

## SPIRIT OF PASHLEY



When I was in school, I received a ride in a hand built sportscar special powered by a two stroke Mercury boat motor. Ever since then, I have dreamed of building a race car with a similar spirit. Four years ago I decided that the Sports Car Club of America's D Sports Racer class would allow me to finish that dream and finally here it is!

My goal was performing as much of the fabrication, welding, bodywork and painting myself, as I could.

The engine is an essentially stock Honda CBR 900RR (Fireblade) - chain drive allows me to run at 900lbs versus 1000lbs for transaxle cars. An external oil filter and Accusump accumulator were added to the lubrication system. The final drive is "locked" with no differential action and uses an elegant bearing carrier sourced from Omni Fab.

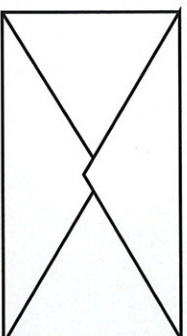
For ease of fabrication, mild steel 3/4" square tubing was used for most chassis and suspension members. Aluminum sheet was bonded and riveted to the chassis to provide a stressed skin and was used elsewhere for a floor pan and front and side crush structures. The front bulkhead was 1/4" thick aluminum plate to allow direct mounting of the steering rack.

Pull rod type suspension was chosen for adjustability and to permit a lower shock location. Roll center location is fairly typical for current race car design. Koni shocks were chosen as a less expensive alternate to Penske. Uprights are steel and fabricated for strength rather than light weight. Brakes are Wilwood four piston calipers with Coleman discs.

The body shape was developed out of a desire to minimize the quantity of molds. The same mold is used for the front and rear halves of the car with only the location and size of openings changing. The body is a wet layup of fiberglass cloth and epoxy. There is also a front splitter with diffuser. The wing is a foam core with fiberglass covering. All aero was refined in the intuitive tunnel.

For the curious; I doubled the budget, exceeded the schedule by 30 months and exceeded the weight goal by 80 lb. The name of the car is based on one of my favorite old television shows, The Prisoner.

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## AKERMANN AGAIN

I fabricate a lot of front suspensions for saloon cars and encounter the problem of achieving Ackermann in just about all cases. I have found that if you plan your steering arms as per Allan Staniforth's Sketch 2 in the June/July issue, the rack needs to lie slightly rearward of the line of the tie rod end, ie 3-inch steering arm - 2.5 rack position. This will give you around 20 degrees turn on inside wheel, 18.5 to 18-degrees outside wheel.

If the rack is mounted as little as 3-inch in front from the track rod end, you have the effect you found-

20 degrees inner, 22 degrees outer do my initial layout trying to get the steering arm to the rod at no more than 90 degrees - make some temporary steering arms and test the steering on wheel alignment tumblers. I can then fiddle with the arm to obtain the desired inner to outer wheel difference in degrees.

When you look at the picture of your steering arm/ tie rod - the first holes look slightly more than 90 degrees - the 200% hole say about 85 degrees and the 250% hole maybe 75 to 70 degrees. It would be interesting to see turnable results at all three positions. On a saloon car it is hard to obtain much more than 10 degrees difference as the rack and steering arm are closer to the bottom outer ball and the steering arm finds the brake disc in the way.

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