To enclose the batteries inside the bodywork, I needed some type of framework to which I could attach the "skin". Some 1/2" conduit would work, but would be heavier than necessary to simply support the body panels. I chose instead to use something a little unconventional. At the local auto parts store I picked up two 6 ft. pieces of 3/8" steel fuel line tubing. It's extremely light, easy to bend, can be welded, and it's hollow so I can drill it for pop-rivets.

I bent the 3/8" fuel line to the same shape as the outer bottom rails and cut them to the same approximate length plus about 1 1/2" on each end. I used the leftover pieces to cut a pair of uprights for each side. The front pieces are sized so that, measured from the bottom of the battery tray, they are 9" tall (the overall height of the batteries with terminals in place + 1/4"). The rear ones are 3/8" taller simply to give the finished side pods a little tapered appearance.

Using a cadre of measuring tools and a lot of "calibrated eyeball", I located and welded the vertical pieces in place. Then, using some masking tape to help me hold the top tubes in place, I trimmed and fit the ends. Once satisfied with the overall fit, I welded them solidly in place.

Attached Images


I made the seat pan out of a piece of thin gauge aluminum diamond plate. I used this sturdy material because this piece supports a lot of weight when the driver is climbing in and out of the car. To lighten it a bit more, I cut a series of holes in it with a 1 7/8" hole saw. I attached this to the bottom of the frame with 3/16" pop-rivets spaced about 5" apart across the back and down both sides. I left the front edge unattached for now; it will be riveted simultaneously with the front floor pan.

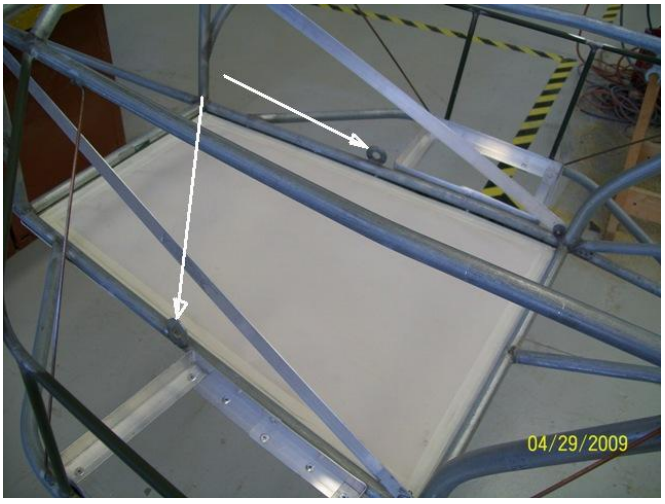
The last little bit of fabrication is to weld in a couple of heavy duty washers for seat belt mounts (see arrows). I located these by climbing into the car one more time and marking the approximate location of my hips.

Finally, one can of Rustoleum gray auto primer and five cans of Krylon gloss white later, I have a completed frame ready for bodywork.

Attached Images


04/28/2009


04/29/2009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Next step: making and installing body panels. For this I am using aluminum "Kick Panel" material available at Lowe's and Home Depot. It is found in the area where they have the screen enclosure stuff for patios, etc. It is available in a dark brown satin finish or gloss white. The aluminum material is .024" thick, 16" wide and 16' long. I just went back for a second roll... I am using white; that's why I painted the frame white. I may give this car a different paint scheme in the future, but for now I'm sticking with the white.

Working with the bare frame simplifies making and installing some of the body panels. Before I put all the wheels and steering hardware back in place, I made and installed the front floor pan and the two long side panels. The floor pan was pretty straightforward; I simply cut a piece of aluminum to the measured length, laid it on the bottom of the frame, marked the edges with a washable marker, and cut to fit. I installed it with 1/8" pop-rivets 3 1/2" apart.

The side panels are not so easy because of the intricate shape. For these I made a pattern from poster board. I taped two sheets end-to-end and then cut them to 16" wide to replicate the size of the aluminum. Using masking tape as my "extra hands", I tried and trimmed the pattern until I was satisfied with the fit. When I got it to fit one side, I took it to the other side to see if it would fit there. There was only a slight difference in length at the very rearmost edge, probably caused by a small difference in the side pods somewhere; not bad for a hand-built structure!

I transferred the pattern to the aluminum with the washable marker and cut it out with tin snips. This time, I held the side panel in place with strips of duct tape. Although the picture shows masking tape, the darn stuff wouldn't hold long enough for me to get the rivets in place. I started at the front axle area and worked back, putting a 1/8" rivet about every 5 to 6 inches. No need to go crazy with the rivets here; these panels are more cosmetic than structural.

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