Gear up! The Patriot XL will be turning heads on those supersonic fly-bys.

By Rick Andrese

A little over ten years ago, Great Planes came out with their .45 size *Patriot*. Good plans and instructions, along with ease of assembly and fantastic performance, made the *Patriot* one of the planes to build.

The new *Patriot XL* kit by Great Planes takes no back seat to the original kit. Designed for a .60 size engine with pneumatic retracts instead of mechanical, along with the many refinements designed into the assembly process, make the *Patriot XL* a must-have kit.

It takes an engineer to figure out how to fit all those kit components into a box as neatly as they are. But something has to come out of the box eventually, so take out the plans and instruction manual first, then tune up the gray matter in preparation for building. As the manual states: "Decisions you must make..."—well, no choice here. Radio: yes, flaps: definitely, retracts: what else? Those steps were easy. Now for a hot 60 (an S.T. G61 ABC was used).

Following the manual, construction begins with the tail surfaces. Under the "Expert Tips", placement of the internal ribs is not critical as long as you have a strong structure. To accomplish this, I moved what would be the main spar aft about one quarter inch, so it sits against a flat on the trailing edge. The end of the spar also splits the gap between the leading edge and stab tip. Select your surface sheeting accurately. There is enough, but if you select a wrong length, you will run out of sheeting during a later stage. This will require a run to your local hobby shop. I know!

The wing panels build fast and accurately. Just follow the instructions. The check boxes for each step really help you keep track of where you are when working the left, then the right panel. When installing the servo trays for flaps and ailerons, I found it easier to flip the panels over. For added strength to the butt joint between tray and spar, a small ply tab was added.

With the wing panel tops sheeted, the landing gear rails are installed. Epoxy and clamps work well on this step. Then partial sheeting of the panel bottoms is done. Be sure to pin or weigh down the panels to ensure that washout, built into the trailing edge, is accurate.

While installing the Robart mains, be careful with measurements. The three-inch measurement shown in step 5 is much closer to four inches. With the wing joiner epoxied, take the time to trial fit the two wing panels together. Note that the picture in step 2 shows the joiner backwards. When ready for the final assembly of the panels, use plenty of glue and clamps. A touch of CyA at the leading and trailing edges help maintain alignment until the epoxy cures.

Prior to final sheeting of the wing, balsa bolt support blocks need to be installed. I felt that a picture in step 7 on page 20 would have been helpful.

With the wings sheeted and sanded, out of habit I chose to glass the panels together, though it is not mentioned in the instructions.

The fuselage is made up of several subassemblies. When all are assembled, they make for a very accurate fuse. With the frame complete, step 14 calls for the attachment of balsa fuse corners. Be careful here, so that you do not pinch in the ply sides when gluing. The one difficult part I found was bending in the fuse sides around

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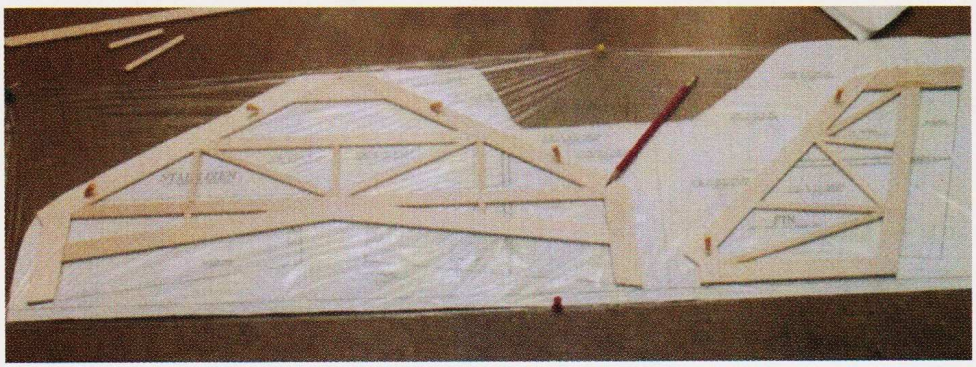
World Models T-Bird pilot adds to the *XL's* total appearance. Note the fuel manifold. Some sort of external fueling port is almost a necessity because of the tight space in the engine cowl.

