PIETENPOL AIR CAMPER

What could be a more natural subject for a first attempt at R/C scale than a vintage Air Camper? Simple in construction with enough detail to challenge the expert. By G. I. Joe, as told to Fred Angel.

NOW dig this scene, Clyde: You arrive at the field (preferably later than the gang), dressed in your knickers, kneesocks and large, floppy scarf. Casually you open the rumble seat of your vintage car. Out pops the little "Air Camper." Forgotten now are the hot multi-ships with their universal look-alike style, gone is the hero worship of Hot Shot Charlie with his 90 mile an hour mortar shell. The air is charged with that magical feeling that true miniature classics always bring.

As the fingers point and the comments start, nonchalantly you light your pipe and graciously permit the boys to carry your field box to the starting line. All the hubbub stops as you start filling the tank through THE TOP OF THE RADIATOR! To be a little sneaky, you have to remove all the labels from the fuel can and neatly letter the can: WATER.

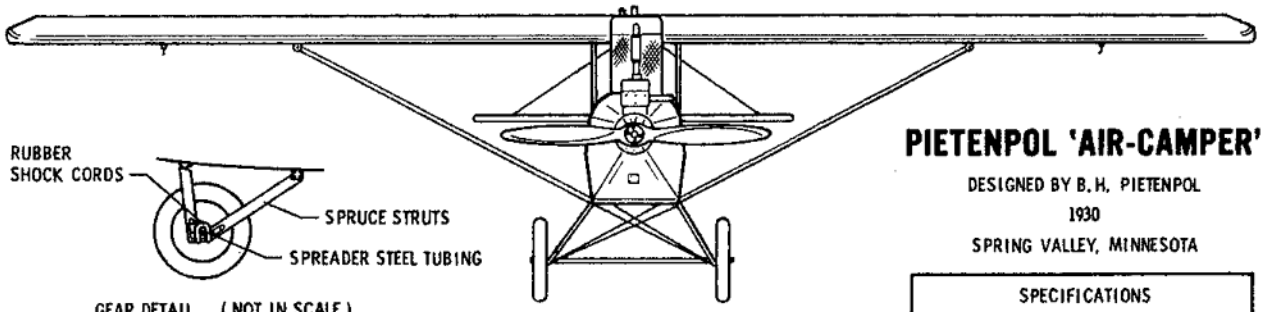
Two flips of the prop, the engine catches and you taxi into position. With a brief wave to the helmeted pilot in the rear cockpit, you gun the throttle and off you go. The tail lifts, the exhaust streams out, and the little ship lazily climbs into the blue. (Now, the next part requires a bit of practice beforehand in front of a mirror.) The trick is to look extremely modest as the applause breaks forth from the crowd.

So much for the dramatics. Let's have a go at it, Clarence.

Early in the 30's, B. H. Pietenpol designed a ship that could be built by anyone. Power for this plane was a standard, inexpensive, slightly modified Model A Ford engine. This two-place homebuilt cruised anywhere from 60 to 70 miles per hour and developed about 40 horse power on the water-cooled Model A. Rate of climb was about 200 to 500 feet per minute. No great performer, but a stable, relaxing aircraft that could take you up and land with forgiving qualities. Factory production stopped in 1939, but Mr. Pietenpol still has plans available for the early Air Camper and is presently modifying and testing an "Improved Air Camper" which features an improved landing gear, steerable tail wheel, brakes, radio, and modern power plants.

There is a certain appeal to a scale model with open cockpits, big old wheels, bulky looking engines and old-fashioned lines. I guess you'd call it irresistible. The model presented here is scaled two inches to the foot. The only deviation from scale is the enlarged stab, hinge lines of the tail surfaces and the small amount of dihedral. It lends itself to a natural scale ship for the beginner and can be successfully flown on single channel. While simple in construction, there is enough detail to challenge the experts. In addition, certain deviations from plans are permissible with home-builts, so if you vary a little bit in scale, who's to say you are wrong? This model is ideal for the light-weight three channel systems such as "Digitrio" or "Spar-Trio." We outfitted the original with "Spar-Trio" and had room to spare. The big wing could have lifted even more.

