LANIER R/C'S

DOMINATOR 500

WARNING! THIS IS NOT A TOY!
THIS IS NOT A BEGINNERS AIRPLANE
This R/C kit and the model you will build from it is not a toy! It is capable of serious bodily harm and property damage. It is your responsibility, and yours alone - to build this kit correctly, properly install all R/C components and flying gear (engine, tank, radio, pushrods, etc. and to test the model and fly it only with experienced, competent help, using commonsense and in accordance with all safety standards as set forth in the Academy of Model Aeronautics Safety Code. It is suggested that you join the AMA and become properly insured before attempting to fly this model. If you are just starting R/C modeling, consult your local hobby dealer or write to the Academy of Model Aeronautics to find an experienced instructor in your area.
Write to: Academy of Model Aeronautics, 5151 Memorial Dr. Muncie, IN 47302

BUILDING INSTRUCTIONS
Before starting to build this kit, we urge you to read through these instruction while reviewing the plans. They contain some important building sequences as well as instructions and warnings concerning the assembly and use of the model.
We expect that you have some building experience to take on a built-up model. However, every minute detail is not covered. This is not a basic trainer. The plans and instructions together with the laser cut parts, and the simplicity of this kit will allow you to produce a first class DOMINATOR 500.

BUILDING SUPPLIES NEEDED
Single edge razor blades
24" Sanding Tee w/ 80 grit paper
12" Sanding Tee w/200 grit paper
X-acto knife w/ #11 blade
Thin Zap CA
Medium Zap CA
Slow - Thick Zap CA
Zip Kicker
30 Minute Z-poxy
Laminating Z-poxy
Tee pins
Wax paper
Wire cutters
Pliers
Drill with bits: 1/16", 1/8", 5/32", 3/16"
¼-20 Tap and handle

See the list at the end of the instruction book for a list of additional R/C equipment you will need to complete the DOMINATOR 500.

1. Edge glue two sets of (3) 3/32 x 30" balsa top sheeting using white glue. Square the edges if necessary to assure good bonding. Align the sheets without gluing, then use masking tape to hold the sheets together on one side. Bend the sheeting at the tape and spread a small amount of white glue on the edges. Fasten the sheets back out and wipe off any excess glue. Weight the sheets down on a flat surface until dry. Sand the sheets smooth while on the flat surface.
2. Assemble the two sets of (3) 1/16 x 30" bottom sheeting in the same manner.
3. Trim the sheeting to approximate size, ¼ to ½ larger than the foam cores.
4. Prepare the cores by lightly sanding them with a 24" sanding bar to remove any fuzzies. Don't sand too much, the wing must meet minimum requirements for thickness.
5. Clean both the cores and the skins with a vacuum cleaner equipped with an upholstery brush to remove any dust.
6. Unroll the package of Dave Brown carbon fiber (DBHCFSP 5230). Be sure to read the precautions of working with carbon fiber on the package. Cut the CF into (4) equal parts, approximately 18" long, using sharp scissors. Clean both sides of the CF with alcohol. Mark the insides of the top and bottom wing skins with a felt tip pen for the CF location illustrated on the plans. Make sure you make a left and right set of top and bottom skins. Feel free to write the skins information on the inside with the felt tip pen, as it will not show through the balsa.
7. Apply a thin even coat of laminating z-poxy to one side of a top (3/32) and a bottom (1/16) wing skin. Use a squeegee or old playing card to spread the z-poxy.
8. Place a CF strip on the locations marked on the skin, then rub the strip down with the squeegee. Spread more glue over the top of the CF.
9. Place the bottom wing shuck on the flat sturdy surface, followed by the bottom skin, glue side up. Now align the wing core on the skin, followed by the top skin, then the top shuck. Press the assembly down and align the stack, making sure the balsa strips project around all sides of the cores.
10. Place at least 150 pounds evenly across the surface of the assembly. You can use books, magazines, or other weights. Let the assembly set over night before removing the weight.
11. Assemble the other wing in the same manner, making sure you make a left and right wing panel.
12. When dry, remove the wing from the shucks and sand all the sheeting flush to the wing cores, make sure you keep the center and outboard edges at 90 degrees.
13. Glue the 1/4 x 1/2 x 30" leading and trailing edge balsa to the le and te of both wings. Use white glue, spread thinly and hold in place with the masking tape every 2-3 inches. Leave tape in place until dry.
14. Examine the airfoil shape illustrated on the plans. Using a razor plane and a sanding bar, shape the le and te to match the diagram. A laser cut le template has been included to aid in shaping. Don't sand too much from the top and bottom sheeting as you need to maintain the 1-3/16" minimum thickness.
15. Locate the 2 pieces of tapered aileron stock and trim them to the lengths illustrated on the plans using a razor saw. **Note the different aileron lengths illustrated on the plans. The short 10" ailerons are meant for racing, while the longer 14" ailerons are for sport aircraft.**
16. Cut a 1/8" groove in the inboard sections of the aileron stock for the aileron torque rods (Carl Goldberg #402) Bend the rods to the lengths illustrated on the plans, then glue the outer tubes on the aileron stock.
17. Glue the inboard and outboard u pieces to both wings, leaving the indicated gap for the aileron.
18. Recheck that the outer sections of the wing halve are square, then check their fit together. You can use the bottom shucks to cradle the wing halves. Use 30 minute z-poxy to glue the two wing halves together. Hold in place with weights and tape until the z-poxy has fully cured.
19. At the location indicated on the plans, cut two 5/8 diameter holes through the top wing sheeting and the foam cores, but not bottom sheeting. Taper one end of the dowels to match the contour of the bottom sheeting. Trial fit the dowels in the