Great Planes PATRIOT XL

AT A GLANCE

Type:	intermediate aerobatic
Construction:	balsa/ply
Wing span:	55 inches
Wing area:	742 sq. in.
Airfoil:	Selig
Length:	59½ inches
Weight:	8-8½ pounds
Wing loading:	25-27 oz./sq.ft.
Engine required:	.60-.91 2-stroke .60-.91 4-stroke
Radio:	5-channel, flaps optional
Servos:	6-9 standard servos
Also needs:	spinner; 2 rolls MonoKote® Robart #605 and 607 retracts
Mfg. by:	Great Planes Model Mfg. PO Box 9021 Champaign, IL 61826 www.greatplanes.com

From any angle, the *Patriot XL* looks just great! **(above)** Rick installed the optional flaps that require a sixth channel. With flight characteristics to match its jet looks, you'll still find it a stable model. Covered in MonoKote and painted with LustreKote gives the *XL* a super finish **(below)**.



Moving the main spar aft about ¼ inch will strengthen the stabilizer at its tips and center section. This provides a joint that pulls together the diagonal leading edge, the spar, and the tips. Some trimming is needed.

Fitting the tail cone with a bulkhead makes attachment easier and stronger.

the firewall. I resorted to using balsa tri-stock to aid in this task.

All plastic parts were painted with LustreKote primer, followed by aluminum. The painting was completed prior to attaching the parts. Very little info is given on how to attach the ABS parts.

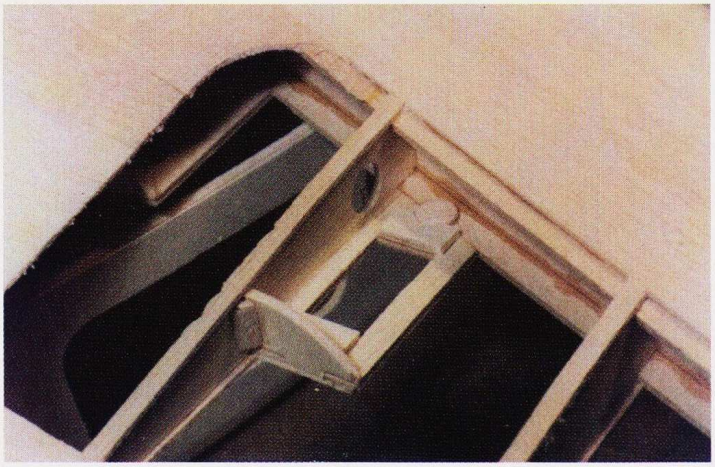
For the ABS fin fillet, I used two small formers to match the fillet to the turtle deck. I shaped a bulkhead to fit inside the tail cone, then attached the assembly to former eight. As you can see in one of the pictures, I partially covered the fuse and tail with MonoKote before putting on the ABS fin fillet. However, you could cover the entire aircraft, and then attach all the ABS parts.

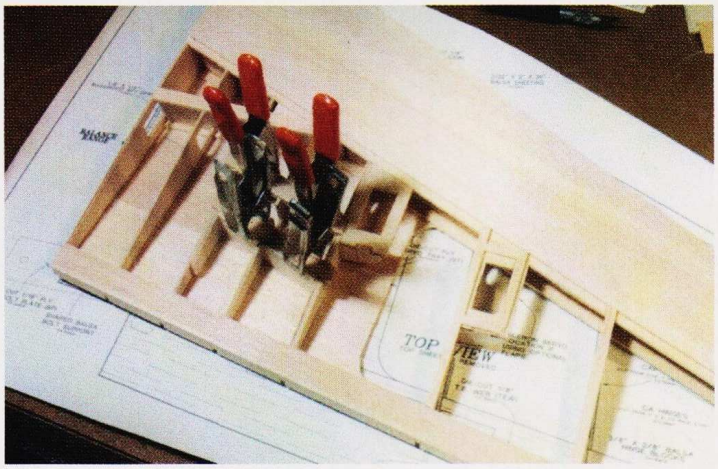
The air intakes need a little work to get them right. After trimming to size, I dry mounted them to the wing saddle, using the wing to hold them into place. I then outlined the edge onto the MonoKote with a marker. Then, I removed everything and lightly sanded the MonoKote inside the lines. After re-attaching the intakes and wing, CyA was wicked around the intakes to hold them in place. With care, this process seemed to work very well.

