DESIGNS AND DATA

DECEMBER, 1968 — 50 CENTS

flying models

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Scale Radio Bipe:

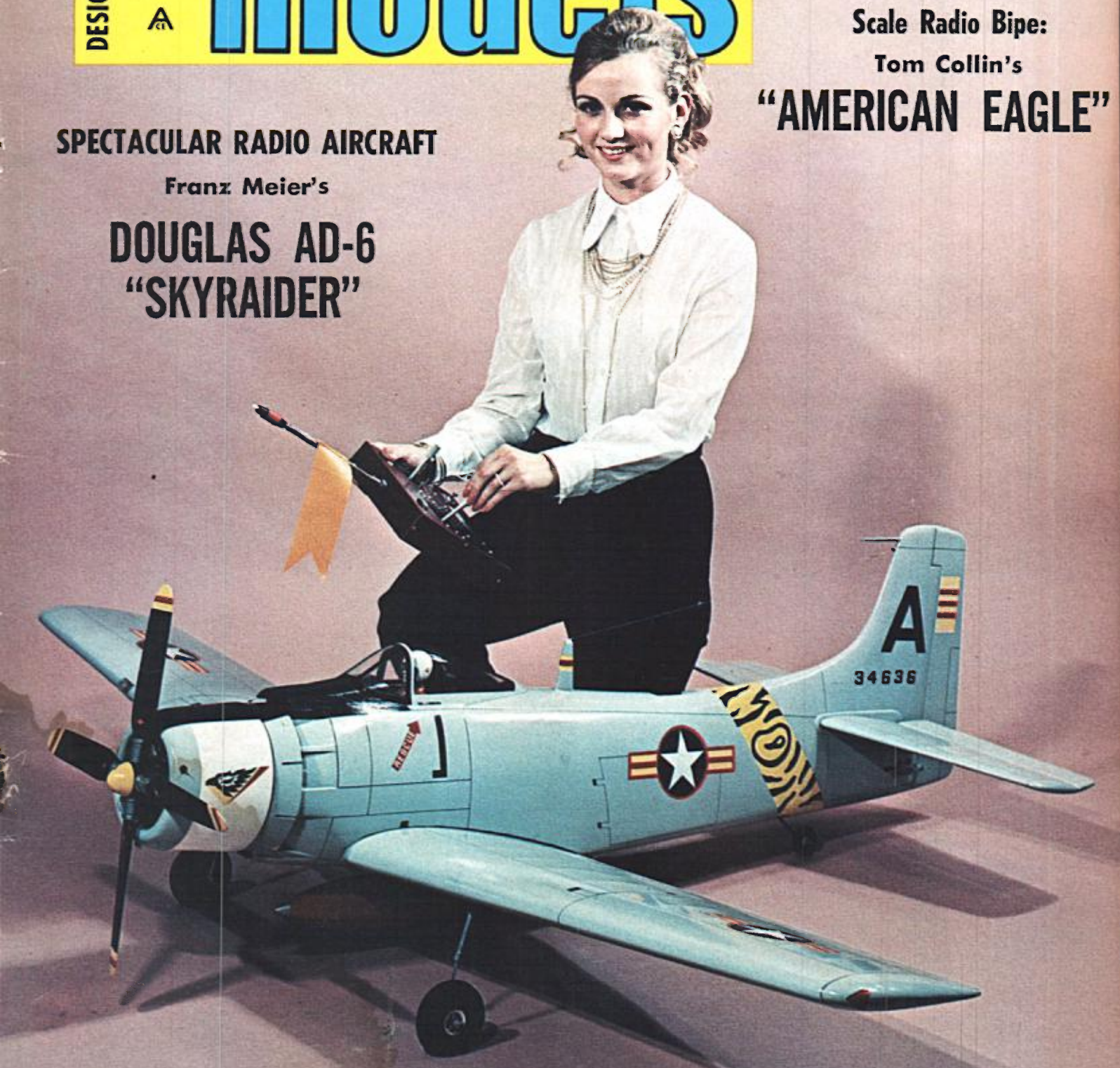
Tom Collin's

"AMERICAN EAGLE"

SPECTACULAR RADIO AIRCRAFT

Franz Meier's

DOUGLAS AD-6 "SKYRAIDER"



Olathe N.A.S. Nationals... World War I Rehash... at Brimfield...

A RADIO SPECTACULAR FROM SWITZERLAND . . .

