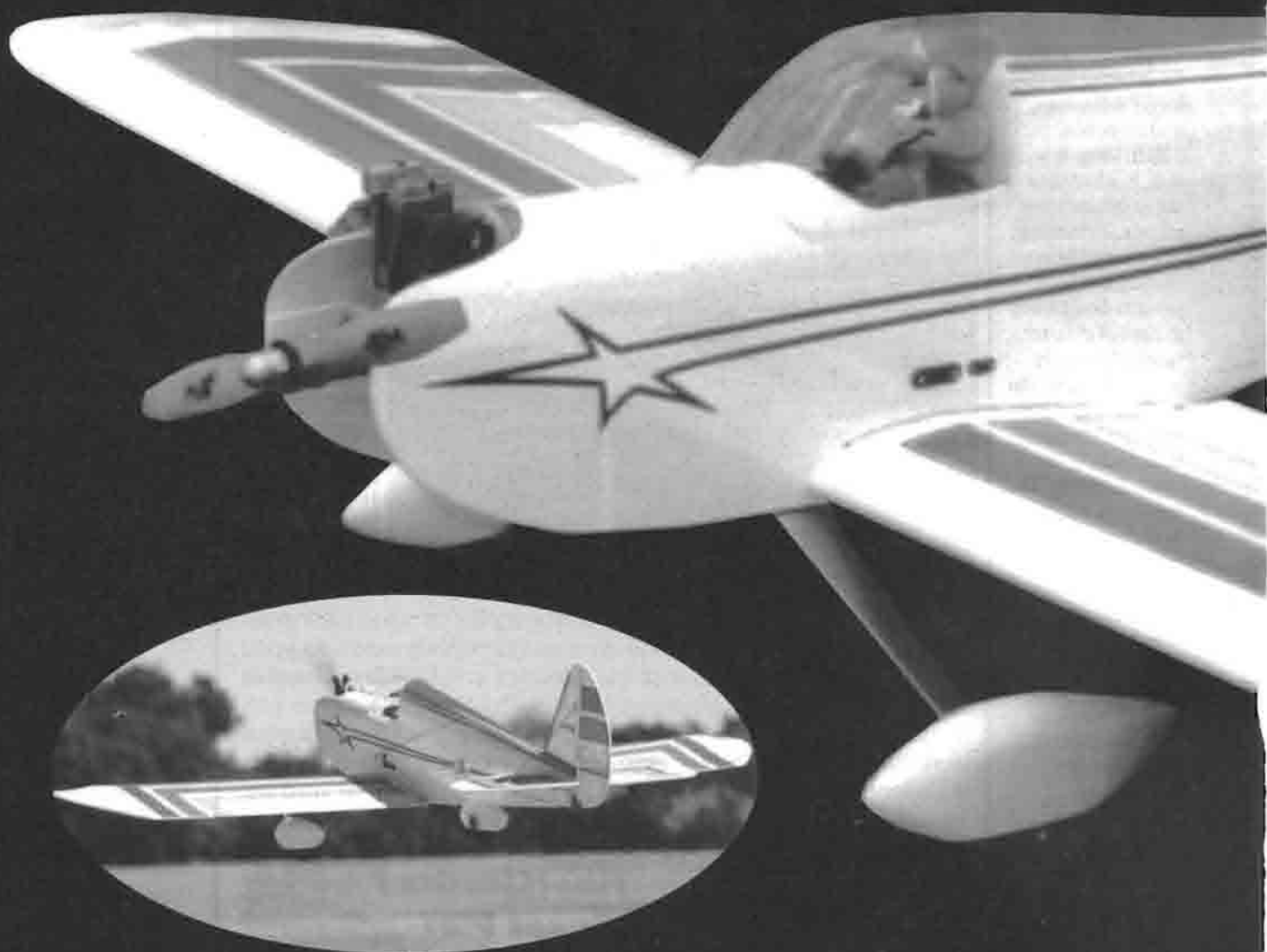


BANDITO

Grande

By D.B. "DOC" Mathews



The Bandito 40 as published in the April 2000 issue of RCM has proven to be such a totally delightful model airplane for us that we began to consider enlarging the design to determine if its good traits would transfer to a much larger model. We have been very pleasantly surprised to find this 80" version is actually, in some ways, even better. There is no denying that larger models are much easier to see in flight and

that they also fly more smoothly particularly in the wind.

An effort was made to carry the light weight of the 40-sized version on into this larger one. Our Bandito Grande weighs in at a respectable 12 lbs.

This exceptionally light weight and resultant low wing loading, wide tread landing gear, simple construction utilizing standard materials and hardware, and perhaps most importantly the

novel "cuttings" of the design have all combined into a truly remarkable large model.

Even with a well worn old O.S. 1.20 (non-Surpass) 4-stroke, the Grande is very happy doing consecutive vertical eights and most of the traditional (non 3d) maneuvers. The lesson seems to be that a model with a light wing loading will make an engine considerably more powerful.

Any of the more modern 1.20 to

.90-1.5 Powered Sport Flier

IMAA LEGAL



1.50 4-stroke engines will only add more power reserve, although the flier will likely rarely need full throttle.

A .90 to 1.08 2-stroke power plant should be fine, but we are a little uneasy about the structural strength needed for a 1.20 2-stroke. A Zenoah G23 or US 25 gas burner would also be most satisfactory, but in this case the firewall should be moved aft 1" to help avoid nose heaviness.

One would need only to add to the outline of the firewall bottom to do this.