Final assembly included the SuperTigre engine, cowl, spinner (Great Planes), canopy, and the Hitec radio servos and receiver that came with the Optic 6 radio system. Everything was straightforward except the canopy. Sprayed with LustreKote, the canopy edges curled out a little. With a World Models Mfg. Co. Ltd. *Thunderbird* pilot installed, it's hard to notice the curl. I finished the *Patriot* to match the photo on the box. One shortcoming in the kit was a lack of stars to duplicate the tail surfaces as depicted in the cover photo, so I purchased a sheet of trim stars to complete the scheme.

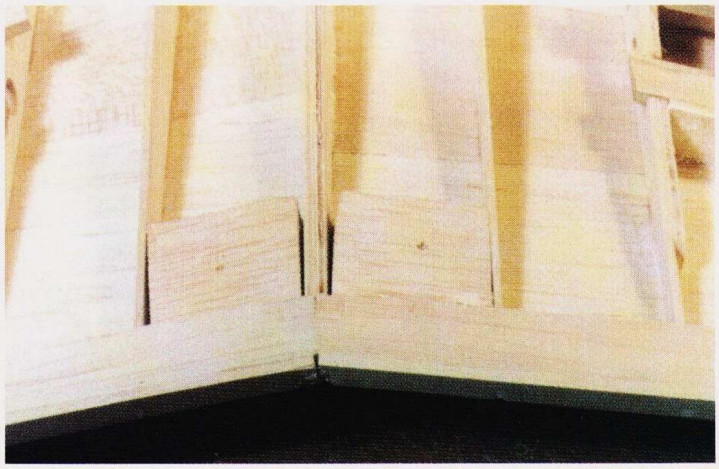
Right off the table and ready to fly, with the suggested throws, the plane balanced perfectly with no added weight. At the field, I experienced some teething problems with the SuperTigre, driving my ground crew, as well as myself, berserk. Five blown plugs and two hours later, we got a good, not great run, on the engine. Being brand new, one must expect some problems. Being totally spent, I turned the first flight over to my long-time flying buddy, Bob Boswell.

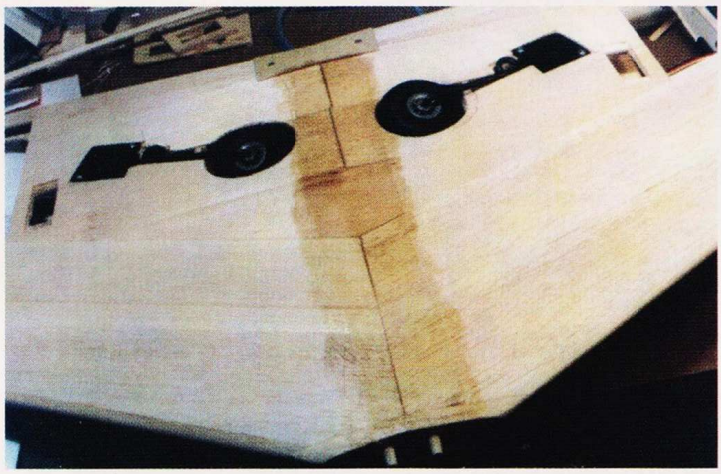
After a few high speed taxi attempts, it was decided by the jeering on-lookers, that

