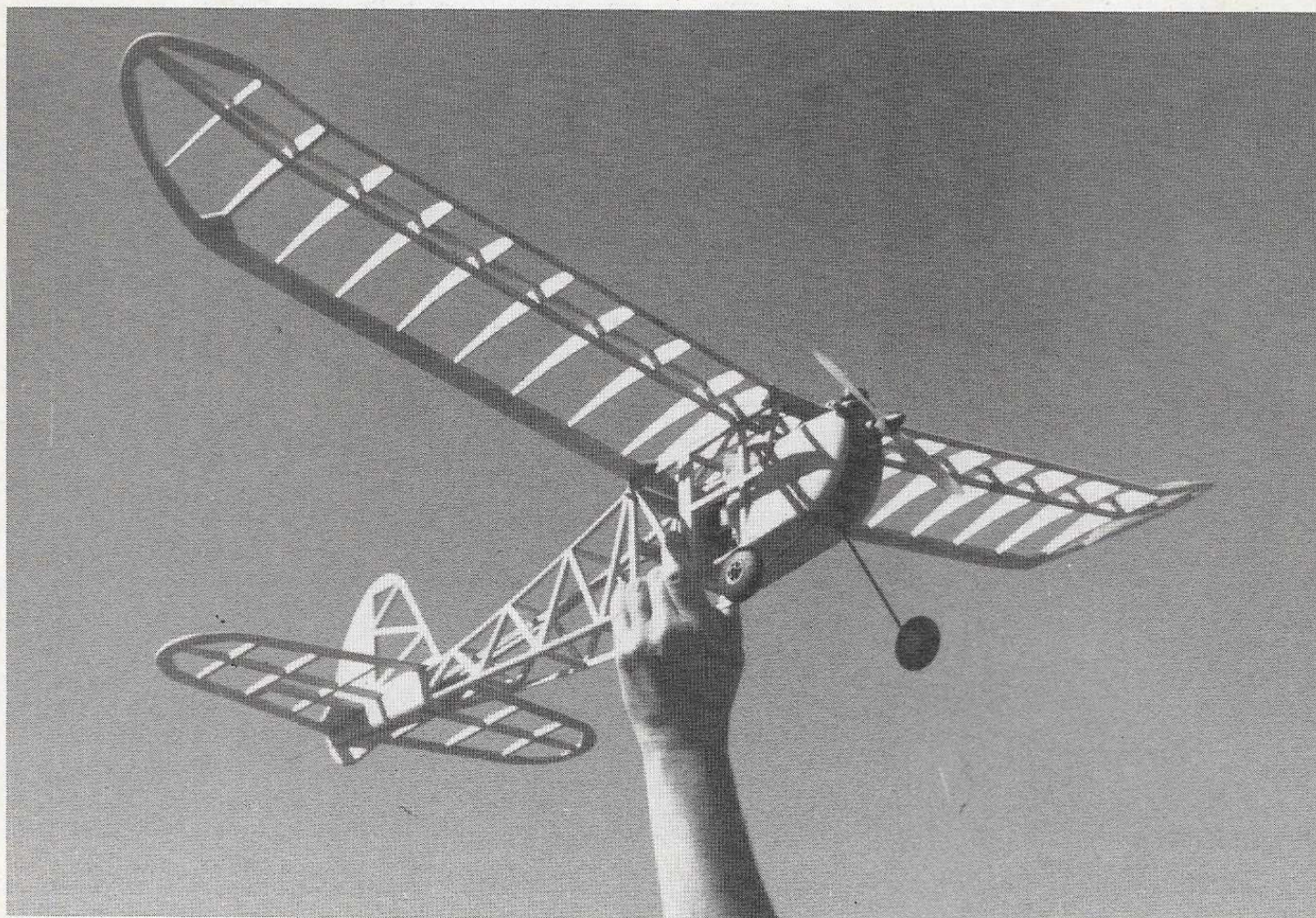




PHOTOGRAPHY: DR. D.B. MATHEWS

Billed as a fun way to get acquainted with the Nostalgia event, the *Crusader 42* offers the modeler a fairly easy to build a plane that's also rugged.

a nostalgia F/F: **Crusader 42**

By Dr. D.B. Mathews

Equally at home in freeflight or with R/C assist is this post war cabin design.

Old timer models have become one of the hottest growing facets of modeling on a world wide basis. The designs I speak of include models before Dec. 31, 1942, leaving many other very appealing models out of all the fun generated in this category.

Numerous charmers of the WW II and post-war eras are not eligible for competition under Society of Antique Modelers rules. In an effort to promote and encourage modelers toward the designs of the 1943 through 1956 span, the Central Indiana Aeromodelers (C.I.A.) and other groups have introduced "Nostalgia".

Although as presently conceived, the American Nostalgia event is strictly free flight, though it surely will only be a matter

of time before R/C assist is added. The original thrust with the S.A.M. movement was similar in that it remained a free flight only event for several years. As more and more modelers discovered the advantages of utilizing R/C to return the thermalling models, R/C assist grew to its present position of popularity. I predict the same will transpire in the Nostalgia events.

While any number of eligible designs could have been chosen for a study of the potentials of R/C assist Nostalgia, I elected to settle on a smallish, simple-to-build, and rugged design, hence the subject of this construction article.

While certainly lacking the thermalling potential of a *Hogan* or *Civy Boy*, the *Crusader 42* is none the less possessed of a certain

charm. Construction could hardly be less complex or more rugged yet the model is a surprising performer. For those looking for a free flight design, the *Crusader 42* as presented here, can easily be flown without its radio gear. In either form, the model represents an out of the rut choice for those wishing to try the Nostalgia concept.