The landing gear location has been optimized on the Grande by using a cut-out notch in the wing's leading edge for smooth no bounce landings. This places the mains in a more ideal location when compared with the more usual "forward of the leading edge" approach but it does add complexity. If you are flying from a

BANDITO GRANDE

Designed by:
D.B. (Doc) Mathews
TYPE AIRCRAFT

Sport

WINGSPAN

82 Inches

WING CHORD

15 Inches

TOTAL WING AREA

1200 Sq. In.

WING LOCATION

Fuselage Bottom

AIRFOIL

Modified Semi-Symmetrical

WING PLANFORM

Constant Chord Rounded Tips

DIHEDRAL, EACH TIP

2 Inches

OVERALL FUSELAGE LENGTH

62 Inches

RADIO COMPARTMENT SIZE

12.25" (L) x 4.5" (W) x 5" (H)

STABILIZER SPAN

30 Inches

STABILIZER CHORD (inc. elev.)

9.5 Inches

STABILIZER AREA

285 Sq. In.

STAB AIRFOIL SECTION

Flat

STABILIZER LOCATION

Top of Fuselage

VERTICAL FIN HEIGHT

12 Inches

VERTICAL FIN WIDTH (inc. rud.)

9 Inches (Avg.)

REC. ENGINE SIZE

.90 cu. in. 2-Stroke

1.20-1.50 4-Stroke

FUEL TANK SIZE

14 Oz.

LANDING GEAR

Conventional

REC. NO. OF CHANNELS

4 (6 Servos)

CONTROL FUNCTIONS

Rud., Elev., Throt., Ail.

C.G. (from L.E.)

4 to 4-1/2 In. Aft Of Wing L.E.

ELEVATOR THROWS

1-1/4" Up — 1" Down

HI RATE

2" Up — 2" Down

AILERON THROWS

1/2" Up — 1/4" Down

HI RATE

3/4" Up — 1/4" Down

RUDDER THROWS

1-1/4" Right & Left

HI RATE

2" Left & Right

SIDETHRUST

To Suit Power

DOWNTHRUST/UPTHRUST

2 Degrees

BASIC MATERIALS USED IN CONSTRUCTION

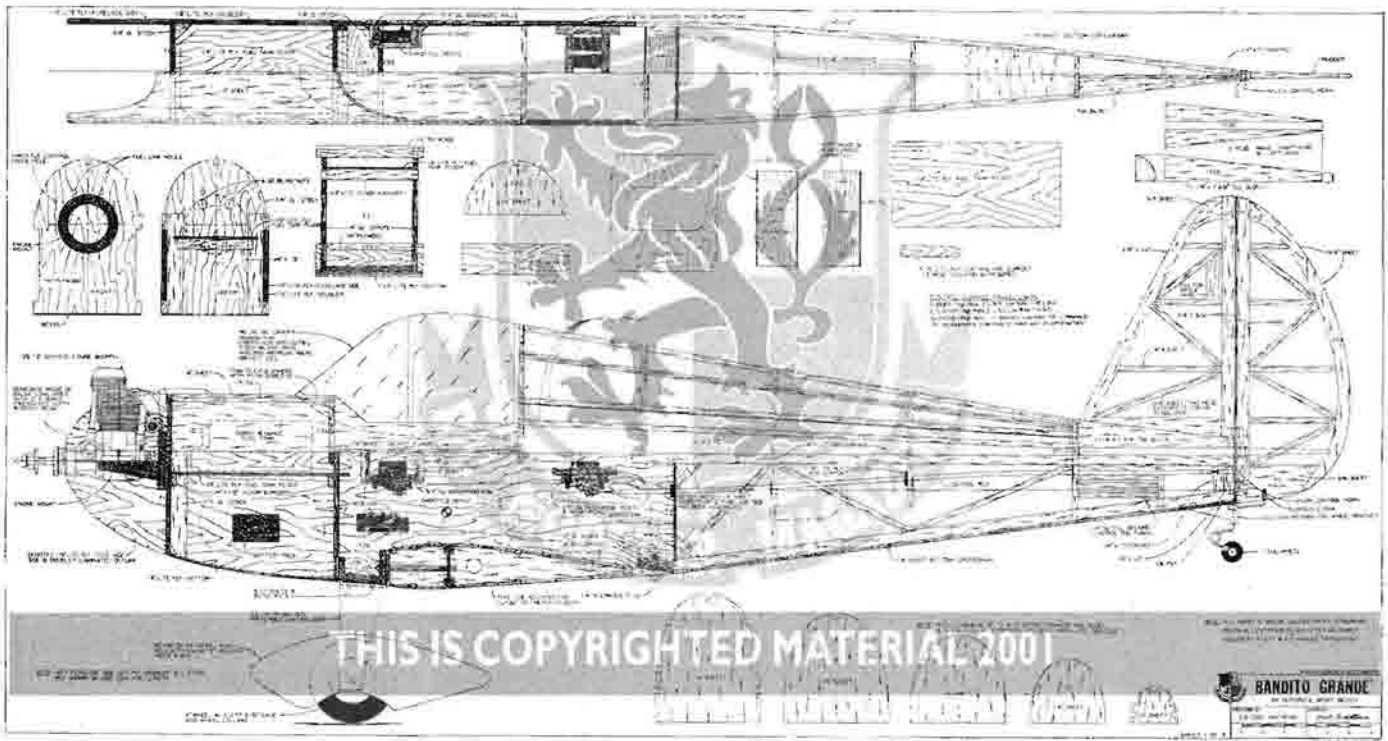
Fuselage Balsa, Ply, Basswood

Wing Balsa, Spruce, Basswood

Empennage Balsa, Hardwood

Wt. Ready To Fly 192 Oz. (12 Lbs.)

Wing Loading 23 Oz./Sq. Ft.



bumpy grass strip as I am, the extra effort is worth it. Should you fly from a paved surface, it is obvious the wing cut out could be extended to full chord, LGM attached to a second ply doubler in the center of F2, and the wing built without the leading edge notch.

While the lightweight construction techniques used in this design might potentially raise questions of durability, we deliberately flew our prototype a full season with several hundred flights to make sure it would hold up under nearly daily use. It passed every test from clipping the top of a tree on final to developing a leak in the fuel line without serious problems. This model is light, not weak.