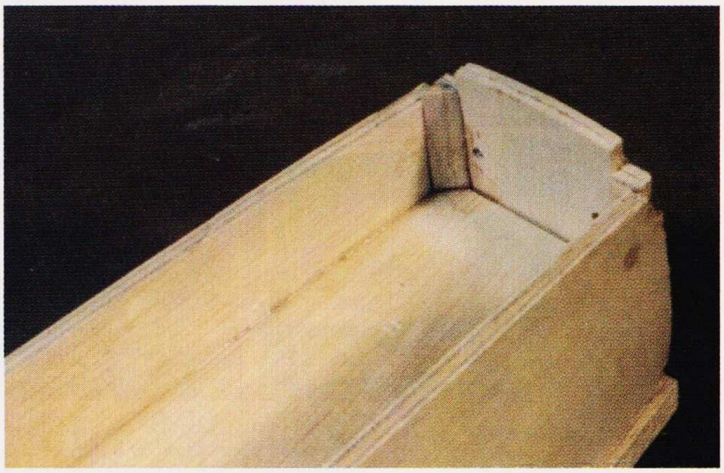




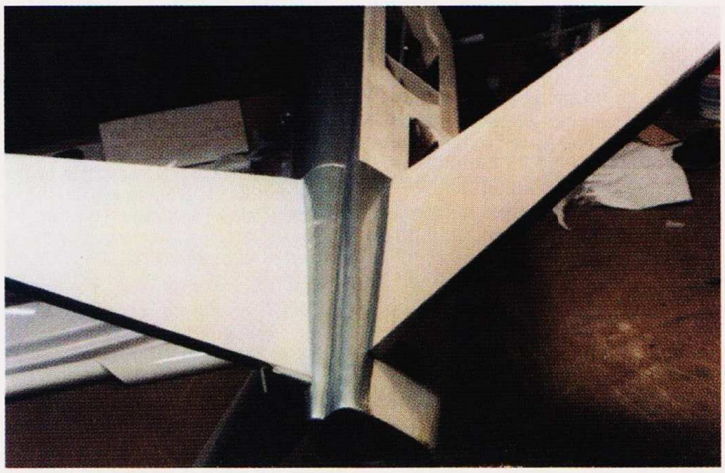
Gussets and tri-stock will add greatly to the strength of the servo mounts **(above left).** Epoxy and spring clamp gear blocks **(above right)**. Plenty of clamps and a few drops of CyA ensure alignment as epoxy hardens **(below left)**. Don't forget those balsa wing bolt support blocks. Plans do not show them well **(below right).**







See the text about measuring the main gear struts **(above left)**. Reinforce the engine mount to side panels with small tri-stock **(above right)** to prevent springing. Using a small former eases the installation of the tail fillet **(below left)**. The match of MonoKote and LustreKote is the best I've seen **(below right)**.



a negative angle of attack prevented rotation and lift-off. Wanting to get this bird in the air, the 2½-inch nose wheel was replaced with a three-inch wheel. This wheel lifted up the nose and, on the next attempt, the *Patriot* lifted off.

With the new oversized front wheel, the retracts had to remain down. This definitely affected flight speed.

With corrections to be made, I brought the plane home following its first somewhat successful flight. Shortening the mains and lengthening the nose gear, were in order. The mains were shortened so they cleared rib 3 by ¼ inch. The nose gear was lengthened by almost ½ inch. The fuse nose also required the lengthening of the nose gear wheel well which brought it right up to the bulkhead. With a new supply of glow plugs, we were off to the field for some real flying.

Starting the engine was far less laborious than the previous time. No blown plugs! With me on the stick, I went to full throttle and lift-off was acquired with only a small amount of up elevator. Raising the retracts, the *Patriot* showed a marked improvement in flight. This plane really tracks. With not one trim needed, the *Patriot* demonstrated pattern plane performance, with axial rolls and perfect loops.

Following a brisk flight, the landing was solid. Just lower the gear and flaps and she plants right down on the mains first, while pulling a little flare.

Not seeming as fast as the .45 size *Patriot,* the *XL* is still a pleasure to fly, and if you like to build a little, this quick and easy project will be right for you.

In flight, the SuperTigre G.61ABC pulled the plane like a rocket **(above)** though some initial plug problems caused erratic running. A Enya #3 plug made the problems go away. The nose gear was lengthened **(below)** about ½ inch to eliminate a negative angle of attack, that wouldn't allow rotation for takeoff.