



**1** The basic idea for this build was based around this Monte Carlo built by Mark Davis in the mid-'80s. Though it was an actual racecar built for the NASCAR Sportsman series, and the Smokin' SS car is a street car, the two share many traits.

# SMOKIN' SS:

## PART 2

### Mark Davis and the Crew Build Custom Body Panels for the Smokin' SS Monte Carlo

Last month we introduced this Smokin' SS project and tracked the initial steps of its construction. As expected, work has progressed to the point where we saw a huge change in the overall appearance of the Monte Carlo, as the crew modified and fabricated the entire body on this outstanding street car.

No panel has been left unaltered, as the guys have kept a steady pace and have made considerable progress with each day of work. When Davis worked on racecars for NASCAR, notes were taken on aerodynamic advantages, and those notes from the wind tunnel came in handy when it was time to fabricate the body panels for this Monte Carlo. Strict regulations kept builders from going all out with their Monte Carlo bodies, but this car will not be limited by a series of templates. Every aerodynamic advantage will be used, including a chopped top, a lowered front bumper and more-rounded fenders. It will cut through

the air far better, and with plans for Bonneville and the Flying Mile competition, Davis wants this car to be stable at its top speed—which he hopes to be well over 200 mph. No fiberglass will be used on the car, but a urethane front bumper from Mike's Montes will be used, and aluminum will be used for the decklid and rear bumper. Davis expects the Monte Carlo to weigh in the neighborhood of 3,000 pounds, so every step will be taken to lighten the car while retaining its integrity and strength. This aspect of the build required Wilson and Keys to show their true dedication, as it was an extremely extensive lesson in sheetmetal work. Sheets of steel

suddenly turned into quarter panels, door skins and front fenders, and much of the work involved the use of Davis' own line of Metalcraft Tools. The crew spent only a few weeks on the entire body, yet created a one-off machine that will never fail to grab attention. During this time, they also worked on other aspects of the build. We like the racy appearance, and it will undoubtedly help decrease drag and add downforce where it counts. Take a look at the extensive body modifications and fabrication on the Smokin' SS project car, and don't miss the next installment, which will include the design, construction and installation of a number of unique suspension components. In this installment, see how the folks at Metalcraft Tools SkillCenter built the aero-friendly body for the Smokin' SS Monte Carlo. **CR**

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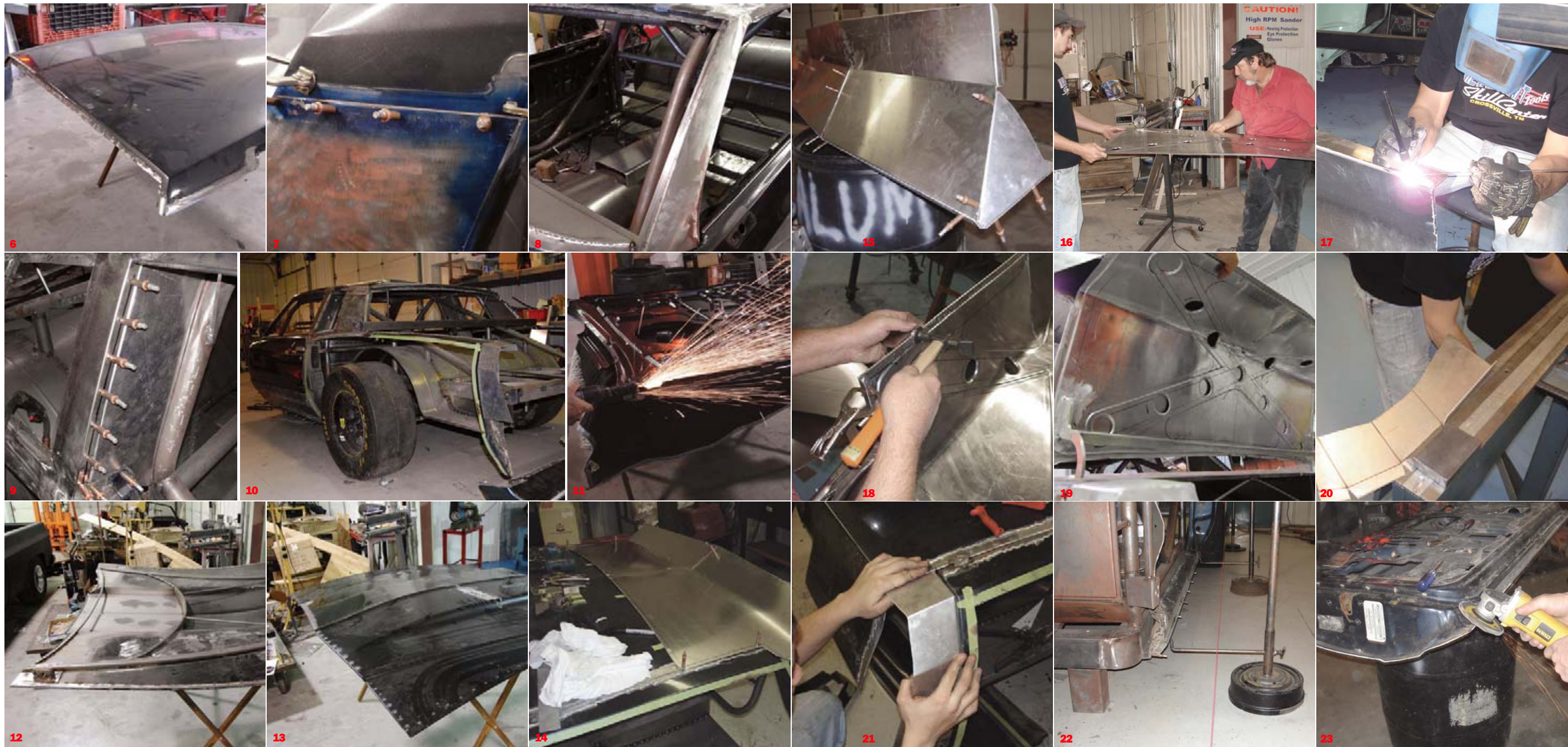
**2** With the main chassis assembled, the crew at Metalcraft sat the hulled-out body in place and held the original decklid in place with a few custom stands built by Davis. This decklid will not be used, as the plans call for an Aero coupe back-glass and shorter decklid.

