles, due to torque.

We have flown this model, winder-wound and hand-launched, about a distance of 400 to 450 feet.

Required Materials

6 pieces ⅛" sq. x 36" for longerons and cross pieces.
2 pieces 3/32" sq. x 36" for leading edges and rudder spar.
4 pieces 1/16" x ⅛" x 36" wing and stabilizer spars.
1 piece ⅛" x ¼" x 36" landing gear, center section struts and spreader bar.
1 piece 7/18" x 2 1/16" x 1½" (soft) nose block.
1 piece 1¾" x ⅛" x 7" for I struts (interplane).
1 piece 1/16" sq. x 36" for stringers.
1 piece 1/16" x 2" x 18" for wing rib and fuselage formers.
1 piece 1/32" x 2" x 12" for stabilizer, rudder ribs, and cockpits.
1 piece ⅞" x ¼" sq. for T section.
1 piece ⅜" x 1⅛" x 1" for nose plug.
1 block 8" x 1" x 1¾" for prop.
1 foot .028 music wire for hooks and axes.
1 scrap celluloid for windshields.
½ ounce clear cement.
1½ ounces clear dope.
2 pieces Jap. tissue, choose colors to suit.
1 pair 1⅞" wheels, (black celluloid).
2 washers ¼" for prop hub and nose plug.
1 washer ⅛" for friction.