A quick look at the plans will tell you at what stage you can ignore the text and start building. I think all of us do this with plans, but since I started out to present a beginner's ship, I'll run through the highlights of the building sequence. While building, I think every modeler should be able to discuss projects with a buddy. I was fortunate to have G. I. Joe home on leave and as the photos show, Joe proved to be one of the best A & E mechanics I have ever seen. Joe was all over the model . . . he even gave

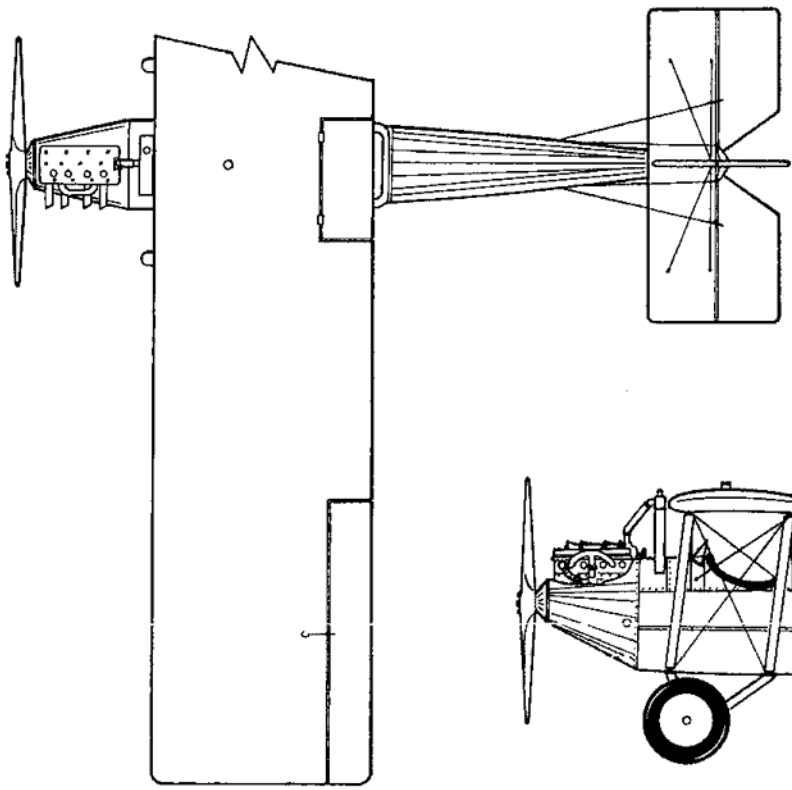


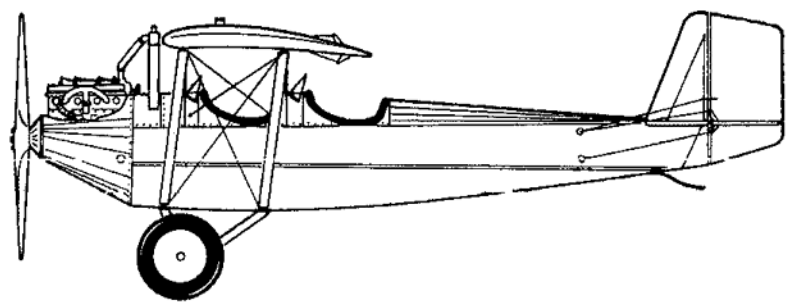
GEAR DETAIL (NOT IN SCALE)

PIETENPOL 'AIR-CAMPER'

DESIGNED BY B. H. PIETENPOL
1930
SPRING VALLEY, MINNESOTA

SPECIFICATIONS	
WING SPAN	28'-2" - 29'-0"
WING CHORD	5'-0"
LENGTH OVERALL	17'-8"
HEIGHT OVERALL	6'-6"
TREAD	53"
WHEELS	26 x 4
PROPELLER	6'-4"
WEIGHT EMPTY	610 LBS.
POWER	FORD A
GAS CAPACITY	10 GAL.
PERFORMANCE	
CLIMB LIGHT LOAD	500 FT. PER MIN.
CLIMB FULL LOAD	200 FT. PER MIN.
CRUISING	60 - 75 M. P. H.
STALLING	40 M. P. H.





the test pilot a couple of last minute pointers on the test flight. Wherever possible I'll try to pass on his building tips. For example:

JOE'S BUILDING TIP #1: Forget that jazz about using ¾" plywood or a hollow-core door for a building board. Haven't seen a straight one yet. Pick up a piece of sawdust board known in the building trade as Flakeboard or Timblend and used extensively for underlayment for Formica counter tops. Bond a piece of building board such as Homasote or Celotex Ceiling Tile to this with contact cement and your building board troubles are over. O.K., let's build the wing first.

