Vertical stab - This is a piece of 1/16 ply. Sand the TE to a sharp edge and round the LE.

Assembly
Pushrod and shutoff trip – The pushrod is made from 3/32 diameter music wire. It has an R/C type clevis with retainer on the elevator horn and is soldered after final control surface alignment to the pushrod connector on the bellcrank. I solder a small loop of 1/32 wire to the pushrod at the leading edge of the stabilizer. I then connect a piece of nylon coated 27# test fishing leader with a crimp sleeve. This leads forward into the tank compartment through a 1/16" diameter brass tube protruding about ¼" into the compartment. I finish this with a fishing tackle loop crimped on the end that attaches to the shutoff.

Landing gear & mount–
The landing gear strut is made from .080 thick Titanium sheet. A real pain to cut out but stronger and lighter than a comparable size aluminum strut. Just take your time with a hacksaw then finish with a file and belt sander. A very slow metal cutting bandsaw with the blade in backwards will work wonders with this job. If you have access to one try this trick, it's amazing. I bend the gear in a bench vise using a small bending fixture I fabricated from 3/8" diameter steel rods. Be careful to make the bends parallel to each other and to the centerline of the strut, any skew here will cause toe-in or toe-out of the wheels. Do not put a sharp bend in the gear. Titanium doesn't like sharp bends. I recommend using Glenn Lee flush hub wheels, although NEMESIS as built has the bushing type for axles. I used what I had due to the short building time available. The required two-wheel landing gear is to me an albatross around the neck, but at least all the competitors have the same albatross. With two wheels ANY misalignment of the gear means the dreaded "pilot looking at the crankshaft" syndrome occurs or a dragging wheel happens that turns the airplane into the circle on landing, or prevents the pilot from reaching his pit area. So be very careful about keeping the gear aligned with the fuselage centerline on final assembly. The bends in the gear also help alleviate this problem, the outboard strut is bent so the axle is ¼-1/2" higher off the ground. The landing gear plate is attached to support bulkhead then filled in around with balsa blocks that will be sanded to shape. Install 3- 4-40 BMNs on the plate to hold the gear before gluing it in place.

Cooling ducts and engine cowling - The lower engine cowling and cooling ducts are made by building up the thickness with sheet balsa cut to outline with the engine in place. Tape up the intake and exhaust to keep sawdust out. I build up with balsa to the 1/32 plywood that forms the top of the cooling duct. Glue together a pair of 3/8" sheets of balsa, layout the cooling ducts, then cut out the ducts shapes on a bandsaw. Coat the inside of the cooling ducts with a couple of coats of CA glue, sanded between coats. Then glue in place, keeping about 1/32" clearance around the crankcase fins. This makes a smooth fuel-proof finish. Add the 1/16" plywood cap.

Fuselage top and bottom - The fuselage bottom is ¼" soft balsa glued to the sanded edge of the fuselage sides.

Engine cover and canopy – The engine cover/canopy is made from three layers of ¼ balsa with a 1/16 plywood bulkhead to support the aft end of the canopy. I assemble this tack glued to the crutch, with the engine out. After carving the outside shape and fitting the canopy, remove it and relieve the inside to clear the engine and tank. Glue on the pilot's head and canopy with RC_56 or similar adhesive, then cover the canopy with masking tape to prevent scratching.

The fuselage top is soft balsa added after the canopy/engine cover and is sanded to match their contour. It has a 1/16 plywood bulkhead with plywood tongue to retain the aft end of the engine cover. I cut the slot for the plywood tongue last to insure a snug fit of the engine cover. Tack the balsa in place then carve and sand to shape, they can then be removed and hollowed out.

Fuel tank – The uni-flow tank is bent up out of K&S easy-solder tin plate. The fuel pickup tube and vent are located in the wedge on the outboard side of the tank, the vent at the top corner and the pickup at the bottom. Although NEMESIS as built has the fastfill on the top of tank, I have found since that angling the fastfill inboard at 45 degrees makes it easier to get to it in a pit stop. We are experimenting with using just a 1/8 dia vent tube for filling. So far it appears that not using a fast fill doesn't have a significant time penalty, and it eliminates a potential problem area.

Glo-plug hookups – The plug hookups have to be setup so that the pitman can get to them while he is refueling. There is a danger however, once the plug is lit, excess fuel flying around can be ignited causing a pit fire, embarrassing at the least. I have tried the "wing root" contacts as currently popular in TQR, but have found them to more often than not cause the airplane to yaw into the circle when releasing it for takeoff, this is not greatly appreciated by the pilot or the other pilots. I have had good luck using the shutoff end or the needle valve end as the ground with a braided wire from a contact on the outboard side of the fuselage attached to the plug with a wire clip.

Finishing - One of the advantages of using the press is that the wing and stab are almost all ready done. All they need is finish sanding, final color, decorations, and clear coat. The fuselage gets a layer of 1-1/2 oz cloth and epoxy resin all over with an extra layer around the engine cowl. The engine cover gets two layers of 1-1/2 oz cloth and resin.

Painting and finishing are not my forte'. I have figured out more ways to mess up a finish job than just about anyone on the planet. The appearance of NEMESIS and SPRNTR are completely due to the efforts of Ron Duly.