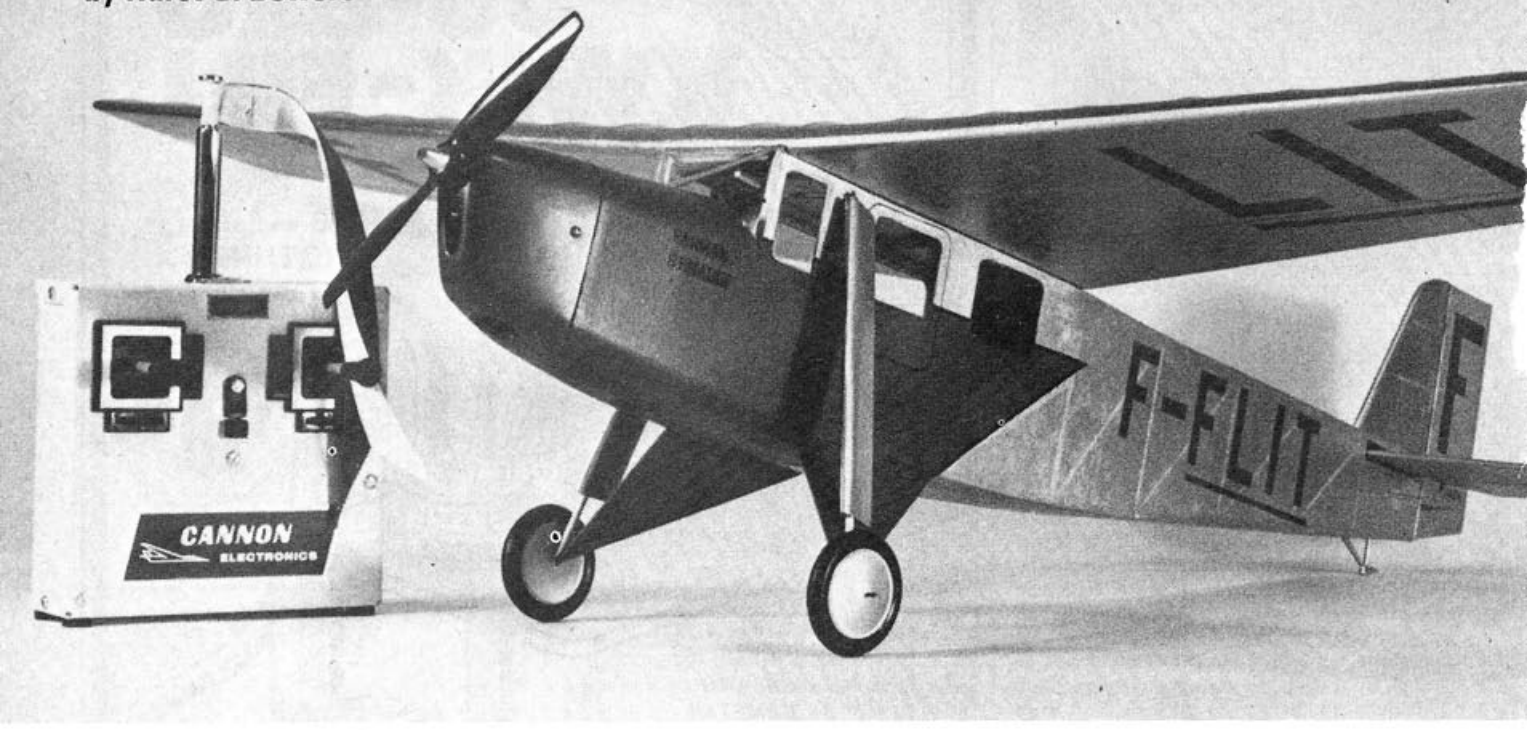
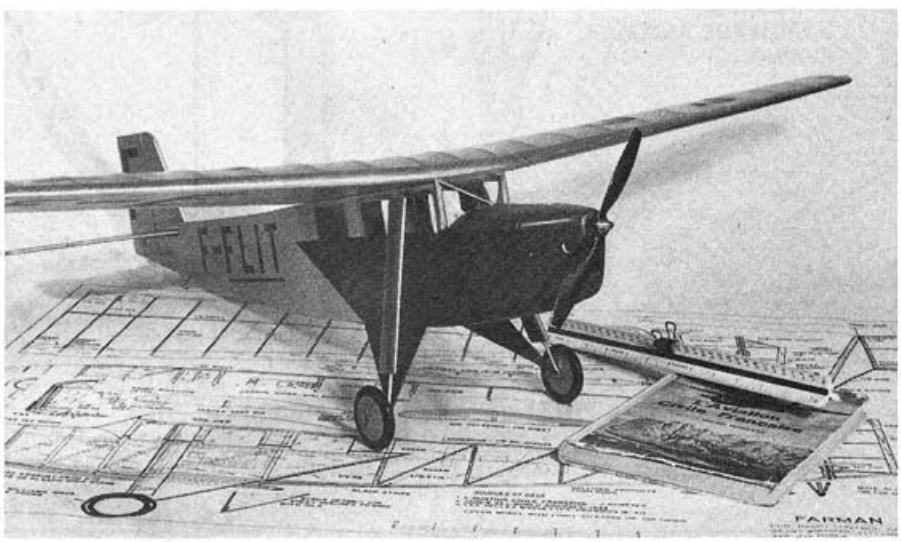
THE FARMAN 400 MONOPLANE