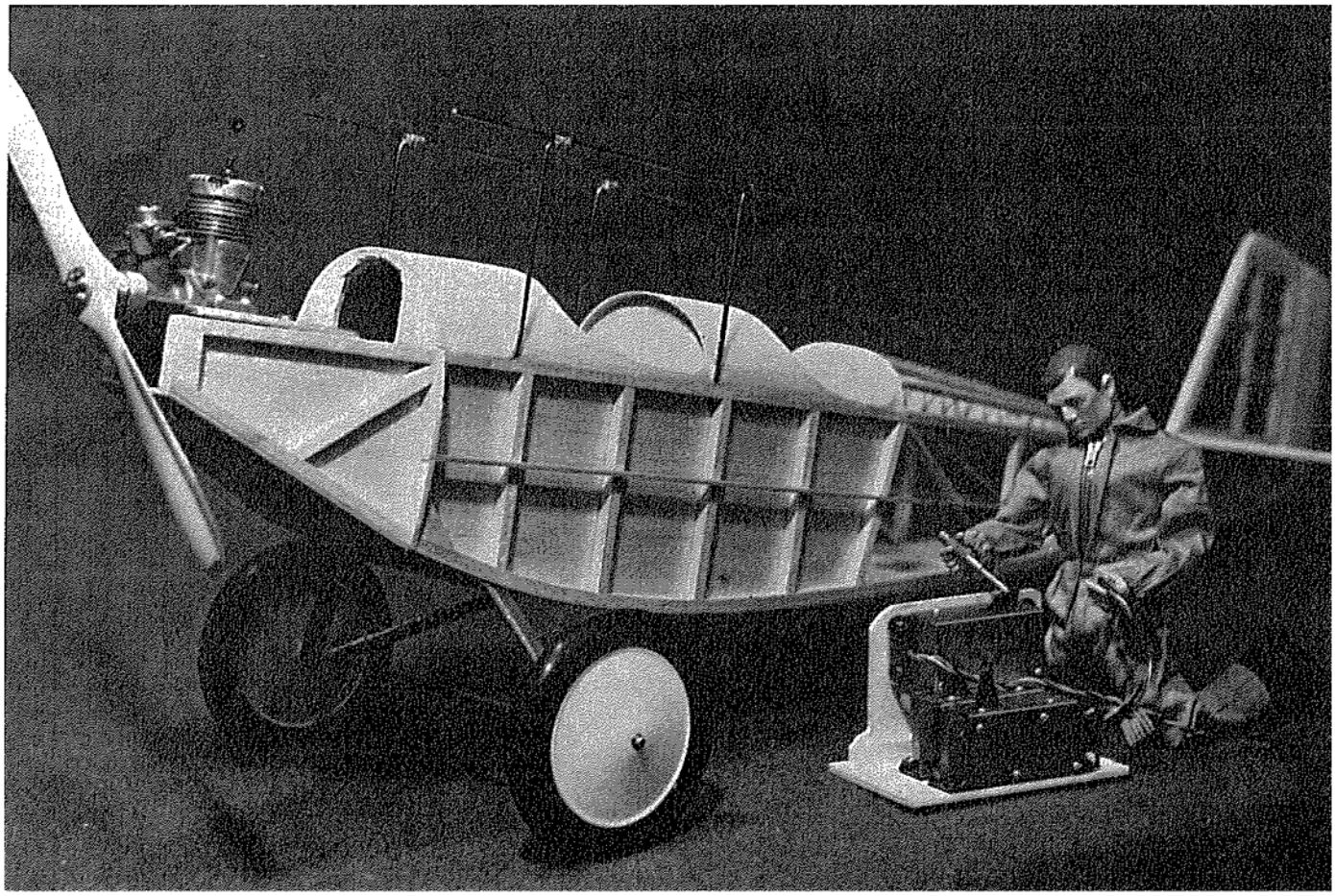
THE WING. Cut out all ribs. They are the exact number and spaced the same as on the real ship. Note that the center ribs have been trimmed to receive the sheet planking. Start by pinning down the leading edge bottom sheet to which you glue the ¼" square spar. Also pin down the rear spar. Now glue the ribs to this. We used white glue for this.