**3** After adjusting the body and lining everything up, it was time for the first major body modification on the Smokin' SS Monte Carlo. With a reciprocating saw in hand, Daniel Keys made quick work of the A-pillar, which will be modified later to help airflow.

**4** Within about 20 minutes, Keys had the top removed and sitting on a stand. The top will be chopped 2 inches and the B- and C-pillars will be moved inward 2 inches. This will greatly reduce drag, especially when the new A-pillars are in place—they will be laid back to a 40-degree angle.

**5** Keys and Wilson wasted no time disposing of the original Monte Carlo body panels as they removed the quarter panel skins from the car. The only portions of the body to be retained are the majority of the roof, the tops of the quarter panels and a small section of the doorjamb.



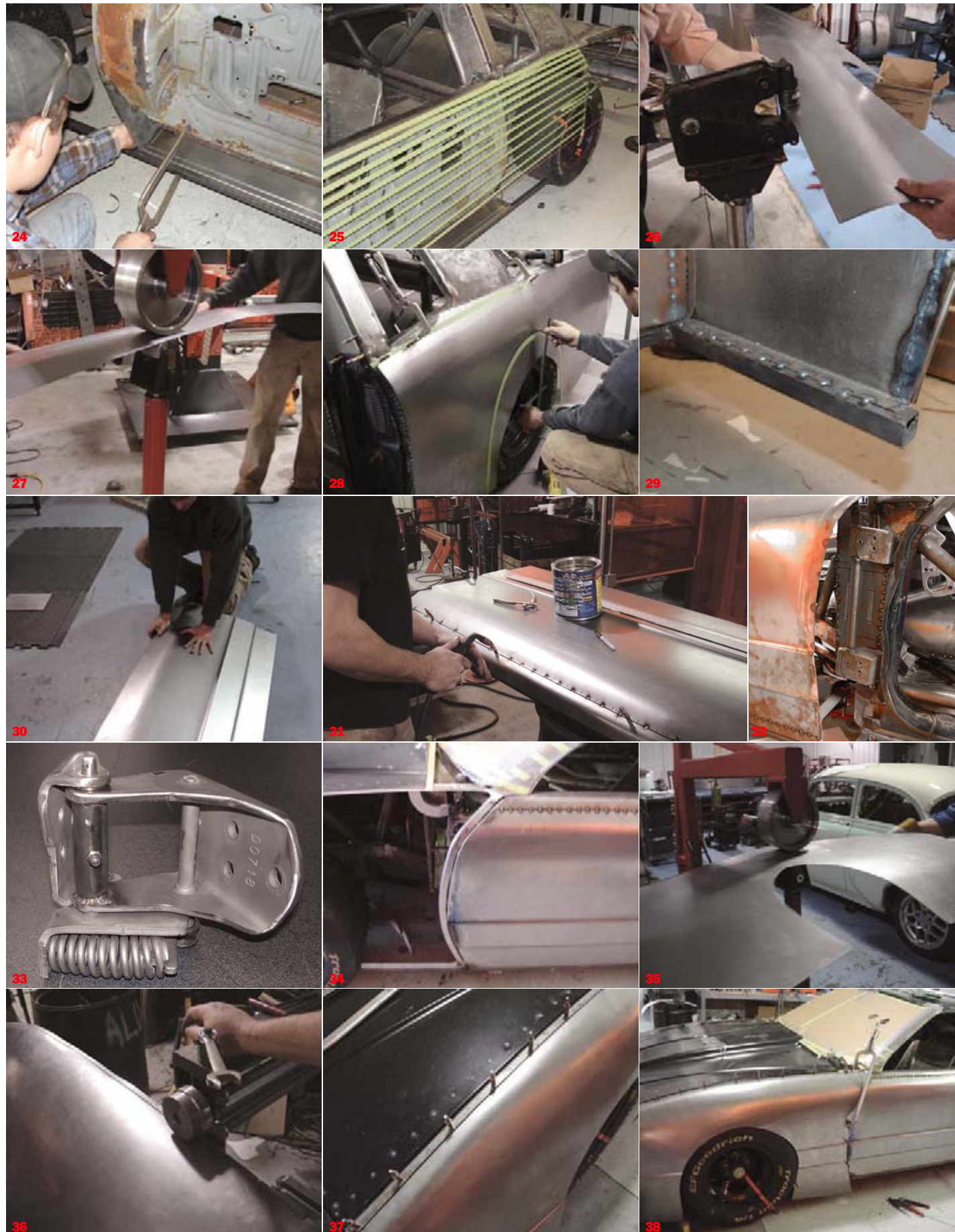


**6** With the top on a scissor stand, the guys could prepare the roof for reinstallation and welding. The roof will remain unaltered, but the lowered profile will be great for cutting through the air at high speeds. The provisions for the original rear window will be altered to accommodate the Aerocoupe-style rear window.

**7** Using a flange tool, Keys and Wilson stepped the upper portion of the roof and slid it behind the tucked pillars. This makes for a strong bond between the two panels and allows the guys to use Cleco fasteners to hold the two pieces together. **8** The original A-pillar design would be fine in most cases, but Davis plans to run this car over 200 mph, so every aerodynamic advantage was used. These pillars allow air to pass smoothly around the windshield, and they look cool, too! **9** A new B-pillar was formed from flat steel and welded into place—just another step to make this once-boxy Monte Carlo cut through the air much better. The new pillar is already in place, and the Cleco fasteners you see hold the filler panel between the roof and the rollcage. **10** Though it barely has any original Chevrolet steel on it, this Monte Carlo is taking on a much sleeker look. The chopped top looks great, and the students are about to jump headfirst into their extensive lesson on body fabrication. **11** When the cowl induction hood arrived from Tri-Pro Automotive, work quickly began to remove the inner structure. This will reduce overall weight and allow Keys and Wilson to arch the hood for better aerodynamics. **12** A simple design with rectangular tubing will keep the hood from flexing, while also keeping the front end light. Steel follows the outline of the hood to make it sturdy, and the hinge mounts are welded into place. **13** Originally, the Monte