by Hurst G. Bowers



During the years between World Wars I and II the French aviation industry was highly active in the area of light, private aircraft (aviation de tourisme). Just as the names of Beech, Cessna, and Stinson became bywords in this country, Farman, Potez, and Caudron became equally well known throughout the rest of the world. The 1930's were particularly fascinating in France in that development costs were relatively low and competition was keen, thus there was a proliferation of aircraft in this category. Airplanes of every known configuration and type were commonly seen at such delightful little flying fields as St. Cyr and Chartres, which lie in the beautiful, gently rolling country surrounding Paris. As I recall, these were sod fields which were impeccably maintained, and were reached by a pleasant drive along roads lined on both sides with tall windbreak poplars. The flight line and hangers were open to visitors and the pilots and airport personnel were most hospitable. Many pleasant and informative hours were spent in these surroundings which helped to kindle my enthusiasm and admiration for French airplanes (as well as most other things French).

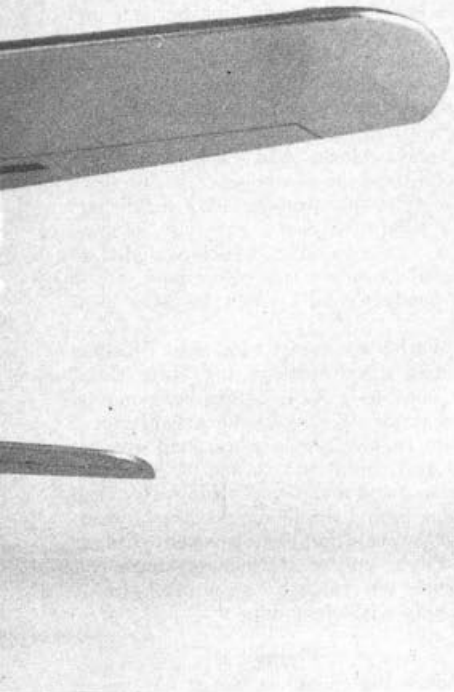
I suppose that Farman designs have proven most interesting to me because of the many and varied types of craft this firm produced. All, even including the old Goliath, were clean and functional, yet achieved the desired compromise with simplicity so essential to modeling. I have built the Moustique and the 400; both with considerable success, and I currently have two other Farman designs "on the boards" for later projects. They are the little Sport biplane, and the Goliath.