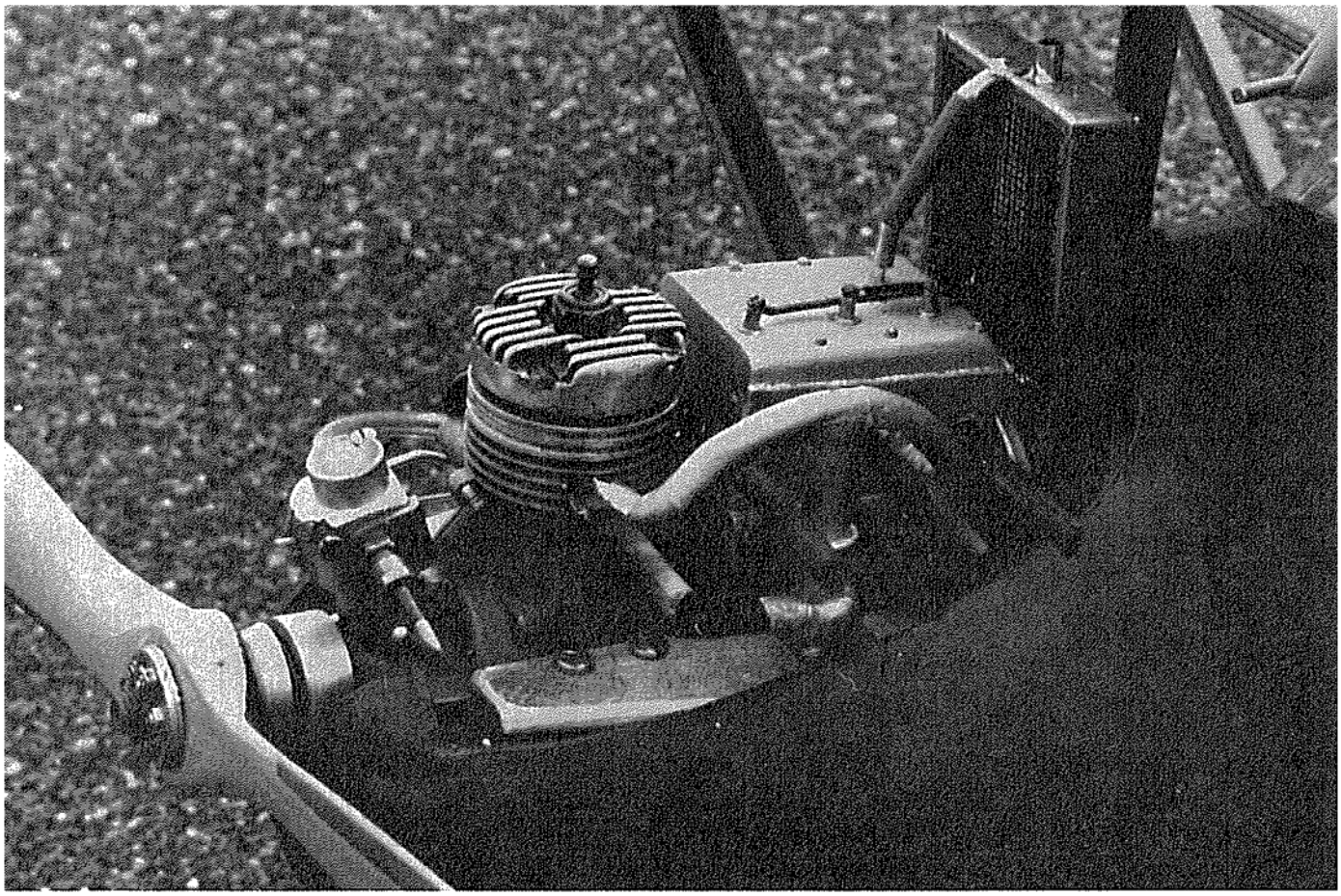
JOE'S BUILDING TIP #2: Use white glue everywhere except where sanding to contour is required. Most white glues dry harder than the material glued and leave ridges when sanded. For example, white glue to attach sheeting to ribs, but where the sheeting joins the leading edge, use standard model cement.

Now for the leading and trailing edge, use JOE'S BUILDING TIP #3: To notch leading and trailing edges, clamp three hack-saw blades together front and back and saw the notches on the edges. Limit the depth by a piece of masking tape. Glue these edges to the ribs. Remember not to cover the top with sheeting until both wing halves are joined and reinforced with the dihedral braces. The tips are solid balsa. Make sure you put in the trailing edge diagonal bracing. You'll be surprised at the fine job they do in stiffening the trailing edge and preventing warps. After the framework is top-sheeted, center sheeted and dried thoroughly (and, oh yes, don't forget the plywood strut-holders), you can sand. I'm one of those nuts who, while despising the job of sanding, can't wait to see the finished form. So, if you feel the same way, go ahead and sand and set aside for final covering.