Some builders are skeptical of open framework Warren truss fuselage construction for large R/C

models. First consider the roof on your house and how its built, and second remember we're no longer using nitrocellulose model airplane "glue" that dries from the outside in.

Irregardless of the power plant chosen, the Bandito Grande will delight the builder with its well proven simplified construction techniques, its design parameters, its appearance, and its flying.

This is our 73rd published design over 25 years. Many of those previous efforts have brought much joy and pleasure to myself and many who have built them from the plans, but I can honestly state "the Bandito Grande fulfills me personally more than any of the others."

If you're not into building model airplanes from plans, you're cheating yourself out of one of modeling's greatest pleasures. There is nothing quite like seeing something you created from a pile of stock wood, fly. The feelings of pride in accomplishment, joy in success, and the knowledge that you've done something most ordinary people haven't the self confidence to even attempt, is an emotion you will treasure, even into your declining years.

Materials

All wood stock is standard hobby shop 36" lengths. Hardware items such as landing gear and canopy are available direct from the manufacturer or on order by your hobby shop.

Basswoods can be substituted for spruce if it is not available. The term "lite ply" as used here is poplar ply not mahogany door skins. It is easily obtainable from most any of the firms who sell model aircraft woods.

The primary adhesive used in this project is CA (Hot Stuff, etc.) in thin, medium, and thick viscosities. A spray accelerator is helpful. Some areas of construction and finish call for epoxy, this should be Hobby Pox 2 or equivalent not "5 minute." A small amount of aliphatic resin is used; this is commonly known as "Tite-Bond" or "Sig-Bond."

The canopy is easily installed with windshield adhesive such as RC-56.

We usually build out of a scrap box using a good balsa stripper (Master Airscrew) to create the smaller pieces needed from leftovers from cutting out larger ones. As an example: the diagonal ribs in the stab and fin can be easily stripped from scrap left over when cutting the wing ribs from sheet.

The wing construction on the Grande depends on the stiffness of the covering material for its integrity. It must be covered in MonoKote, UltraCote, or Oracover only! This covering should be adhered to each rib during its application. Use of one of the lower heat coverings or fabrics will produce a wing that flexes in torsion which can lead to all sorts of strange flight behavior. Don't use it!

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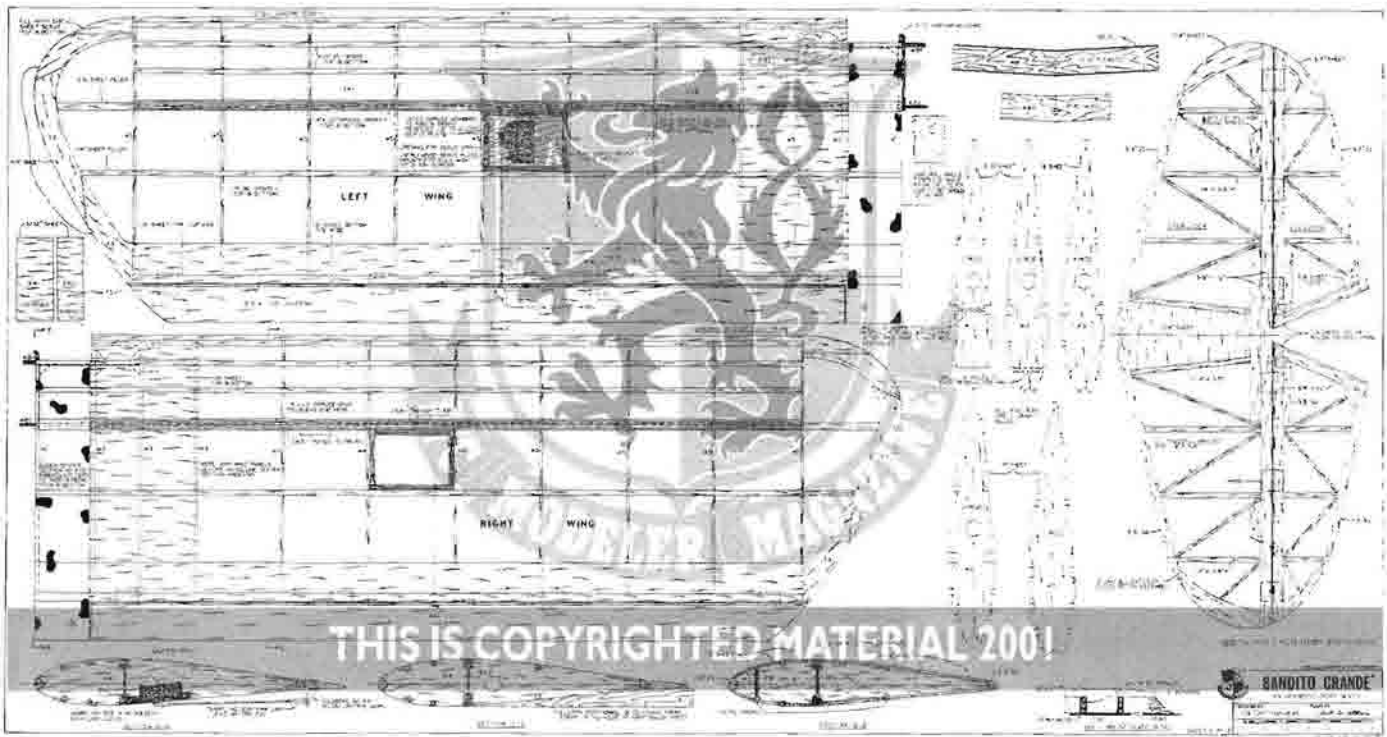


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Creating The Cut Parts

There are several techniques for transferring part patterns from the plans to the appropriate wood. All seem to work but our favorite is to make copies of the parts using an open top copier (like those at supermarkets, etc.), rough-cut the pattern with scissors, then adhere it to the proper piece of wood using a glue stick. The part can then be cut and sanded to exact outline, then the pattern peeled off.