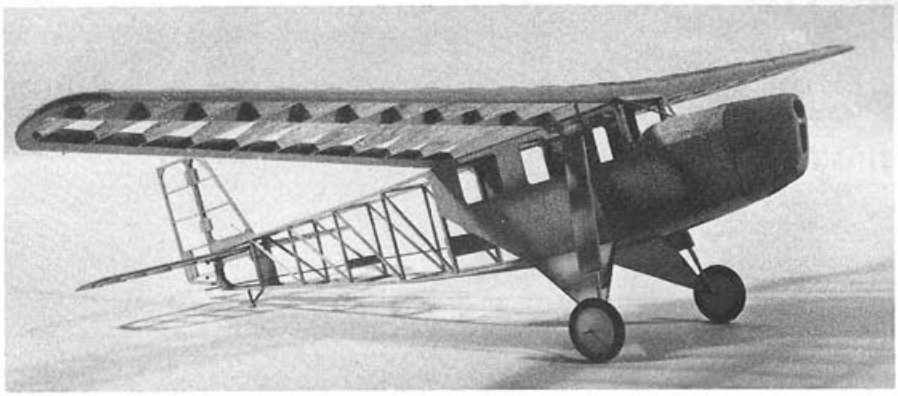


The subject of this article, the 400, is a very clean and functional three place cabin monoplane powered with a 120 horsepower Renault engine. The tapered cantilever wing is of all wood construction, as is the fuselage, which is rectangular with plywood covering. A most interesting feature is that the large struts housing the landing gear shock absorbers can be rotated to serve as a drag brake. The dimensions were as follows: wingspan 11.7 meters, length 8.2 meters, height 2.7 meters, and wing area 21.5 square meters. The performance was a maximum speed of 195 kilometers per hour, cruising at 170 "clicks," for a range of 800 kilometers. The basic color of the 400 was silver, with green, blue, or red trim (nose and cabin section), and registration letters. A black stripe about 4 inches wide separated the colors on the fuselage. Details were in the usual black, silver, and brass.

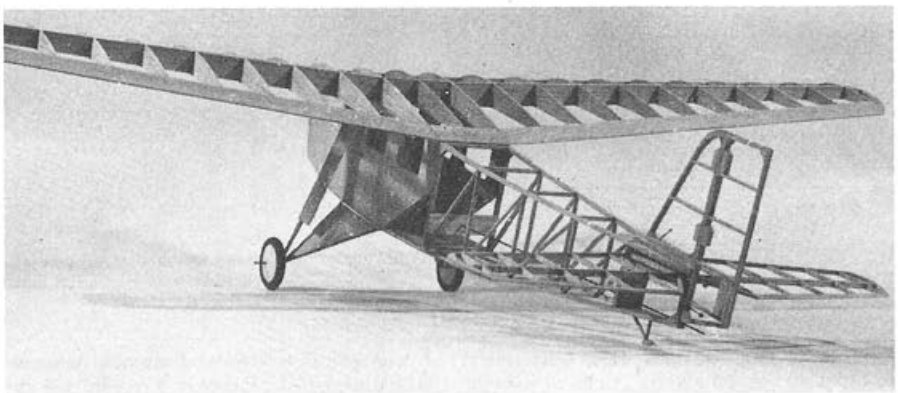
Compare this drawing to many of the old time Free-Flight models such as the Miss America and the Flea, by Scientific. You will find the moments and areas very similar. Is there any reason why this model shouldn't be the best flyer of the season? For either .020 versions (Ace pulse or Cannon two channel super-mini R/C) the weight will run about 10+ ounces. For the Free-Flight version it should be around 7 ounces. The model should also make an excellent jumbo Rubber Scale subject with

This French classic of the '30s packs an .020 and Cannon Tiny Mite or Ace Pulse R/C.