20. holes, and mark the dowels with a pencil at the top surface of the wing. Trim the dowels at the marks, then glue in place with 30 minute z-poxy.
21. Cut 4 pieces of the 2oz fiberglass to the 2 shapes shown on the plans. Using super77 spray glue, spray a light coat of adhesive to the 4 pieces of cloth. Position the top and bottom large pieces first, then the two smaller ones. Work out any wrinkles or bubbles as you go. Fasten the cloth to the wing using laminating z-poxy. Use just enough z-poxy to get the cloth wet, any more z-poxy just adds weight and does not add any strength.
22. Glue the rear wing ply plate at the location indicated on the plans with 30 minute z poxy.
23. Glue the wing tips in place using a mixture of 30 minute z-poxy and micro balloons. Hold in place with tape until cured, then sand the le and te of the tip to match the wing. Slightly round the edges of the wing tip.

Fuse
1. Locate the 4 pieces of the fuse sides, (2) front and 2 rear. Assemble the pairs at the finger joints, then align them over the plans. Glue with CA. Apply a second coat of CA to fill any gaps between the joints.
2. Turn one of the fuse sides over to make sure you assemble a left and right fuse side.
3. Locate the 1/32 ply doublers and check their position over the left and right fuse sides. Spread a thin coat of 30 minute z-poxy on one side of each doubler, then position on the left and right fuse sides, aligning the rear tab opening and the firewall notch. Weight these down on a flat surface until cured.
4. Sand a slight taper on the inside edge of the tail portion of the fuse sides.
5. Lay the two fuse sides together and align the tail edges together, then hold together with a piece of masking tape.
6. Insert formers F3 and F2 into the slots in the fuse and doublers with the arrows facing the top of the fuse, but do not glue yet.
7. Drill the firewall to match your chosen engine mount, then install (4) 4-32 blind nuts (Dubro #136). Secure with a drop of CA on each nut. Also drill holes for your fuel lines.
8. Align the fuse over the plans, then glue the firewall in place with 30 minute z-poxy, keeping everything aligned.
9. Now glue the formers in place with CA, and wick some into the joint at the tail.
10. Test fit the 2 wing blocks and the landing gear block on the fuse, and sand as needed. Glue in place with 30 minute z-poxy. When dry, pin in place by drilling, then inserting toothpicks into the blocks. Wick this CA into each toothpick to secure, then sand flush with a sanding block.
11. Glue block B1 to the bottom of the fuse, aligning with the firewall and the fuse sides.
12. Mark the location of the mounting holes on the gear as shown on the plans, then using a 19th bit, drill the aluminum gear. Mark the location of the aluminum landing gear on the landing gear block with a pencil, then drill a 17/66th pilot hole for the gear mounting screws.
13. Starting at the rear landing gear mark, sheet the bottom of the fuse with the grain 3/32 balsa left over from sheeting the bottom of the wings. ****FIT IS VERY IMPORTANT THAT THE FUSE IS SPREAD TO 2-7/8" WIDE **So not short the last 1 to 1-1/5" with balsa, instead short it with scrap light ply for the tail skid mount.**
14. Cut then glue (2) 3/8 sqr. Hardwood servo rails in the holes provided in the rear of the fuse. You may need to adjust one of the holes if you use servos other than standard size.
15. Glue a #11 hobby blade to the slotting tool (s1) on the outline shown.

