

• This WWI Royal Flying Corps recon ship is simple, yet distinctive—obscure, but not unknown. Best of all, it has a great nickname: “Big Ack.”

The design featured in this article qualifies to fly in the Flying Aces Club WWI Peanut Mass Launch event. Built light and true, this ship will give those SE-5s and D-7s a run for their money. If you haven't yet experienced the thrill of flying shoulder-to-shoulder in open combat, grab your helmet and goggles and head for the flight line. But first . . . to the building board. You've got to build your own mount for this aerial joust.

Here are some hints to help you pull it all together before the next dawn patrol.
WINGS

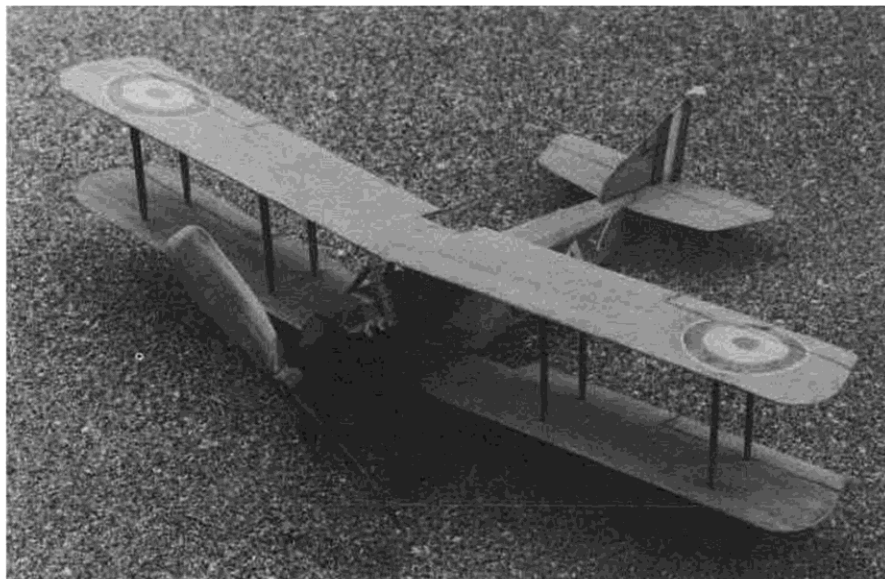
Make a rib template and cut out all ribs from medium 1/32 sheet balsa. Select straight and stiff lengths of 1/16 square balsa for the leading and trailing edges and the spars. Cut out four wing tips from medium 1/32 sheet and begin assembly.

Anyone who has ever built a free flight biplane knows that strut attachments are a key design element. A good approach on small models such as this is to fabricate a “pocket” in the wing rib at each strut-to-wing attachment point. This is done by notching the top or bottom of the appropriate wing ribs before assembly and cementing short lengths of 1/32 square balsa alongside each notch. During final assembly, the strut ends are inserted into these pockets and cemented, thus creating a rigid structure.

After the wings have been assembled flat on the building board, cut the dihedral breaks in the leading and trailing edges and block up each wing tip 1/2 inch. Cement the dihedral breaks, add gussets and lay in the spars, beveling the ends to ensure a good fit. After the cement has hardened, lift the wings off of the board, shape the leading and trailing edges and fine sand the entire structure.

TAIL

The angular tail assembly is fairly simple to construct. Light wood is used here with gussets added to provide strength. Again, sand the completed structures and set



ARMSTRONG-WHITWORTH FK-8

“BIG ACK”