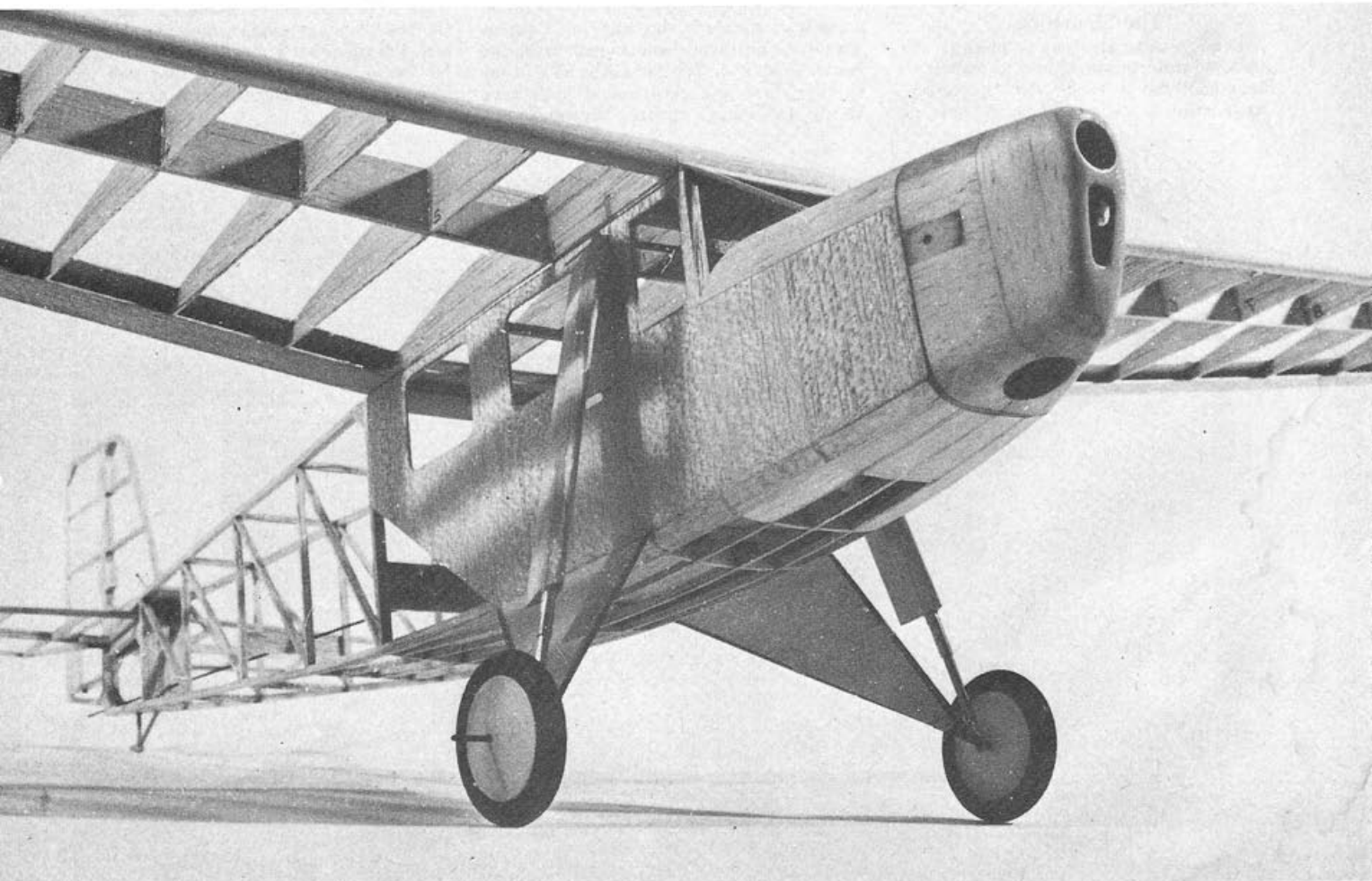


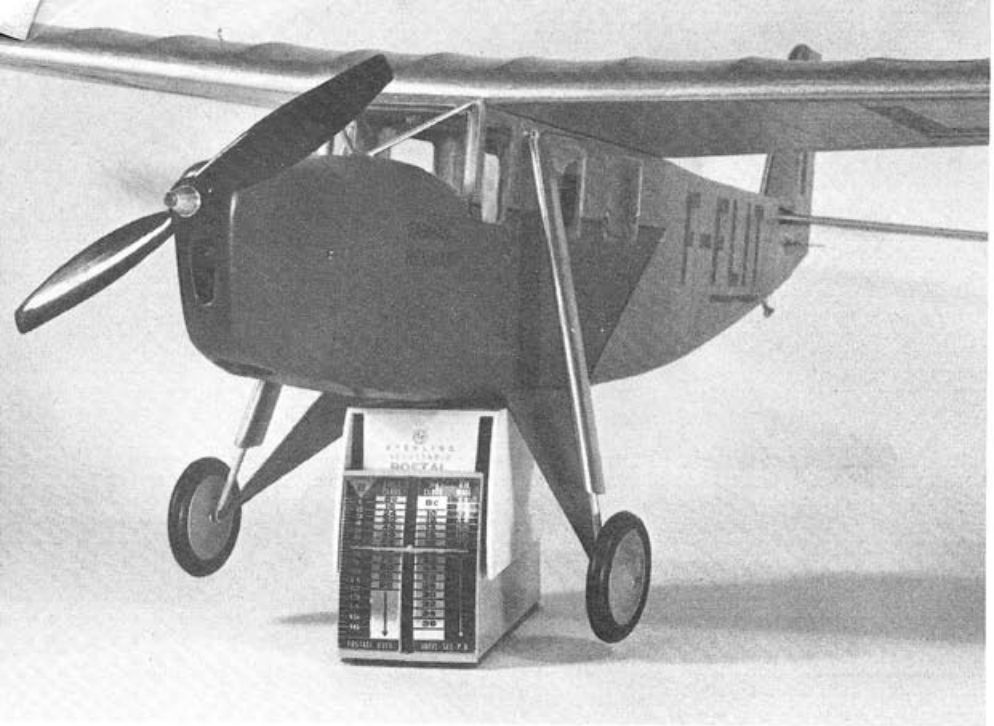


The old ships are not so bad. Compared to the swept-wing streamlined planform of the modern jets, the vintage birds are easier to build and offer better flight performance. Needs a smaller field.



PHOTOGRAPHY: HURST G. BOWERS





With radio, 10.2 ounces. Cannon's new system opens up whole new vistas for .020 sized aircraft. **Beneath:** Rattles around within the 2" wide radio compartment. The structure is easy to keep light.

very slight modifications. It is quite easy to build and there are no tricks or special talents required. Just follow the plans and you should have no trouble or problems at all.

The Structure

I do not plan to give you a "paint by the numbers" description of how to construct this model for it really isn't necessary. Construction is entirely conventional, but I will point out several unique features which may be of interest. First let me say that I used ⅛" square spruce, as shown on the plans, for fuselage longerons, and all glue joints were of Hot Stuff. I had not heard about the recommendation against using it on spruce at the time, but I experienced no problems whatsoever with the joints. I use it or Zap for about 95% of my building now and recommend both very highly for balsa, spruce, plywood, etc.