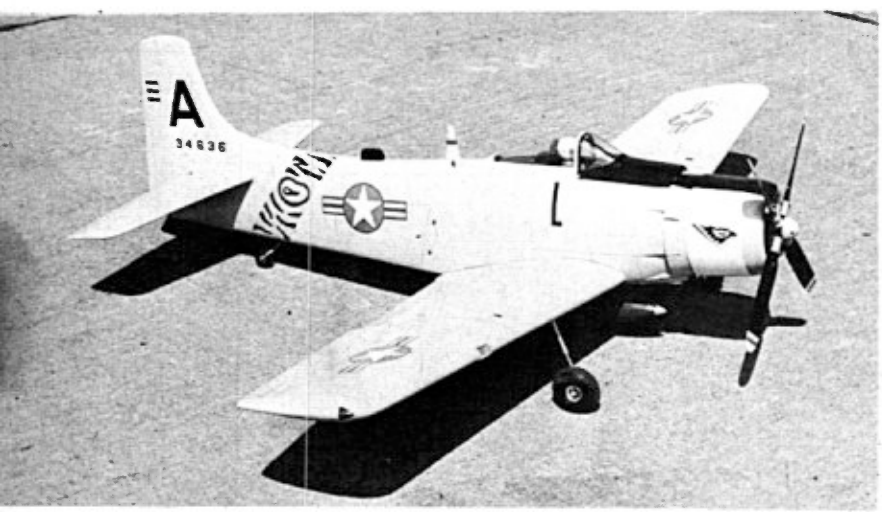
by Franz Meier

Douglas AD-6 "SKYRAIDER"

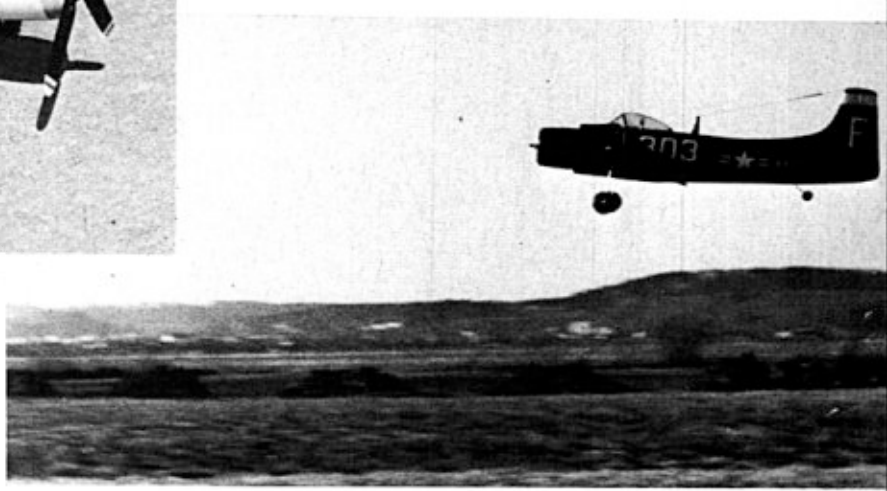
The big radio scale ships separate the men from the boys. A lot of marbles to roll down the runway, but then, that's the name of the game.

The Douglas "Skyraider," formerly called AD-6, now the A1-H, hardly needs an introduction to those familiar with military aviation. Created in a crash program as a replacement for the Douglas SBD dive bomber in a Washington, D.C. hotel room by a team of Douglas engineers, the "Skyraider's first flight in March 1945 as the BT2D-1 "Dauntless II" marked the beginning of an era for this aircraft that spanned over 23 years. The last AD-6 was officially retired by the U.S. Navy at Jacksonville in July 1968. A fuller history of this famous attack aircraft is contained in Profile Publication Number 60 and is very interesting reading.

As this is of conventional construction, it is very important to read the building instructions over once (referring to the plans and relating the parts mentioned in the text to those numbered on the plans) before constructing your own replica. There are numerous notes on the two pages of the plans, plus three photos of the construction and installa-



Same model, repainted after fire damage. In the colors of Vietnamese Air Force, 1965, Bien Hoa.



AD-6, flaps extended, in for a landing. Its first flight. A retractable landing gear would aid the scale points. Inspiring in flight.

FULL SIZE PLAN #MPS-125 AVAILABLE THROUGH "MODEL PLAN SERVICE"

First take-off, smooth. Use a good muscular .60. It assumes about a scale speed in flight. Nice!

"SKYRAIDER"

. . . continued . . .

tion of the motor, which will give the modeler the "feeling" of this scale aircraft.