JOE'S BUILDING TIP #4: To avoid the mess involved with sanding dust, attach a large funnel or box to the nozzel of your vacuum cleaner, clamp to your work bench and sand over it. Balsa dust will wisk into the opening rather than up your nose, all over the floor and into that precious receiver.

TAIL SURFACES: We used open framework on the fin and stab to conform to scale appearance and to keep the tail light. Select straight, medium stock for this. Use white glue and wipe off any excess globs. Sand to shape after dry and join fin and stab together. Use a 90-degree drafting triangle for alignment and check periodically while drying to make sure everything is true. The movable surfaces are made of medium balsa. Do not attach until all the painting has been completed. More on this later.





FUSELAGE: Like the real ship, the body is made up of square longerons, reinforced with sheet stock up forward. Apply this sheet to the inside of each body frame. We found it easier to build the nose section as an integral part and then to cut at former A after the frame has dried. Cut all bulkheads to shape and cut out for the tank and the battery pack. A four-ounce deBolt clank tank is just right for size, fuel consumption, and permits soldering of the radiator to it. Attach wire cabane struts to bulkheads B and C before gluing to the sides. JOE'S BUILDING TIP #5: Attach wire to bulkhead by lacing with thread or fine wire and putting a dob of Epoxybond Putty at each point. This putty has the consistency of modeling clay and sticks everything to everything. It should be available at your hobby shop. If not, drop me a line. Note that the body has the same width from bulkhead A-1 to C. This makes for easy alignment and a square structure. After the tail is drawn together and glued you may add the rear cross pieces top and bottom, curved turtle deck formers, and the top and side stringers. Make sure to fill in between the aft formers with chunks of scrap balsa to prevent stringer-sag when the covering is applied. Sheet the bottom with cross-grain 1/16. The forward section is sheeted with plywood to support the landing gear. Install the maple engine bearers, bulkhead A, and the sub-floor to prevent fuel leaking down into the battery compartment.

JOE'S BUILDING TIP #6: Pack the nose with styrofoam so that your batteries fit snugly. An ideal source for sheet styrofoam is your local lumber dealer. Ask for the material used in suspended ceiling. They usually come in panels 2 foot by 4 foot. Now you can mount the nose piece, turtle deck and the 1/8 plywood pieces for the landing gear.

One thing about this model, you don't have to worry about radio installation since everything is accessible from the two big roomy cockpits. We built an "L"-shaped servo tray, placing the motor control servo above the other two brought it in line with the engine linkage. Speaking of engines, a .23 is ideal for Class II operation, while a .19 would be just right for single channel. JOE'S BUILDING TIP #7: Mount the engine on 1/8" aluminum and then screw this plate to the hardwood bearers using sheet metal screws. This permits a fast, safe way of adjusting thrust and makes engine removal a snap.

Well, now, you are all set to cover. We mounted the tail surfaces permanently to the body to avoid the bulky look of rubber bands and dowels on the tail. Everyone has his own pet covering technique. We happen to like "Silron" for a fabric and we find that four coats of clear butyrate fills all the pores to permit spraying two additional coats followed by color. If you are all covered, you're ready for the fun of scale detail.

JOE'S SCALE DETAILS:

1. **Prop.** Made from an 11" — 4 wood prop, trimmed and sanded to shape. Face plate was a round plastic disk with sub-miniature nuts mounted directly through into the wood with small brass nails.
2. **Cowl.** Use heavy bond paper, cut to shape and coat the inside with Epoxy glue or Fiberglass resin then immediately affix to the nose and hold in place with rubber bands until dry. Overlap both edges and when dry, cut for the engine compartment.
3. **Model A Engine.** Make from balsa blocks. Lugs were slices of solder pinned to the blocks. Spark plugs were eyelets held in place with small screws with the ignition wire soldered to the top. Exhaust stacks are wooden dowels burned to a scale appearance with a match. The manifold and carburetor were made from Epoxybond Putty. Attach the dummy engine to the aluminum plate using "wings" glued to the bottom. Paint the crankcase grey and the head silver to match the color of the glow engine.
4. **Radiator.** Use thin brass sheet bent to form a channel. Solder copper insect wire inside to simulate the grill. Solder an extension tube to your tank and solder the radiator to