Another area which I want to call your attention to is the wing retainer at the lower leading edge of the center-section. It is constructed of ply and balsa, and has proven to be quick and easy to build. It provides a positive, accurate fix and allows the wing to shear the 4-40 nylon bolt to the rear in event of a crash. Just be sure and get a snug and clean mate between the retainer key on the wing and the slot on the top of the fuselage just aft the windshield.

Another hint which may prove helpful is in finishing the cowl. After building it with balsa blocks and cutting out the mounting and access holes, try Sig resin as filler and fuel proofer, both inside and out. I used two coats, carefully sanding each to a smooth finish, which provided an excellent base for the color dope. It's a good product, and I won't be without it again.

I covered my model with light Silkspan and used three coats of Sig "Lite Coat" clear dope as a base before spraying on two coats of silver, and the green trim. I cut the registration letters from contact paper and used it as a stencil for spraying. It is cheap and much easier and faster than masking tape. I would suggest that Jap tissue (if you can find any) be used to cover Free-Flight and/or Rubber versions. Cut the trim, letters, etc., from black tissue and apply with clear dope.

Flying

Balance the model at about 30% mean aerodynamic chord and trim in the conventional manner before flying, insuring that all surfaces are accurately aligned and warp free. This model should fly "right off the board" in any mode which you may select. I'm sure that you will find it a natural for "schoolyard scale," and that you will have as much pleasure from it as we have with ours.