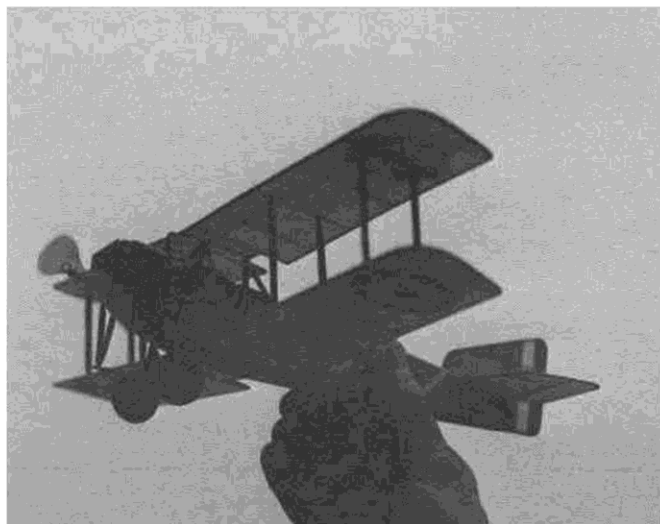
**By TOM NALLEN JR.
... Here's an interesting and relatively obscure WWI machine designed for the Flying Aces Peanut Mass Launch event. Layout and moments are ideal for F/F scale.**

aside for covering later.

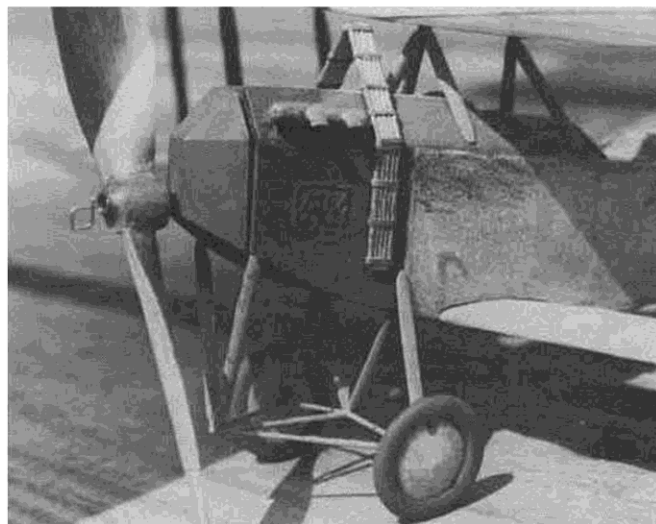
FUSELAGE

Begin by building two identical fuselage sides on the board. Use straight and stiff lengths of 1/16 square balsa for the longerons and softer wood for the uprights (and crosspieces later). Gusset where indicated on the plan and fill in the nose section with soft 1/32 sheet balsa. When building the fuselage sides, consider the structural loads involved and select wood accordingly. For example, the rear motor peg support should be hard balsa while the remaining uprights in the aft end can be much lighter. In general, use stiffer wood in the forward sections and softer

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A realistic color scheme was obtained using dyed Japanese tissue—see text for details on how this is done. Insignia and markings were cut from colored tissue and applied with a spray adhesive.



Strut arrangements and cowling details of the 120-hp “Ack” are clear in this photo. Plans also show details of the later 160-hp variant, which had a more conventional nose and landing gear.

wood aft. When the cement has hardened, lift the sides off the board and make certain that they are identical. If so, proceed to build the basic fuselage "box," trying to keep the structure as square as possible. I find it easiest to start from the tail post, working forward with the fuselage upside down on the building board. The straight upper longerons help to maintain a square section as you work forward adding cross-pieces. When the fuselage box is completed, fill in the underside of the nose section with soft 1/32 sheet. Also, cement hard 1/8x1/8 balsa strips inside the nose crosspieces and uprights. These last pieces must be hard enough to withstand regular removal of the noseblock and those inevitable rough landings.

Turtledeck formers are cut from 1/32 sheet. Formers 1 through 5 have no stringers, but are covered in two sections with very thin sheet balsa. I used 1/64 sheet for the decking. The cockpit section is installed first, trimmed and then followed by the front top section. At this time, rough out the noseblock from medium block balsa, cement the 1/4 sheet plug to the rear face, drill out the assembly and insert the 1/16 O.D. brass tube bushing. Drill the block with a few degrees of down and left thrust as shown on the plan. Bring the noseblock to a snug fit and finish shaping. The fuselage is completed by notching and mounting the rear formers and laying in the 1/32 square balsa stringers. The entire fuselage is now sanded and readied for covering.