Begin construction of the fuselage with the fuselage bearing sides, which is really a double-keel type construction which makes a rigid and strong fuselage. If you cannot find the required sheets of the specified length, they must be made up of two or more sheets glued together with white glue. When dry, cut to shape as shown on the plans, mark the position of the fuselage formers, making sure they are vertical to the centerline of the fuselage. Then glue the ply-doublers to the fuselage bearing-sides (shown as shaded area on the plans). Note that the engine mounting is very similar to that of a full size aircraft using wood instead of metal tubing. Now sand formers 2a, 3, 6, and 17 to a smooth contour. (Former No. 17 and 17A are shown on Sheet 2 of the plans). Now firmly cement these formers to the fuselage bearing-sides, maintaining an exact 90° angle, without any twist to the fuselage. Block it up with books or heavy weights as necessary. Note that the engine mount is of maple and extends from former #1 through former #3, yet the engine itself is mounted to ⅛" aluminum sheet cut to size. Some modelers prefer micarta board as a break-away engine mount, which is easily replaced. Now gradually work toward the rear of the fuselage, installing the formers in numbered sequence. The tail-wheel bracket should be constructed and mounted as shown prior to installation of former 9. Note that former #10 and #11 both have brass tubing added prior to installation onto the fuselage-bearing sides. Also that there is a ⅝" by ⅝" balsa strip on both sides of the lower fuselage, which must be installed prior to adding the numbered "A" segments, ie., 7A and 8A, which serve as fuselage sides. The numbered "B" segments are added to finish the correct contour of the fuselage. Allow to dry for at least 24 hours, then check for alignment, straighten out any warps and plank. It is important to use medium hard wood for this purpose. Plank each side simultaneously and if necessary, use warm water to soften the balsa sheets sufficiently to bend without breaking. Start with the bottom center-section, then add a piece to each side, joining with the sides. The top is planked last. Now slide former #2 in from the front of the fuselage and glue it with white glue or UHU-Coll. This is the first step in constructing the engine cowl. Next glue in former 3A and plank the entire nose section as indicated on the plan. Note that there is air space around the nose of the fuselage, and it must be planked accordingly. Continue on with the engine cooler flaps, which are fixed to former #2 and not moveable as they are on the real Skyraider. It may be possible to find a metal pot which has the same diameter and shape of the cowl, but if not, it must be shaped as shown on the plans from various pieces of balsa. Cut two balsa blocks to a conical shape as depicted on the sketches and fashion the upper oil cooler. Next is the most difficult part of this scale model. Cut out six pieces from ⅝" medium balsa stock, and glue them to a block conforming to the curve of the nose. Roughly shape the outer form, because the lower oil cooler will be smoothed out after it is cemented to the fuselage, and after the wing is mounted so as to present a streamlined appearance. Now lay the fuselage aside to concentrate on the wing.

First cut all ribs out, then glue the wing bearer (maple) #14 and #15 to the plywood doublers and to the ribs, spaced as per the plan. These must be a tight fit and accurately cut. Note that the maple landing gear bearing block fits between ribs #2 and #4 on each side of the wing. Again we recommend UHU-coll for plywood to maple joints. Check for a good firm seating of these parts because of the weight of the model on landing is borne by these parts. Complete each section of the

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AD-6 "Skyraider"

(Continued from Page 13)

wing and when dry, join by adding #16. The correct dihedral angle is established by the cut of parts 14 and 15. The wing is now planked, beginning with the middle pieces on the top part, allowing for the placement of the servos for the flaps and ailerons. Now plank the bottom part and when dry, cut the riblets for the flaps and ailerons, which are built separately and installed by hinges, fixed with toothpicks or a small wood screw. Study rib #4 cross-section. Now install the bellcranks and pushrods, and strive for freedom of action and without binding at any position.

Next cement the leading edge and the wing tips to the structure and sand well. Now cement #17A to the leading edge, install the retaining dowels, which are sanded half-round when dry. Now fit the wing to the fuselage, and fill the spaces aft of 17A and the space between former #3 and #17 with soft balsa. As you will have noted, the wing is held to the fuselage with nylon screws, such as the Williams Bros. market. Installation is simple and yet sufficiently strong for aerobatics. Now the whole model "Skyraider" is sanded, the holes filled with Hobbypoxy "Stuff" or similar balsa filler and when dry, is sanded again.

The stabilizer is simple, but must be built prior to building the vertical fin. Cut out the plywood ribs and the balsa ribs, drill the holes for the brass tubes and cement in place on the plan. A study of the cross-section of the root rib will greatly assist in assembling the stab. Taper the top and bottom spars to save weight and cement to the stab. Now cap the remaining portion with scrap balsa to present a smooth surface for planking. Two plywood ribs, identical to the root ribs, are prepared and when appropriate, cemented to the fin, at formers #10 and #11. Small slivers of balsa are added to line up these root ribs with the stab. The mechanical trim device is shown on the plans, however, at the time this device was used, the "Skyraider" was flown on "Tip-Tip" equipment, but later flights on proportional equipment obviated the necessity of it. However, if not used, some other method of attaching the elevator bellcrank must be used. Consider that the bottom under the stab is removeable, it is possible to glue the stab halves on permanently. Here it might be pointed out that both Germany and Switzerland

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The pre-flight tension takes over. Fire it up.