The wing ribs are best created by transferring patterns onto 1/8" plywood and cutting them out. This plywood rib then is pinned or nailed onto a stack of rib blanks and used to stack cut them with a jig or band saw. The Grande actually uses only two wing rib patterns, the other numbers can be created from them by removing the appropriate sections.

The lite ply side pattern can be developed by placing carbon paper between the drawing and the wood, then carefully tracing over the drawing with a straightedge and pencil. Once one side has been cut out, the three others can be created by using it as a pattern to draw around.

The doublers are the same as the outer with the exception of the lightening holes. It's a good idea to nail all four pieces together and sand the edges uniform with 100 grit paper on a block.

Tools

The ordinary inventory of workshop tools should be adequate in building the Grande. However, if you do not have a razor plane such as a Master Airscrew or a hobby saw such as those from X-Acto or Zona, they are nearly indispensable for this project; it is very tedious and inaccurate to attempt to cut through woods of the sizes used in this project with a blade.

Since the wing panels build flat from the bottom main spar aft, it is obvious a flat building surface is needed. To repeat oft given advice: get a damaged door and some 2' x 4" sections of non-perforated ceiling tile at a building supply. Place the door on saw horses or one of the inexpensive metal folding tables found at discount stores. You now have a flat solid building board that will last for years.

The most important tool to have in building the Bandito Grande is also the cheapest. You absolutely owe it to yourself to have a selection of sanding blocks with various grades of aluminum oxide paper attached to them. Most building supplies have a selection of cut-off wood ends at very reasonable prices. Flat pieces of wood about 11" x 3-1/2" x 3/4" — are just right for attaching full sheets of paper by wrapping it around three sides and securing it to one edge with thumb tacks. Need we mention using dull sandpaper and dull razor blades are the same thing.

Additional smaller specialty sanding blocks can be made by adhering paper to appropriate sizes and shapes with CA. We will fabricate and use one of these special shapes during this model's construction.

When drilling the dowel holes through the fuselage formers into the wing, a 12" long drill bit is very handy, though not totally critical. However, once you have one you'll wonder how you got along without it.

Radio

The Bandito Grande uses two servos for the ailerons, two for the elevators, and one each for rudder and throttle. Our prototype flies very well with standard 40 in. oz. thrust servos. The rudder would likely benefit from a stronger servo and, if you are going to

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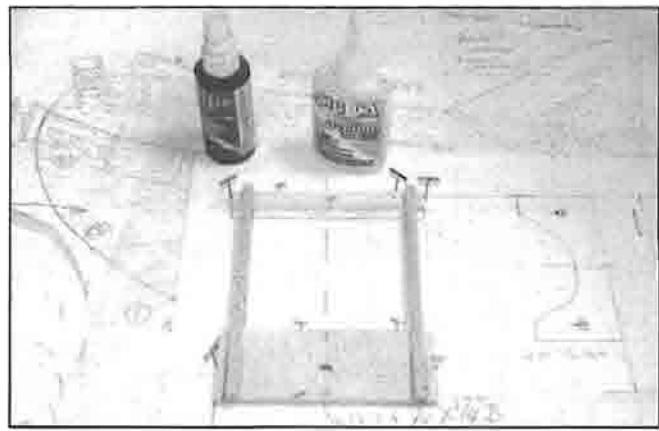
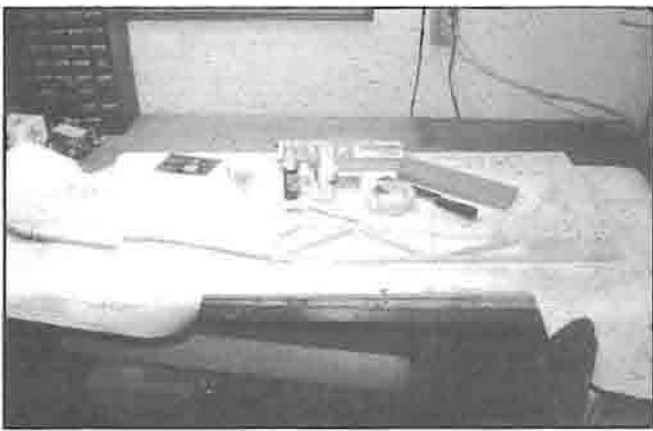
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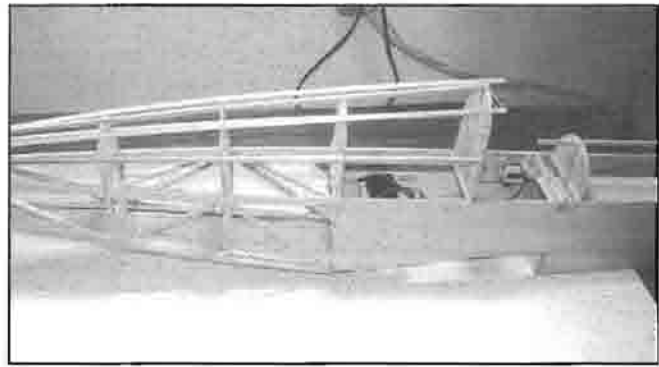
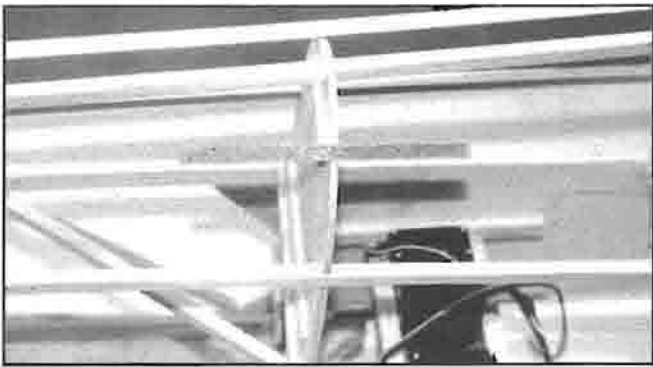
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LEFT: Fuselage side has been laid down and is ready for the second side to be built over it. **RIGHT:** Fabrication of former F-2.



