

Building all-aluminum RC planes

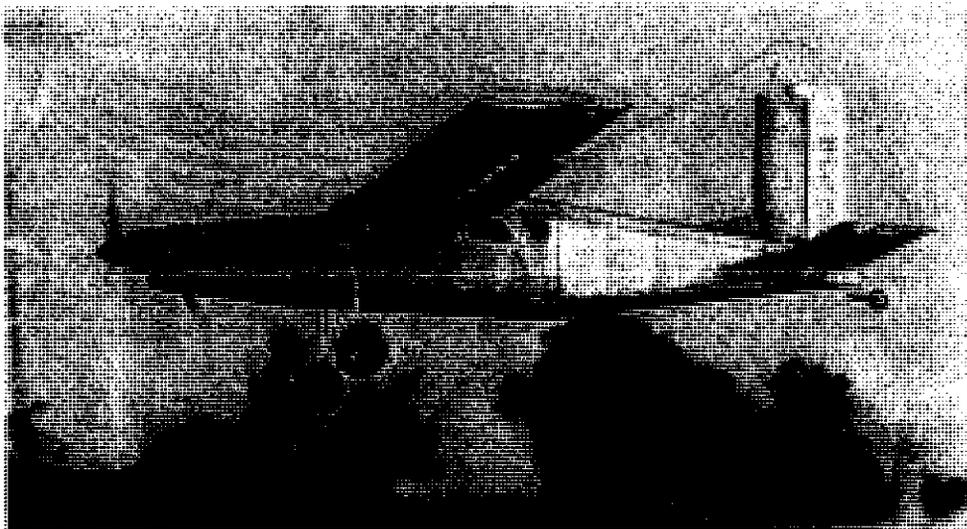
Many full-size aircraft—P-51 Mustangs, Cessna 180s and Douglas DC-3s, to name a few—are completely constructed of aluminum and steel. Why not build RC models that are totally true to their full-scale subjects?

You might think that an all-metal RC model would be too heavy, would be difficult to build and would invite radio interference, but I have had great success in building and flying many all-metal RC airplanes. An all-aluminum scale model certainly draws a lot of attention at the flying field!

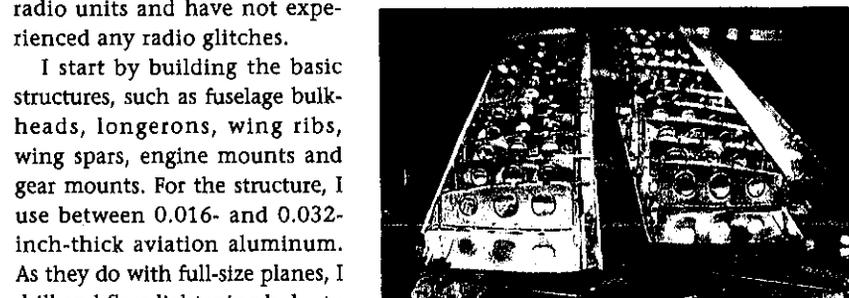
Metal models are not heavier than your average fiberglass or wood ones; in fact, when properly designed and built, they can be even lighter. To build a metal model, you use full-size airplane construction techniques, materials and tooling. Building all-metal scale airplanes is odorless, environmentally clean and fun! I usually obtain the full-size aircraft structural manuals and, in some cases, the blueprints, so I can produce my own plans and select the proper materials. I use the highly reliable PCM

I start by building the basic structures, such as fuselage bulkheads, longerons, wing ribs, wing spars, engine mounts and gear mounts. For the structure, I use between 0.016- and 0.032-inch-thick aviation aluminum. As they do with full-size planes, I drill and flare lightening holes to keep the weight down. As the basic aircraft structure is completed and carefully rigged, skin panels are riveted into place according to their full-size counterparts. It is important that the radio-gear installation, landing-gear attachments and wing joints are finished before you rivet the skins onto the structure.

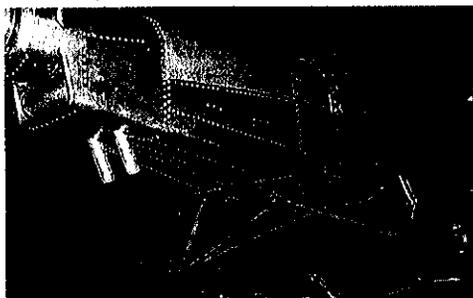
You will need tools such as tin snippers, assorted drills, files, hole-cutters and rulers. Access to a sheet-metal shop is very helpful; I use the shop at the local hangar. Your model can be as complex or as simple as you want it to be, but it is important to understand basic



The Pilatus Porter makes its first flight in Carlos Rangel's homeland of Colombia, South America.

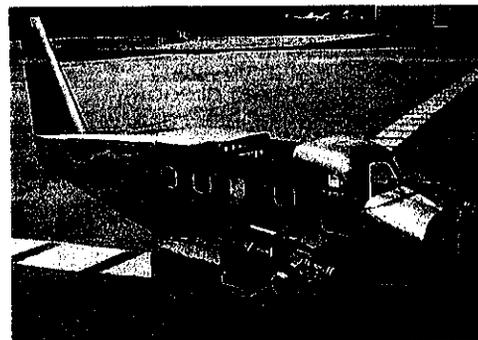
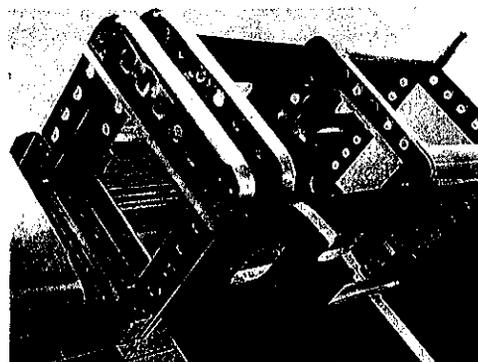


The basic wing structure. Note the flared lightening holes in the ribs and spars.



Real riveting job on Pilatus Porter. Notice the aluminum internal structure—light and strong!

The fuselage structure for a Dornier Do 28 Skyservant twin.



The Dornier Do 28 nears completion. The model was riveted together just like the full-size plane.

sheet-metal-working skills. At first, you might find that working with metal is difficult or frustrating but, as with anything else, good advice and practice will enable you to do it.

If you're looking for a "different" scale project, I hope you'll consider building a true-to-scale, all-aluminum RC airplane. I guarantee it will be a fun and challenging experience. †