Tail
1. For the standard tail, skip to step 6. For the v tail, locate the horizontal stab (T1) and cut it in half along the domed line, using a razor saw. Sand the cut joint to approximately 15 degrees on both halves.
2. Glue a horizontal stabilizer (hstab) tips (T2) to the outside edges of the hstab, aligning them at the front edges.
3. Use the S1 slotting tool to slot the outer perimeter of the hstab for the 64th ply. Slot the elevator halves also. Trim the 2*x 12"x 64th ply to 1/8" strips and slide it into the slots. Glue in place with thin CA.
4. Mark the perimeter of the tail and the elevator at ½" on the top & bottom. Sand the tail to a taper from the ½" mark to the edge of the 64th ply.
5. Glue the two tail pieces together at the center and form a 110 degree joint. Reinforce the top and bottom of the joint with a 2" wide strip of fiberglass and CA.
6. For the standard tail, glue the hstab tips (T2) to the hstab, aligning the front edges. Do the same for the vertical stabilizer (vstab) (T3) and vstab tip (T4).
7. Use the tool S1 to slot the outer perimeter for the 64th ply. Slot the elevator halves, the vstab, and the rudder. Trim the 64th ply to size and slide it into the slots. Glue in place with thin CA.
8. Mark the perimeter of the hstab, the elevator, the vstab, and the rudder at ½" on the top & bottom. Sand the tail to a taper from the ½" mark to the edge of the 64th ply.
9. Use a pencil to mark a line 1/8" from each side of the dotted line on the hstab.
10. Glue the vstab, centered on the hstab with 30 minute z poxy. Brace the vstab at 90 degrees until cured.
11. Remove the tail blocks from the rear of the fuse and trial fit the tail in place. Align the tail parallel to the centerline of the fuse. For the v tail, bevel the inside edges to set the surfaces in place. Glue the tail in place with 30 minute z poxy.
12. Fill the tail joint in with balsa. For the v tail, use a piece of the 3/8 triangle stock on the top of the joint. For the standard tail, use the balsa cut from the fuse sides. Fill either tail flush with the top of the fuse sides.

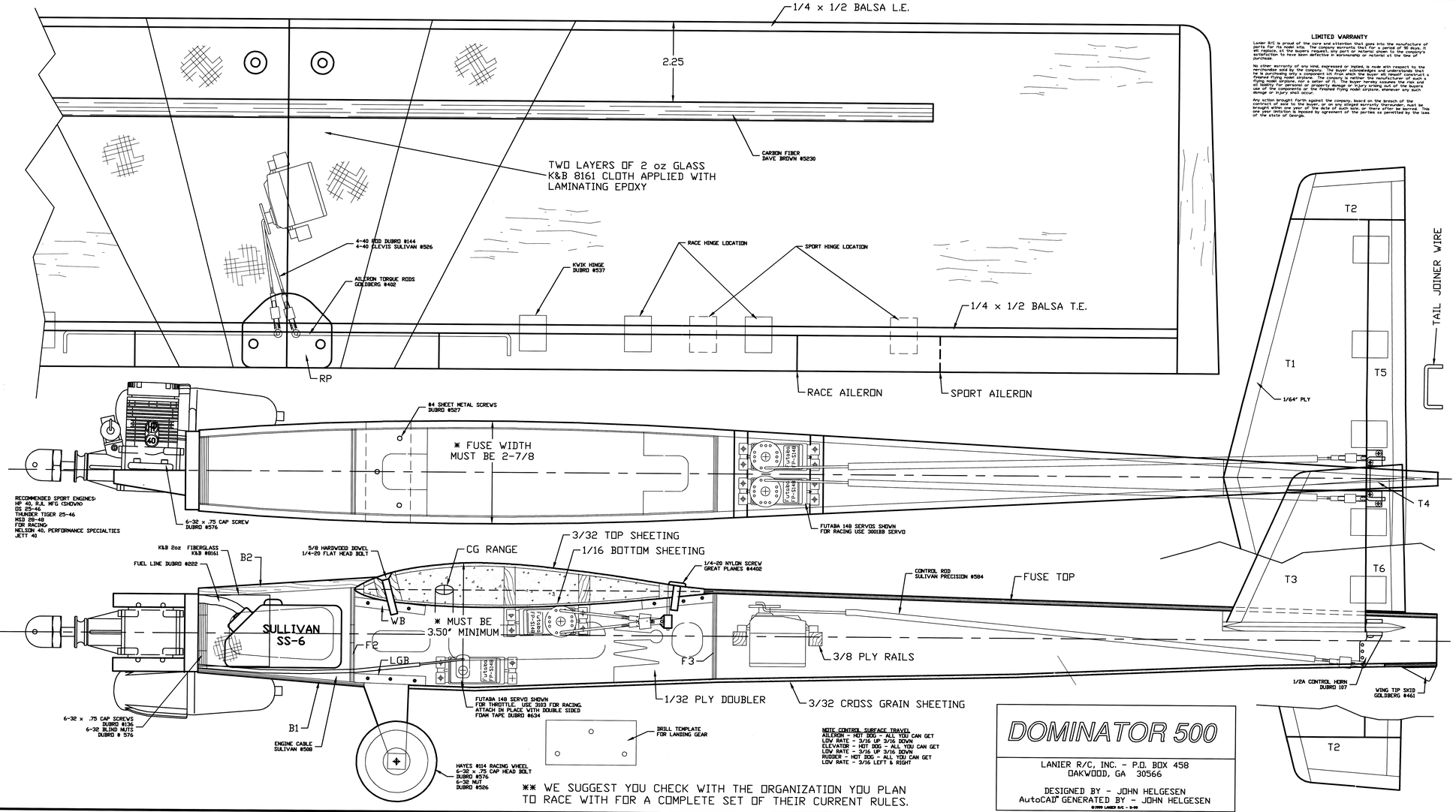
Final assembly
1. Align the wing on the fuse and measure that it is square. Adjust so that measurements from the wing tips to the point of the tail are equal. When all is aligned, clamp in place.
2. Drill (4) 5/32" pilot holes through the wing into the ply wing blocks. Remove the wing and thread the fuse holes with a ¼-20 tap. Drill the wing holes out with a ¼" drill. Counter sink the front 2 holes if you want to use flush wing bolts.
3. Reinsert the wing on the fuse using ¼-20 bolts (steel flat head in front, Great Planes GPMQ4402, nylon screws, cut back to 1-1/4").
4. Test fit, trim, then glue the light ply fuse cover on the rear of the fuse. Two are supplied, one for the v tail and one for standard. Make sure you leave a 1/32 to 1/16 gap from the te of the wing.