LEFT: Turtledeck formers installed and stringers being added. The tool is a section of wood with aluminum oxide paper adhered to it, and is used to file in the stringer notches. **RIGHT:** Stringers in place.

high power this model, you'll need to consider them for everything.

A programmable transmitter is handy for setting dual rates and differential ailerons, but a standard unit will also work. Since the model tends to nose heaviness, consider the possibility of needing to install the 1200 mAh battery pack farther aft than under the tank.

No paper tubes were used to carry the aileron extension wires through the wing. I simply feed a ball chain through the rib holes, then use it to pull the extensions through. No need for tubes. The chain I use is the material that was once used to keep track of the stopper for old bath tubs. As it is lowered into the covered wing, it can easily find its way through the holes.

CONSTRUCTION

Using the mentioned techniques, cut out all the required parts including the necessary holes and slots. Note only former A and F are pre-notched for the stringers.

Position the engine mount over the firewall, mark and drill the holes, and install it temporarily. A drop or two of med. CA will safety the blind nuts. Repeat this for the landing gear block and tail wheel brackets.

Wing ribs are stack-cut, sanded, and numbered with a pencil. Try to sort them so that each set is about equal in weight.

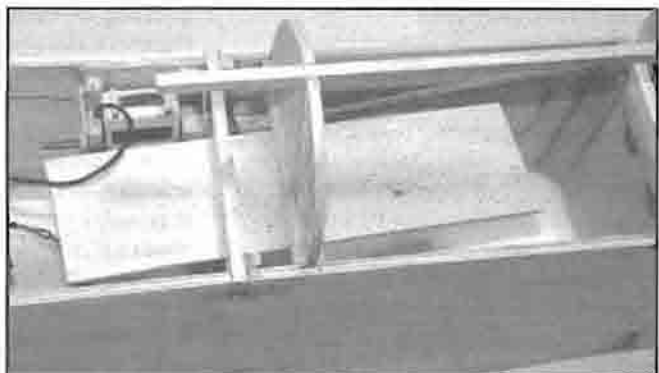
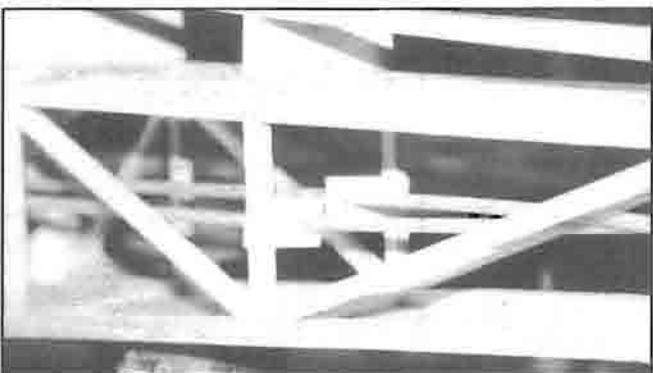
After cutting the wingtip and empennage outlines, use a sanding block to trim their joints for a flush fit

within the drawn outline. They can be finish-sanded on the inside of the curves by wrapping aluminum oxide paper around a can (Pringles is just about perfect), don't round the exteriors of these or any other units until they have been assembled to the wing, etc.

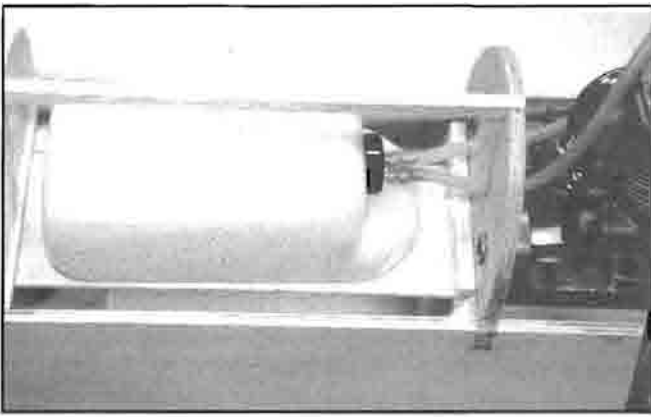
The ailerons are fabricated by shaping with a razor plane and then sanding blocks. There should be an airfoil shape to them on top and flat on the bottom. The sections that will fit in the center section will be more steeply tapered to match the fuselage sides.

Wings

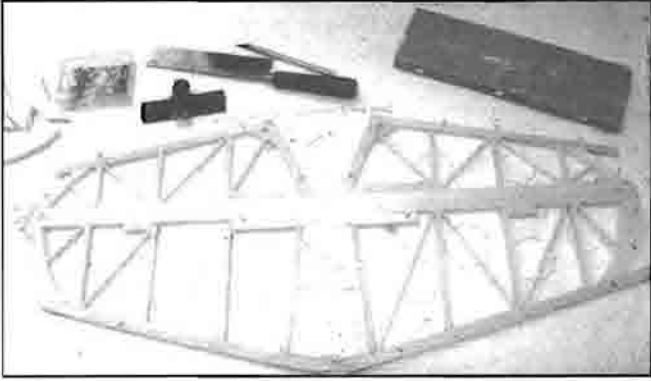
Place wax paper on the plan, lay down and pin the trailing edge sheet, spars, and the center section sheeting using some



LEFT: Lite ply pushrod guides help prevent flexing. **RIGHT:** Removable tank floor illustrated. It is held down by weight of tank and its foam packing.



LEFT: Fuel tank and fuel lines test-fit in position. RIGHT: Inner edges of shaped surfaces are sanded smooth prior to assembly.



LEFT: Horizontal stabilizer construction. Note balsa stripper, saw, and coarse paper on block. RIGHT: Wing under construction illustrating use of shear webs and pinned down spars to locate ribs.

ribs to correctly place them. This airfoil requires no packing or shimming.