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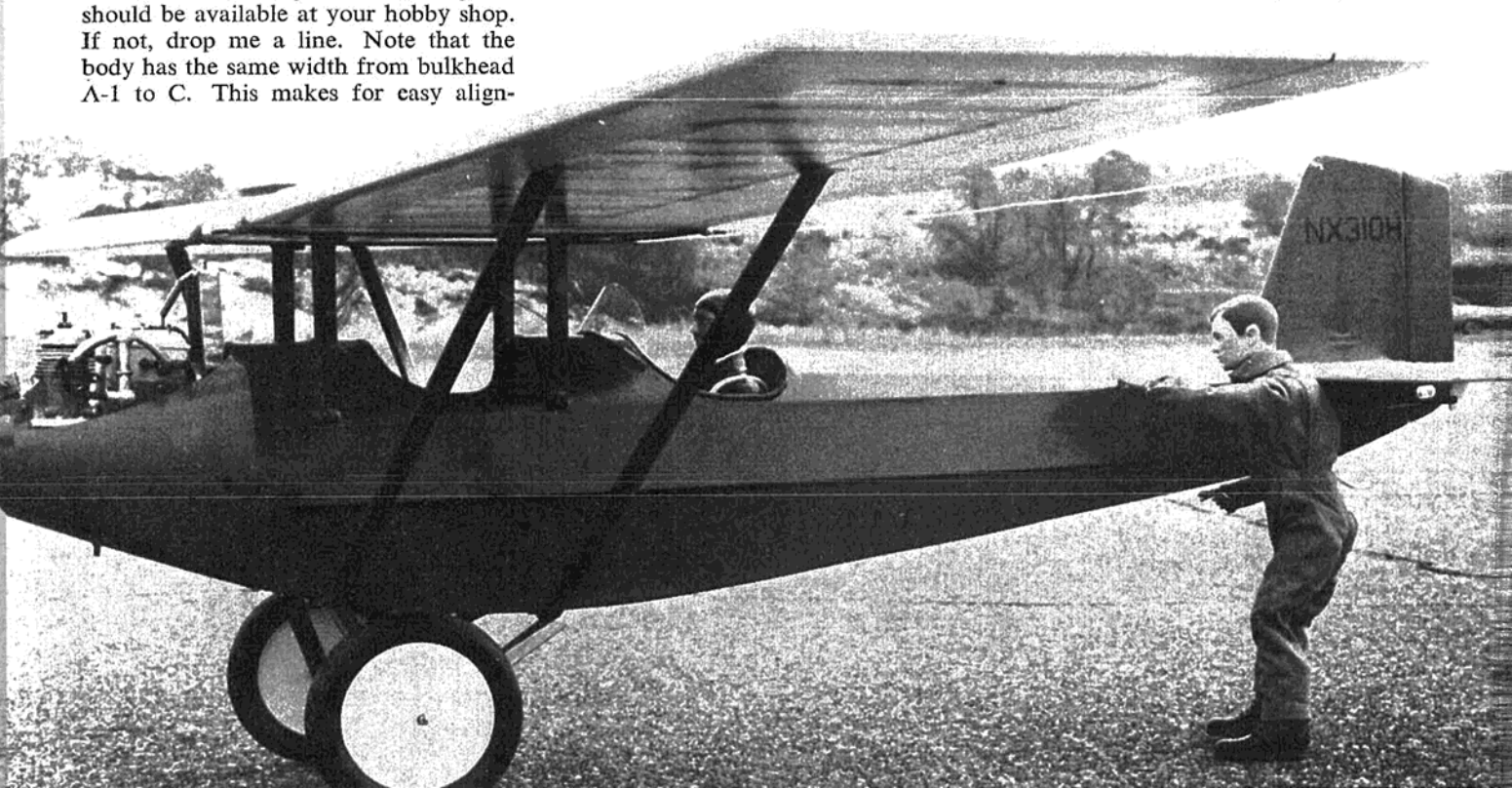