5. Test fit the fuse front block (B2) over the tank area of the fuse. Taper the rear edge so that it fits flush against the le of the wing. Trim the front edge even with the firewall. **DO NOT GLUE YET!**
6. Install your engine control rod (Sullivan #508) in the lower right corner of the fuse, getting it as far down in the corner as possible. It's very important that you install the control rod housing now, as you won't be able to install it after you install the tank.
7. Assemble the Sullivan 6 oz flex tank per the manufacturers instructions. Slide a 12" piece of fuel line (Dubro #222) through the two holes in the firewall, with the loose ends inside the fuse. Slide the fuel line on the brass lines for the tank, then safety wire the lines on the tank. Carefully slide the tank in place, while pulling the slack of the lines out of the fuse. Be careful not to crimp the fuel lines.
8. Now glue the block (B2) in place, being cautious not to glue the wing to the fuse or the block.
9. Cut (2) 2" x 6" pieces of fiberglass, then secure them to the firewall and fuse sides in an "x" pattern with super77, then CA.
10. Sand the fuse sides square with each other, being careful not to sand through the fiberglass on the nose. Using the corner template as a guide, radius the corners of the fuse, but remember to leave the firewall square. For racing the corners must not have more than a ¼" radius.
11. Trim and test fit the control surfaces, ailerons, elevators, and rudder (if used). Bevel the edges to a "v" shape.
12. Drill the ailerons and relieve a notch for the 3/32 aileron torque rods.
13. If you are building the standard tail, bend the 3/32 wire to the shape shown on the plans, and notch the elevator halves to fit the wire.
14. Test fit the surfaces on the tail and wing using kwik hinges (Dubro #537) but do not glue yet.
15. Now cover your plane with monokote or similar plastic covering.
16. Install the radio components per the manufacturers recommendations. There are many methods of installing the aileron servo. We recommend using two pieces of 5/32 dowel or say hardwood (from your scrap box) 3/4inch 2" long each. As shown on the plans, drill two holes in the bottom of the wing through to the inside of the top sheeting. Z-poxy the wood in place, then when dry, trim to height just above your servo.
17. Install the throttle servo on the floor of the fuse using 2 sided foam tape (Dubro #634).
18. Connect the aileron with (2) 4-40 control rods (Dubro #144), a bends at the servo horn, and 4-40 clevis (Sullivan #526) with the connectors included with the torque rods.
19. Connect the elevator and rudder servos to the tail with (2) Sullivan precision rods (Sullivan #584), 4-40 clevis, and 1/2a control horns (Dubro #107)
20. Set the control throws initially to +/- 3/16" for all surfaces. After flight testing, adjust as needed.
21. Set the eg to 2-1/4 to 2-3/4 from the leading edge. Keep the cg to the front for the initial flights, then adjust as needed.
22. Install the landing gear on the bottom of the fuse with (2) #4 sheet metal screws (Dubro #527), then the wheels (Hayes #114) with 6-32 cap head bolts (Dubro #576) and nuts (Dubro #502).
23. Double check that all bolts are tight and use locktite where needed, and double check the eg, then charge your planes batteries.
24. Remember to turn left and go faster.