Using the shear webs and dihedral gauge, position the ribs and glue them in place. Add top spars, leading and trailing edge strips, and the upper trailing edge sheet. The joint will be a little easier to plane and sand later if the edge against the spar is adhered with aliphatic resin.

Add the upper center section sheeting by cutting sections to fit between the spars slightly wide with a straightedge and knife, then sanding them with a block for a final fit. Remove the wing from the building board and repeat the process for the opposite wing.

Use a razor plane and sanding blocks to flair the trailing edge strip

level with the sheeting. Protect the sheeting with strips of masking tape during this step.

Sand the center section spars flush with the ribs, punch out the previously scored slots in the ribs and trial-fit the joint.

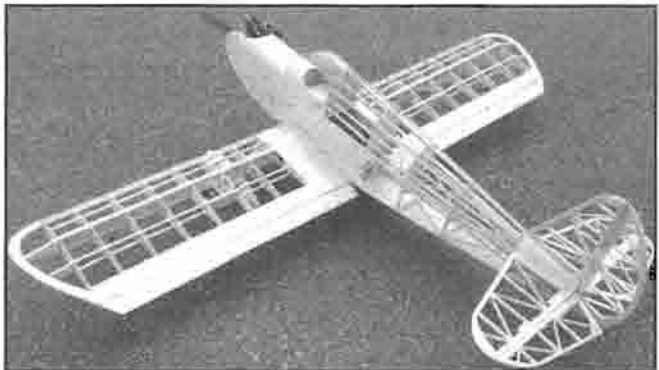
When satisfied with the fit, mix epoxy, spread it around inside the rib slots and onto the spars, coat the edges of the plywood braces and the rib faces, and join the wing halves.

When the epoxy has cured overnight, wrap the center section with glass cloth (Sonic Tronics non-raveling works great), and epoxy. Tack one edge of the glass to the center section with thin CA. Spread epoxy onto partial sections of the wing surface in the area that will be covered by the glass, pull

against the adhered edge, and push the epoxy up through the glass weave using a scrap of balsa or a playing card. Repeat this cycle until the entire section has been wrapped.

The aileron servos are mounted on removable ply plates that screw onto hardwood rails in the wing structure. The servos are mounted on right angle beams made up of hardwood pieces which have ply plates on their outside edges. These are then epoxied onto the inside of the plates. Our objective here is to have the servo arms nearly parallel with the aileron horns without any bends in the pushrods.

Notice we are waiting to install the wing dowel until we join the wing to the fuselage wing saddle. The tips should be



LEFT: Wing halves being epoxied together. Notice triangular balsa on edges at joints and that not all the center section sheeting has been installed. RIGHT: All framed up, ready for covering.

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added after that step. The ailerons are cut and then contoured using the razor plane and sanding blocks.

Trial-install the hinges following the manufacturer's instructions. Check and adjust as needed for a smooth nonbinding system. Laminated mylar (CA hinges) likely would be sufficient for the Bandito Grande, but we used pinned nylon units on all surfaces.

Fuselage

Join the ply sides and doublers using epoxy, nails, and lots of weights. When cured, pin one side over the drawings, add the top and bottom stingers and then the vertical sections. It is a good idea to always cut the longest sections first, in that way if it is cut short it can be used for the next longest piece, etc. Cut the pieces over length, then sand them to fit with 100 grit paper on a block.

This assembly can be done with either thick CA or aliphatic resin. Once the vertical members are in place, cut and glue the diagonals with medium CA.

Block-sand but do not remove from the plans. Place sections of masking tape over any area that will be touched by adhesives when building the second side over the first. Be careful to construct a left and right side.

After the glue has cured, remove the sides from the plan, sand the outer edges to exactly match each other, then separate them using a common table knife along the center. Notice the gussets at station #3 do not attach to anything on their forward edges, just the longerons.

Since the fuselage top is flat, it can be pinned upside-down over the top view using the front formers and pairs of identical cross members of 1/4" x 1/2" balsa. Bevel the inside faces of the tail post slightly with a sanding block. Pull together the rear of the fuselage to exactly match the top view in both planes, then clamp with clothespins.

Trial-assemble everything with masking tape and clamps, making sure everything is square with the building board in all planes. When satisfied, run medium CA along all joints on both sides.

Add the tail wheel ply brackets and the cross-grained bottom sheeting. This sheet should be cut into appropriate lengths, hinged together with masking tape, and assembled flat on the board before being placed onto the fuselage bottom.

LGM should be positioned with triangular stock, reinforcing the joint between it and the fuselage side. Once

flush and level, adhere it with epoxy. The cross-grained lite ply nose bottom floor area is not installed until the wing hold-down dowel hole has been drilled into the wing. This provides access for a straight-on alignment when using 1/2" drill.

If you do not have a long bit, do not permanently adhere the firewall and its triangular corner braces until the wing has been drilled, as this will provide room for the body of the drill.

Place the wing into the fuselage saddles using weights to hold it steady. Measure and mark the exact centerline of both the wing and fuselage. Align the wing center section relative to the marks and to the tail post/wingtip reference, then drill through the predrilled hole in F2 and F2B. Be certain the hole extends through WB1 and WB2.

Epoxy the dowel into the wing using a short section of coat hanger, etc., wire to work the epoxy into all the edges. Sharpen the dowel with a pencil sharpener and use this epoxy-coated end to tap the dowel into the wing. Wipe away any excess epoxy with an alcohol-soaked paper towel.

Return the wing to the saddle, re-check the positioning marks, then drill down through the wing center section into and through WM and its doubler. Remove wing and tap the holes to 1/4"-20, then flow thin CA into them and re-tap. Drill the wing holes to 1/4" for the hold-down bolts.