COVERING

Store-bought green tissue is never quite right for WWI ships. I dye my own using white Japanese tissue taped to a frame and pre-shrunk with a sprayed water and RIT olive drab dye mixture. The results are worthwhile. Use a sturdy frame and masking tape the tissue all around as taut as possible. Spray the dye mixture onto the tissue and gently wipe off the excess with a Kleenex. Be careful not to tear the wet tissue. Let dry, then cut the dyed tissue from the frame and cover the model, shrinking the tissue once again with a light water mist. Cover the undersurfaces of the wings and stabilizer with white tissue to simulate the clear doped undersurfaces typical of Allied machines in WWI.

LANDING GEAR

I prefer the early version of "Big Ack" with the birdcage landing gear and venetian blind radiator. However, the plan also shows the more conventional landing gear and detail of the later 160-hp variant.

That spidery landing gear is actually quite sturdy. The two main legs are mounted on a bamboo core, while the remaining sections are fine piano wire wrapped with thread and cemented at the joints. All of these "core" pieces are embedded and cemented into the sheeted nose and then covered with balsa struts. It really isn't as complicated as it seems.

Start by fashioning a length of 1/32 square bamboo and embedding a section into each fuselage side at the proper angles. Cement at the fuselage joint and trim each leg to the proper length. Using the plan front view as a pattern, bend and

cut the front and rear "V" sections from .010 music wire. Cement these to the fuselage using a pin to make the mounting holes in the nose. Next, mount the axle wire and the final triangular connecting piece, fastening each connection with light thread and a drop of epoxy or CA. To finish the job, make up the balsa struts, then notch and cement them to the bamboo and wire frame.

ASSEMBLY

The FK-8's tripod cabane arrangement makes wing mounting and alignment relatively easy. Cut all interplane and cabane struts from medium 1/32 sheet balsa. Sand each strut to the proper shape and cross-section, then finish with a coat of sanding sealer followed by another once-over with fine sandpaper. Finally, apply a thinned coat of "reefer gray" Floquil model railroad paint. All of the FK-8's wing and landing gear struts are painted reefer gray.

Assemble the V-shaped cabane structures on the building board. While the cement is drying, cut out the small square of tissue covering each interplane and cabane strut "pocket." Lift the cabane assemblies from the building board and cement each to the fuselage top decking, making sure that the forward assembly is in front and vice-versa. Cement the forward leg to the front cabane assembly and gently test fit the top wing. The apex of each cabane assembly should rest in the center rib pockets. If all is OK, set the fuselage aside and let the cabane-to-fuselage joints dry.

Cement the lower wing into the fuselage wind saddle. Apply glue sparingly to the top wing cabane strut pockets and fit the top wing to the cabanes. Temporarily fit the outer bay interplane struts into their pockets and check the wing alignment. True things up and put the model aside to let the wing attachment points set. When ready, cement and install all of the interplane struts and the tail.

TRIM

FAC mass-launch events such as WWI Combat require all entries to be at least moderately detailed. That typically means all of the markings, accurate color and at least some of the more distinctive fittings.

My model is finished to these standards, however, much more could be done to enhance your "Big Ack's" character. For example, a Scarff ring with Lewis gun would really look great.

FLYING

My FK-8 flies best with a 14-inch loop of 2mm rubber turning a 5-inch diameter hardwood prop. A bit of clay may be needed to balance the model at the top wing spar. My model turns left under power and left in the glide. Remember this when lining up for the mass launch; if you're on the far right and turning left, you'll likely find yourself in quite a melee right off the launch!

Have fun, that's what this event and indeed the Flying Aces Club is all about. ●