



# Building A Race Car: Part 5

*Puttin' on a pretty face for race day*

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**G**raphics and paint, unlike chassis and components, have changed drastically over the past 20 years. Three individuals can take credit for the look of modern race cars.

The first is Richard Petty. As a young racer, I can remember The King's car changing year to year with a signature color scheme, but with different graphics packages. In 1980 at a test session at Daytona, a Petty Dodge Mirada caught my eye. With an appreciation for artistic talent, I realized the workmanship and preparation that was necessary to produce this masterpiece. The paint looked two inches deep. The body lines and body work were perfect. Even the interior paint had a brilliant shine. This car demanded awesome respect.

Later, while working for Curb Motorsports, I saw how important the look of the car was to Petty. He always had the final say in how stripes and colors were placed. At just a glance, Petty could tell you what year each graphics package was used. Richard Petty's cars brought NASCAR to a new level, not only in workmanship, but in

giving national sponsors an exciting visual package. Soon all owners set out to outclass each other in workmanship and visibility, using the Petty Enterprises cars as benchmarks to measure success.

The second person who had a major hand in this evolution was John McKenzie at Motorsports Designs. McKenzie's silk-screened graphics allowed many sponsors to take corporate logos and apply them successfully to race cars and haulers. Many color combinations could be applied and then overlaid with graphics material for perfect duplication of logos. McKenzie's own desire to race sparked the gamble to invest in the uncharted waters of professional motorsports.

Today, Motorsports Designs is responsible not only for sharp image race cars, but for the haulers used in Winston Cup. The images on these haulers are screened on large vinyl strips that are applied in sections to the flat sides of trailers. Rolling billboards and wild graphics packages help fans identify immediately with each team and driver.

Sam Bass is the third person who changed the images on race cars. The artist known for paintings of on-track action took his talents into the Winston Cup world when he designed many of the paint schemes used on the cars in the movie, *Days of Thunder*. After sponsors show interest, Sam Bass takes logos and business colors and turns them into colorful combinations. Many teams, including Dale Earnhardt Inc., Hendrick Motorsports, Joe Gibbs Racing Inc., Bill Elliot Racing and Team SABCO, use Bass' services. The images on race cars are then reproduced for many products such as die-cast cars, hats, and T-shirts, which promote the driver, team and sponsor.

Now let's go to work. After all the bracketry and body panels have been welded to the chassis, preparation to refinish starts. The exterior and interior are bare metal panels, which have to be prepared both mechanically and chemically. When using mill steel for construction, workers coat each piece lightly with oil to guard against oxidation. This makes cleaning cru-

cial. As a first step, most teams use strong degreasers and steam cleaners to remove oil and dust from the panels and the interior.

Many paint manufacturers suggest the use of strong self-etching primers to insure the adhesion of paints to panels. After priming chassis and body panels, body filler is applied directly over spot-welded seams and counter-sunk rivets to make the exterior body appear as one piece. The time spent earlier in developing perfectly shaped panels eliminates hours of body filling. After sanding and filling, templates are checked thoroughly to be certain all tolerances are met.

Once this inspection is complete, the exterior is primed with a high solid filling primer. This primer fills imperfections in body filler and allows the car to be blocked completely smooth.

The next step, again, is to wash the interior and exterior using warm water with degreasers to remove the hand prints or dust left while working.

Now the car is moved from the prep area into the paint booth and exposed to 130-degree temperatures for 30 minutes to dry every overlap, crack and drilled hole. The exterior panels are now taped up completely, which allows interior panels to be exposed for refinishing.

The interior painting is difficult. Visualize the body in place with a maze of roll bars and bracketry. Many areas can be reached only by overspray, because direct spray cannot reach these areas. Interiors are sprayed with polyurethane or acrylic enam-

els for slick brilliant shines along with durability and repair-ability.

Many teams today opt for powder coating the interiors rather than face the difficulty of refinishing inside. Interiors take about three gallons of reduced material, which gives between five and 10 mils (millionths of an inch) of coverage. Reduced material weighs about 30 pounds, but the total weight gain realized on a complete interior is only about 7.5 pounds. With interior color applied, drying is finished by oven baking for 30 minutes at 130 degrees.

After a cool-down period, the car exte-

rior is untaped and the interior is then masked tightly, assuring no holes. Over spray can venture through the smallest of holes and can dull interior finish, so skirting and sealing a car to the ground is necessary to retain interior gloss. Once masking is completed, exterior panels are hand-washed using a final prep solution in order to make sure no contamination will affect exterior refinishing.

Once the car is cleaned, a light coat of two parts epoxy sealer is applied. Then top-coat colors are sprayed on, starting with the smallest covering color. This color is then



*Above: A maze of brackets and bars makes painting the interior a tough job. Notice the finish is bright and slick. Left: In the prep area, skirts of masking paper control overspray.*



The light colored area on metal is body filler, which is skim coated lightly just to cover spot welds. Below: The McDonald's Taurus changes color each season. The black roof area is painted first, then taped for the application of red, yellow stripes and finally graphics.

force-dried for 30 minutes, taped off and the next color applied. After all the colors are applied and dried, each color is systematically untaped, leaving the base coats ready for the top clear coat.

The base coat/clear coat system simplifies painting, allowing workers to apply as many as six colors with a clear top coat in eight hours. After force-drying, clears are color sanded using D/A-sanders and 1,500 grit paper to remove all surface imperfections such as lint, orange peel and sags. The top coat is then buffed to a brilliant finish, giving the illusion that the paint is several inches deep.

Many weight-conscious crew chiefs

feel that the process described adds weight to the total static weight of the car. At the finish of the top coat, sonic testers visually realize close to 17 mils (millionths of an inch) of finish, but within three days of refinishing, testers show 11 mils of finish. Tests have shown that all the paint and material used in a Winston Cup car add a total of 20 to 25 pounds. Total material cost for the average paint job is around \$1,700. That's a long way from the Wagner Power Painter and Mary Carter!

Graphics packages are generated from artist renditions and normally are applied by starting with stripes or colors used as backgrounds. Once placed in location with

tape, each decal is stripped of backing and sprayed with water. As the location of each is finalized, the water is squeezed out using a plastic applicator. After the total package is installed, contingency decals supplied by NASCAR are placed on front fenders using a diagram for location. With all decals in place, the car is hand-washed with glass cleaner and waxed, ready to do battle.

On the battlefield, drivers sometimes get hurt. Jerry Punch, TV commentator and medical doctor, once said at a driver's meeting at Charlotte: "When your driver goes 200 mph, his brain and internal organs also travel 200 mph."

Next month, safety's our subject. 🏁