Sand the fuselage to remove any roughness, then complete the fuselage top by adding the turtledeck formers. Install the top spruce stringer, only making certain the formers are at right angles to the fuselage frame, then use the notches in A and E to position and mark the others. Hold the stringer in place, then mark its position on the former with a pencil.

Construct a "tool" of 100 grit sandpaper CA'd to one edge of a 1/8" scrap of 1/4" x 1/4" balsa. Trim the paper flush, then use this tool to file in the required stringer slots. In this manner the angle of the notch to the former can be controlled as well as depth. Trial-fit the stringers in pairs and adjust the slots for a smooth flow from front to back. Repeat until all stringers are in place, then CA the whole bunch to the formers. Correction-sand the deck formers if needed for a smooth outline.

Note: One set of stringers are positioned onto the face of E rather than in a notch.

Fabricate the tank floor by trial-

fitting it onto the horizontal strips on the back of the firewall and across F-2. This will be held down by the weight of the tank and the foam packing and allows removal of the tank from inside the fuselage if necessary. This entire area should be coated with epoxy for fuelproofing before the bottom of the nose is covered.

Sheet covering for the forward deck is easily fabricated by adhering its bottom edge to one side of the box, spraying this half with dilute ammonia water, then gently pulling it down onto the formers and center strip. Adhere with thick CA. True the center splice edge with a straightedge and sharp knife. Repeat for the other half and then carefully trim in increments for a tight fit against the center of the first half.

This sheeting will need to be notched to clear the upper portions of F-3 to avoid cracking. Once the water has evaporated, sand the cow! smooth, then cut out the cockpit hole. Cutouts in the sheeting should also be made to fit around the engine used. The balsa around the engine should receive a coat of glass and epoxy before final sanding.

Flow thinned epoxy inside the tank compartment, then install the cross-grained lite ply nose bottom. The holes for the landing gear can be located and drilled by pushing a small nail down through the blind nut out of the lite ply.

Fine-sand the entire fuselage, eliminating any glue blobs and rounding the bottom corners. The canopy is a stock unit available by mail order from Fiberglass Specialties (see address on drawings). It will have to be trimmed to fit; this can be accomplished by trimming the excess with canopy scissors. Fine-trimming is best done with a sharp blade, scoring the areas to be removed and flexing the material along the score until it pops off. It is very difficult to accurately cut completely through the plastic.

There is no way to draw the canopy outline on a flat piece of paper; therefore, it can only be carefully trimmed for a snug fit a little at a time until satisfied. For this reason you might want to consider purchasing two canopies: one to trim until satisfied and use as a pattern to cut a spare just in case too much plastic is removed or the unit gets too badly beat up in the trimming process.

Empennage

Pin the tip outline pieces over the wax paper-covered drawings and adhere the outline strips to them. Again, cut and block-sand the longest

pieces first; the angles are not really critical — just try to have the ribs, etc., about where they are drawn. The joints should mate well without large gaps. Aliphatic resin is the material of choice except for the diagonals. Notice the sheet in the center section is cross-grained with pieces of 1/4" x 3/8", capping the outside edges to prevent any flexing. The fin base extends onto the top of the stab and is treated in the same manner. Don't forget the extra filler pieces for the bolts that will hold on the brace wires.

Remove the units from the work surface, sand flat to remove all the humps and bumps. Tape the parts together at the hinge lines with masking tape, sand their exterior edges to a half round and the elevator and rudder hinge lines to a 45° angle.

Tape the parts together temporarily and hinge. Again, laminated hinges would likely be fine, but we used molded nylon units.

Equipment Installation

The following is not the only way to do things nor for that matter possibly not even the best, it is just how we have done things successfully, over and over again.

We mount the fuselage servos on 3/8" x 3/8" basswood rails, cut to fit snugly against the sides with secondary sections at the fuselage rail joint. In this instance two elevator servos are used. If you cannot transmitter-mix these, several nice electronic devices such as Electrodynamics EDR-106 are available to operate split elevators without mixing.

In our technique the servos are temporarily mounted, the pushrods installed, then the control horns. In this way the horns can be positioned to match the angle of the pushrods for improved accuracy. We use Du-Bro DU-173 30" threaded rods running inside the outer portion of Sullivan SU-505 Gold'N-Rods. The threaded (clevis) end is used on the horns and solder links on the servo arms. This produces very rigid, free-running rods with minimal temperature change. They are actually easier to install than conventional nylon tube-in-tube systems.

Before the servo end solder links are installed, we slide-drilled sections of lite ply down the outer nylon. Finish the soldering, then adjust them for smooth straight shots from the servo to the horns. Once positioned they are CA'd to the fuselage verticals, then trimmed flat with them.

Throttle hook-up is easily done with

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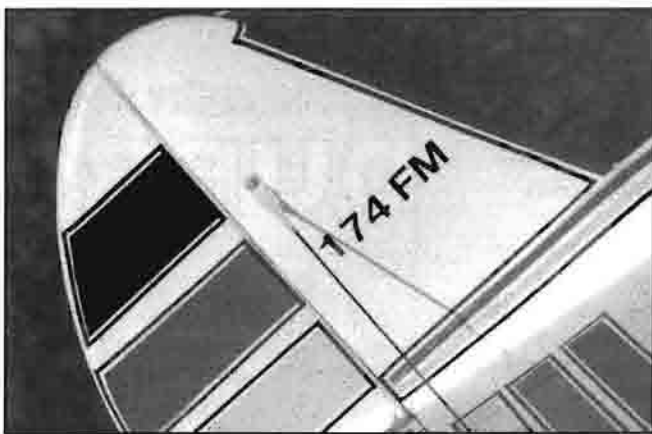
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LEFT: Tail braces are 2-56 pushrods with solder links and clevis on ends. Brackets are large Sig landing gear straps. **RIGHT:** Tail wheel bracket and horn installation.

braided cable inside nylon tubing. We found a Du-Bro 665 4-stroke throttle link very useful on this particular installation with an EZ link on the servo arm.