AD-6 "Skyraider"

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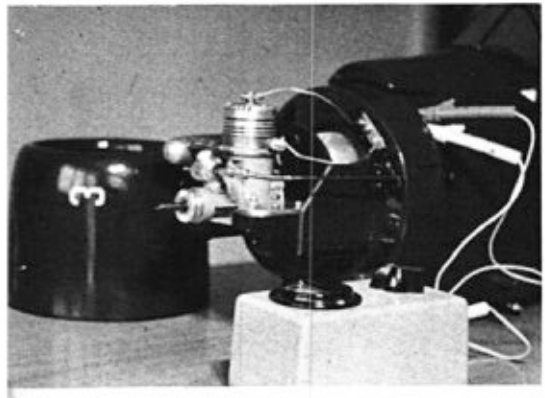
have only small "Bugs" for transportation and this is the reason for the removeable stabilizer. The elevators are made from soft balsa and hinged with DuBro hinges. Strive for a no-bind condition to save battery drain. The vertical fin cross-section shows three pieces of balsa, one cut to the shape of the inside of the fin, and the half ribs added, then planked on the outside for a smooth contour. Sand out the rough edges and prepare for covering. The rudder is cut from soft balsa and sanded as shown to a streamline shape.

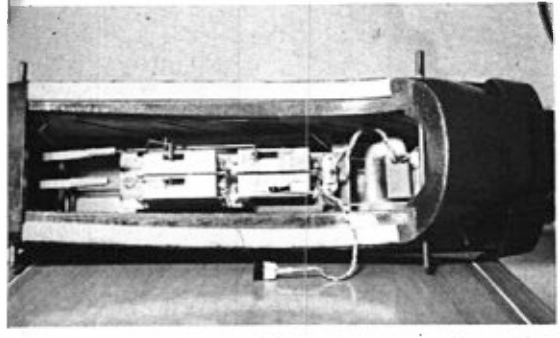
When mounting the motor, make provisions for leading the glow plug connections to an insulated set of connections as indicated in the photo. Also if a muffler is used the exhaust is led out through the left middle air outlet of the cowl.

The fuselage is finish-sanded with 400 grit, then silked. After three coats of dope, it again is sanded smoothly and sprayed according to your preferred color scheme. Model Plan Service furnished a Profile Publication No. 60 with each plan sold, and there are many different color schemes in this publication, eight of which are in color. To keep weight down, the balsa planked surfaces of the wing, stab and rudder are covered with Silkspan. Before installing the canopy, paint inside with olive green, then install with UHU-Alleskleber or with Super MonoKote cut into small strips. Now protect the canopy with masking tape, and spray the colors on. Remember that two thin coats are better than one heavy coat.

The radio gear is installed through the wing hatch and there is sufficient room for it. Each radio installation is different, and in all probability, detailing the R/C installation used would be a waste of time, because of the many different kinds of reliable R/C equipment now available. One factor cannot be ignored however, and that is the position of the C.G. Shift your R/C equipment and batteries to correctly align the C.G. position as shown on the plans. The angles of incidence must be maintained as shown on the plans, or the model will present many problems on the first flight. Further, it is very necessary that the flaps have the same angle. When all is as it should be, then begin your flight testing with a ⅓ down flap position. This position will provide sufficient lift for a smooth take-off (about 100 feet) without the aid of the elevator. Do not stunt before adequately trimming out the model and becoming very familiar with this scale model in flight. And don't let the size affect your depth perception. You may have difficulty in the throttle position of the engine, but put the intake position as far forward as possible. Also there should be at least ⅛" distance around the engine inside the cowl to prevent overheating. Also it is preferred to fly without a spinner attached. To prevent the cowl from being damaged, considering the time spent in fabricating it, when your "Skyraider" tends to nose over, install a strong round head screw at the spot where the cowl touches the ground upon nose-over. This scale "Skyraider" is a magnificent sight in the air and a crowd attracter on the ground. May yours be a winner always! ●



Nose on view with cowl removed shows cut-out portions where engine of actual aircraft receives cooling, serves same purpose on this model. Use of muffler is mandatory in Switzerland.



Interior of the AD-6 indicates lots of room for any radio equipment installation. Note that dowels were first used to hold the wing to the fuselage. Plans show a nylon screw and dowel mounting arrangement. 12 channel Kraft here.