ADDITIONAL EQUIPMENT NEEDED TO COMPLETE YOUR DOMINATOR 500
Engine
.32 - .46 Size two stroke R/C engine and muffler
Minimum of 4 channel radio set required
(4) Standard servos - *70 oz servo recommended for high performance airplane*
1 Rolls of Top Flight Monokote covering
Sullivan SS-6 oz flex tank
30 minute Z-poxy
Thin Zap CA (pink)
Medium Zap CA (green)
Slow Zap CA (yellow)
Zip Kicker

Hayes mount for your engine
Dubro #537 Kwik hinges
Dubro #144 12" 4-40 control rods (2)
Dubro #527 #4 sheet metal screws
Dubro #222 Medium fuel tubing
Dubro #634 Foam Tape
Dubro #514 ½" Foam rubber
Dubro #121 EZ connector (1)
Dubro #276 6-32 x 3/4 Socket cap screws (2)
Dubro #136 6-32 blind nuts
Dubro #562 6-32 nuts
(10) Dubro #323 #6 flat washers
Dubro #107 1/2A Nylon control horns
Hayes #114 racing wheels
Dave Brown HCFSP 5230 carbon fiber
Sullivan engine cable #508
(2) Sullivan 4-40 clevis #526
(2) Sullivan precision rods #584
Goldberg #402 Strip ailerons set
Goldberg #461 Wing tip skids
Great Planes #GPMQ4402 Nylon bolts
(2) ¼-20 x 1-1/2" Flat head bolts

DOMINATOR 500 PARTS LIST
Quantity Size
1 1/32 x 6 x 18 stirply laser
2 1/4 x 4 x 24 balsa laser
1 1/4 x 3 x 12 stirply laser
1 6 x 24 light ply laser
4 3/16 x 3 x 24 balsa laser
6 1/16 x 3 x 30 balsa
6 3/32 x 3 x 30 balsa
4 1/4 x 1/2 x 30 balsa
2 5/16 x 1 x 30 balsa tapered aileron stock (centered)
1 3/8 x 18 balsa triangle stock
1 1/64 x 2 x 12 air ply
2 5/8 diameter x 1-1/4 hardwood dowel
1 3/8 sqr x 6" hardwood servo rail
2 foam wing cores
1 aluminum landing gear
1 Elevator joiner wire



**** WE SUGGEST YOU CHECK WITH THE ORGANIZATION YOU PLAN TO RACE WITH FOR A COMPLETE SET OF THEIR CURRENT RULES.**

NOTE CONTROL SURFACE TRAVEL
AILERON - HOT DOG - ALL YOU CAN GET
LOW RATE - 3/16 UP 3/16 DOWN
ELEVATOR - HOT DOG - ALL YOU CAN GET
LOW RATE - 3/16 UP 3/16 DOWN
RUDDER - HOT DOG - ALL YOU CAN GET
LOW RATE - 3/16 LEFT & RIGHT

LIMITED WARRANTY

Lanier R/C is proud of the care and attention that goes into the manufacture of parts for its model kits. The company warrants that for a period of 30 days, it will replace, at the buyers request, any part or material shown to the company's satisfaction to have been defective in workmanship or material at the time of purchase.

No other warranty of any kind, expressed or implied, is made with respect to the merchandise sold by the company. The buyer understands and understands that he is purchasing only a component kit from which the buyer will assemble and build a finished flying model airplane. The company is neither the manufacturer of such a flying model nor plans, nor a seller of it. The buyer hereby assumes the risk and liability for all damages resulting from the assembly, flight, operation or other use of the finished flying model airplane, whether any such damage or injury shall occur.

Any action brought forth against the company, based on the breach of the contract of sale to the buyer, or on any alleged warranty thereunder, must be brought within one year of the date of purchase or be forever barred. This warranty limitation is imposed by agreement of the parties as permitted by the laws of the state of Georgia.

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LANIER R/C, INC. - P.O. BOX 458
OAKWOOD, GA 30566

DESIGNED BY - JOHN HELGESEN
AutoCAD GENERATED BY - JOHN HELGESEN

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