Several tail wheel bracket choices are available: we chose a Sullivan #861 bracket and it is fine.

Covering And Finish

The Bandito Grande wing needs the torsional strength of high heat covering materials such as MonoKote, UltraCote, or Oracover. Too much flexibility will result if other materials are used.

When covering the fuselage, start with the turtledeck. We like to adhere one edge, pull the covering tight against it around the stringers to the other side, then adhere that edge. One can adjust the covering section to avoid wrinkles if it is cut well oversize to allow "handles" to pull with.

The sides can be covered in one piece from nose to tail by cutting a straight line with a large steel straightedge, then carefully positioning that straightedge against the previously applied top covering.

The tail filler blocks are fabricated using the fixture shown on the plans. A section of balsa block is tack-glued into one side of it, rough trimmed with a carving knife, and sanded on down to shape using progressively finer paper. They are then covered separately and epoxied in place after the horizontal and vertical surfaces have been installed. Of course, the covering on the fin and stab must be cut away to allow for a wood to wood joint here.

The wing is covered in four sections, bottom first. The tips are not difficult to cover smoothly if one heats and stretches the covering as it is pulled down over the tips. In other words: heat, pull, stretch, adhere.

One of the most commonly omitted steps in covering with a heat-shrink material is running a cloth behind the sealing iron, pressing the material down onto the wood. This step greatly increases the total adhered surface, increasing the strength of the structure and preventing blistering and wrinkles caused by heat. In the case of MonoKote, punch small pin holes in the bottom of each open wing and empennage bay to

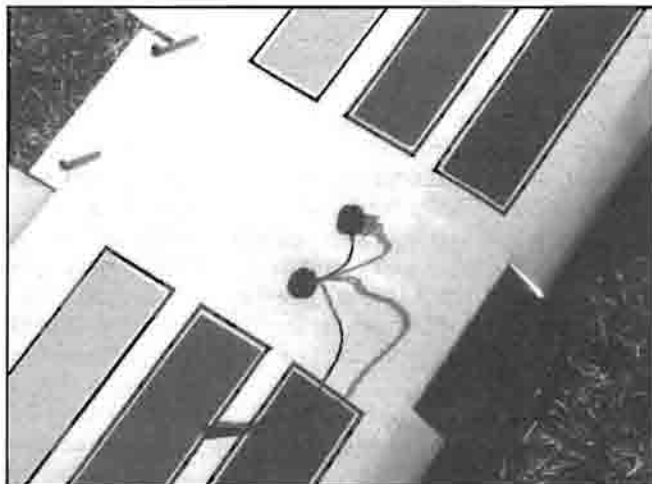
allow expanded air to escape. UltraCote is more porous and the trapped heated air can escape through it.

The pants can be painted with spray can Rustoleum. They are held to Goldberg 5/32" axles with Sig SH-727 wheel pant mounts on both sides with screws running through the pant into the mounts. This set-up will rotate during really rough landings rather than tear the pants.

Obviously, wheel collars should be used to space the wheels inside the pants.

The canopy can be adhered to the coaming with RC-56 or equivalent. We like to mark the canopy's outline onto the covering with a grease pen, then carefully remove a thin strip of covering. The canopy is then seated in RC-56 that has been beaded onto this cutout and held in place with masking tape and pins while the adhesive cures. Excess adhesive and smears can be removed with a rag and water before the glue sets. Hide the seam with trim tape or a strip of UltraCote Plus.

The 2-56 pushrod tail braces are attached with clevises to Sig SH-709



LEFT: My granddaughters insisted the Grande should be flown by Willy Coyote. **RIGHT:** Aileron servo extensions exit wing center section. They are drawn through using a ball chain per text.



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nylon landing gear retainer straps that have been bent in the middle to match the angle. These are bolted through the brace scraps with 3-48 bolts and elastic nuts. Threaded clevises are used on one end and solder links on the other. They are adjustable for a snug but not guitar string tightness. One of these nylon straps is passed between the tail wheel bracket and the fuselage.

Trimming And Flying

We have not shown any engine down or right thrust on the drawings. The reason being, these will vary greatly dependent on the power plant used and the specific characteristics of a given model's construction. We would suggest twisting the engine on its

mount for some right thrust at the time the mounting holes are drilled.

As your particular model is flown a bit, you may find a need for more right thrust if the model veers too sharply to the left on take-off and/or requires right rudder trim in high throttle. If your model points its nose up in high throttle, requiring down elevator trim, add some downthrust by shimming between the firewall and the engine mount back.

All this is not to imply bad flight characteristics but only to show a simple way to trim your personal Bandito Grande for hands-off tracking. Actually, the model flies extremely well, mostly due to its light weight.

The model should balance at the points shown on the drawings with the fuel tank empty. Some of this can be controlled by how far fore or aft the engine is placed on the mount and where the battery pack is placed. The Bandito Grande will tolerate some nose heaviness at the expense of more sluggish aerobatics and a hot landing.

Under no circumstance should the model be flown tail heavy!

The well located and wide set landing gear creates gorgeous take-off runs and landing rolls. Landings are slow and "float." This model does not drop like a stone when the power is cut.

Aerobatics with the surface throws in low rate are not flip and flop but rather stately and wonderfully well-controlled. If you've ever had the pleasure of watching Duane Cole fly aerobatics, you will understand. This model is capable of the most beautiful big and slow horizontal and vertical eights and Cubans you could ask for.

In high rates, snaps, and spins can be rather spectacular as well. Recovery is nearly instantaneous when the surfaces are returned to neutral. This model just doesn't have any handling vices.

In summary: the Bandito Grande is not your ordinary sport model. It does not look like one, build like one, or fly like one. It is a delightfully different model and I am just tickled to pieces about it.



LEFT: Ancient old non Surpass O.S. 120 still produces vertical eights. RIGHT: The Grande in foreground and 40 version in back. One of those times when an enlargement produced an even better model.