Introduced in 1946 to match the brand new Arden .099 power plant, the *Crusader 42* was designed by Al Ruben and kitted by Coast Models of Atlantic City. The kitting venture was apparently rather short lived as advertisements disappeared within a year or so. An all too frequent happening with the myriad of kit ventures born of the returning G.I.'s of that era.

Construction

Since this model is not really well suited to the absolute beginner and has a very straight forward structure I won't bore the reader with a highly detailed sequence of construction.

Obviously, the fuselage is a simple, one-side-built-over-the-other affair. I prefer using small sections of masking tape rather than wax paper to prevent the second side from sticking to the first. The two sides are then popped apart with a table knife and assembled with the right side flat on the building board.

The firewall and jig former A are then used to develop a square box form. One then need only jack up the tail post to half the fuselage width and add the cross members. Only with a concentrated effort can an out-of-line fuse-

lage be constructed when using this technique.

The landing gear unit and motor should have been trial fitted *before* the above step. Some balsa will likely have to be trimmed from the faces of the cheek blocks to clear the nylon gear brackets.

The empennage is built over the plans and then block sanded to contour. The one side only elevator works perfectly well and certainly simplifies things in building.

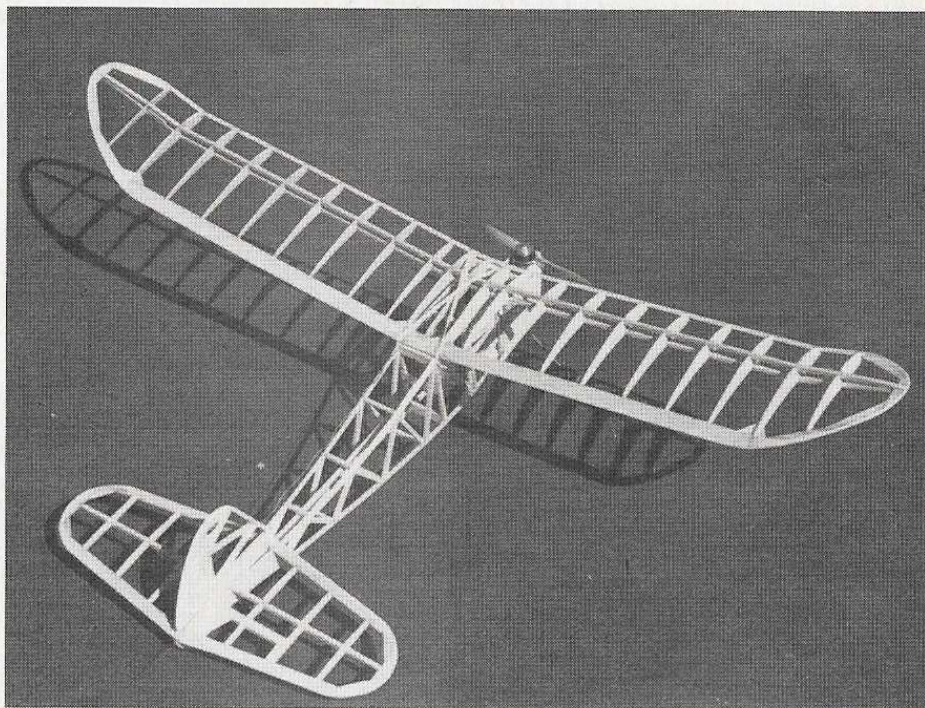
Wing construction uses shims under the trailing edge, and spars to hold everything flat. The leading edge and tips are added last. The bottom spar and tip meet flat on the board while the top spar is tapered on the inside and pulled down onto the tip; this may require some notching to avoid breakage.

No dihedral braces are shown since I much prefer to add dihedral to the sections by sanding the bevel into a blocked up panel and joining the double ribs with five minute epoxy with the unit blocked up. Then I merely run a coping saw blade along the spar and through the double ribs and slip a section of ply into the resulting slot. The ply is marked top and bottom and custom cut to fit the joint. Neat, simple, and very accurate braces result.

My model used a pair of World Engines S-22 micro servos mounted to the fuselage sides with servo tape (soak the wood with CA to get a better stick). Pushrods were fabricated of $\frac{3}{16}$ inch square balsa (on this model, what else?) with .045 wire "Z" bends on the servo end and sections of 2-56 bolt soldered onto the wire at the horn end. Du Bro $\frac{1}{2}$ A clevises were then screwed into the bolts.

A 225 mAh Ace pack was foam wrapped and wedged against the firewall, the Royal Vanguard receiver was placed between the pack, and servos using scraps of balsa to secure its foam wrap. Other than a switch mounted through the fuselage side, nothing else is needed.

My model was covered in red transparent



If R/C assist comes to Nostalgia (it's a strictly free flight affair), the *Crusader 42* can easily adapt to any of the miniature equipment on the market. Free flight, though, is the plane's forte and with a Golden Bee, it will thermal pretty high on a short motor run. For just plain old fun flying, it's a gem.

Monokote, but for absolute light weight, particularly in the free flight version, Jap tissue and clear dope can save an ounce or two. Under current C.I.A. free flight rules, $\frac{1}{2}$ A models have no weight restrictions so the lighter the better. If and when some R/C Nostalgia rules emerge, it is likely the 8 ounce per square foot concept now used for $\frac{1}{2}$ A Texaco will be adopted.

I would suggest the *Crusader 42* not be powered with a Black Widow engine, as its rate of climb with a QZ is pretty brisk! More

likely a Golden Bee would be ideal for general sport flying. And, sport flying is the models forte. It certainly is capable of thermalling and can get very high on a short motor run, but for just plain old fun flying around it is a gem.

While this is not the ultimate in what Nostalgia R/C can be, it is a fun way to introduce oneself to what may just turn out to be another very popular R/C assist event. Build one and see if you don't agree Nostalgia is something to enjoy.