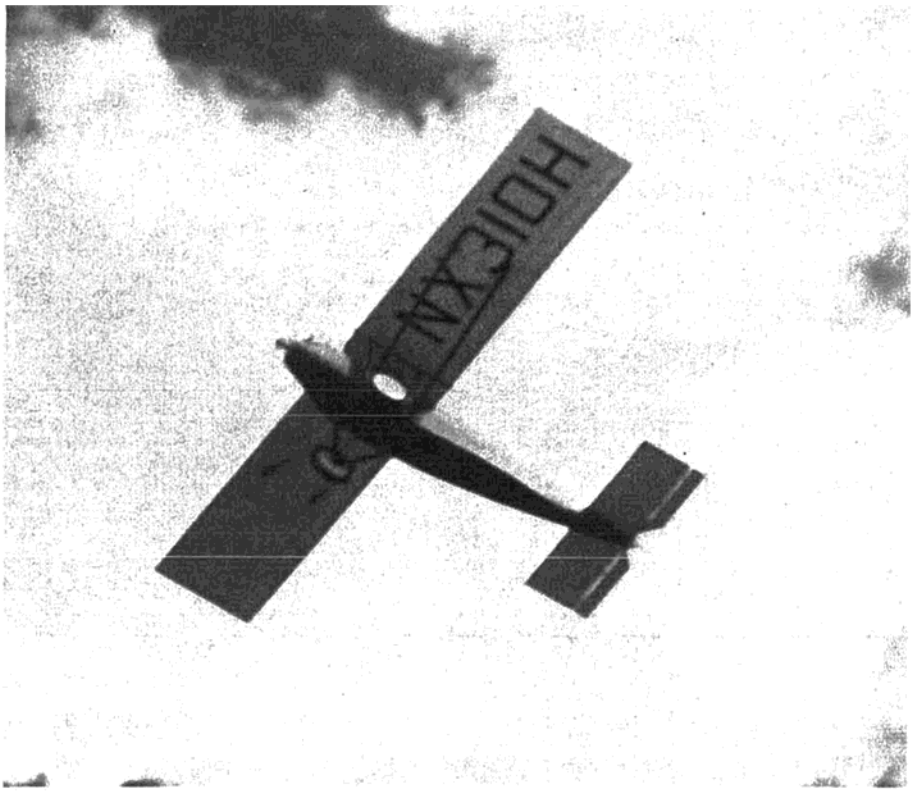

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the tank. Seal all around the tank with Epoxy Putty where it fits into the forward bulkhead.

5. **Struts**: Wing struts are fashioned from soft pine. Slit one end and pin a strip of nylon hinge material — this end will screw onto the wing plywood gussets. Attach a small safety pin on to the butt end. This makes for a simple, sure method of locking to the gear. The cabane and landing gear music wire struts were faired with Epoxy Putty and wrapped with bond paper. What an easy way to build them!

6. **Cockpit Tubing:** Small neoprene tubing dipped in contact cement and applied to the edges which were given a coat of contact also. You can dope directly over the contact cement skin nicely. How about them apples, Hiram!

7. **Instrument Panel:** Make from a sandwich of celluloid, paper and wood tape which is a thin veneer used for furniture or plywood edging and is available at hardware stores or lumber yards.

8. **Hinging:** We used thin nylon sheet hinges. Cut pins to length and put a dob of white glue on them before pushing in place. You'd be surprised how white glue sticks to them.

9. **Painting and Trim Color:** To match the cream color used on the hubs of Williams Bros. scale wheels mix two tablespoons of Aerogloss Taylorcraft Cream to one quart of Aerogloss Swift White. Spray on all color. The cream wings and tail will require a coat of clear to bring out the gloss. The body was painted with Aerogloss Stearman Red and all trim is Jet Black. Use cellophane tape to trim rather than masking tape — no bleeding or ridges. We used the experimental designation, "NX" for the license numbers. Remember, top right, bottom left, and on both sides of the tail.

We've hit the highlights of the scale features. Workmanship counts just as much as the material used. Spend time with details, this is where the scale points build up. Now, Bruce, LET'S GO FLY!

FLYING: Balance the model as shown. Chances are, because of the short nose moment you'll have to add weight to the nose. Do it right under the glow engine and lock in place . . . yep, you guessed it . . . with Epoxy Putty. Don't bother with a test glide. I'm a firm believer in the theory that more models meet their doom, especially scale, because of a faulty test glide. Give it power, note any out of trim conditions and correct immediately. No, my "Air Camper" didn't fly right off the old drawing board — but it did from the old blacktop down at the airport! It is slow and graceful and for Joe's sake treat her gently.

Just remember your knickers, scarf and pipe!