Carlo of this generation has a basically flat hood, but with the lowered nose on this car, it was imperative to arch the hood. It not only reduces drag, but it also gives this car a distinctive appearance with its sleek lines. **14** Out back, the original decklid was discarded and the crew formed a new one from aluminum. It will incorporate a 35-degree spoiler into the design, and what you see here is only the outer skin—the entire panel will be made of aluminum to reduce weight.

**15** The rear panel for the decklid was bent and clamped into place with Cleco fasteners. The side filler panels were also clamped into place, but final trimming and fitment is still in order before the panel is welded together. **16** Davis helps Keys with the decklid's inner structure. A bead roller with a step-die is used to create the raised design, which looks cool and adds strength. Check out those flared holes—just another race-inspired detail that reduces weight and looks great. **17** With the inner panel fabricated and trimmed to fit, the outer skin could be TIG-welded. This decklid is an extremely close replica of the Aerocoupe panel used by NASCAR racers in the '80s. However, it has a built-in spoiler, which would not have passed tech inspection back then. **18** When both panels were finished, the outer skin could be attached to the inner structure by folding the lip over the inner panel, just as the factory did. Using a hammer and dolly keeps the panel straight, which will help when it comes time for bodywork. **19** The custom hinges were milled from aluminum stock and work nicely to support the ultra-light decklid. The completed design looks awesome and the panel gaps are immaculate, especially considering the amount of fabrication involved. **20** The Chevy Monte Carlo originally had quarter-panel extensions, which also served as a taillight housing. Here, Keys uses the metal brake to form a new extension from aluminum. Notice the pie cuts and the small die for the brake. **21** This aluminum quarter-panel extension is made separately from the rear bumper, but once both panels are completed, they will be welded together—that's right, the rear bumper will also be made of aluminum. **22** The rear bumper will be formed later, but for now, it's time to build the main body panels for the Smokin' SS project car. To do so, Davis and the students use custom adjustable stands to pull a line from front to back. The square tubing used for the lower body support will be mounted 1 inch inside of this line. **23** To accurately measure and plan for the new body panels, the original door skins will need to be removed and the inner structure will be mounted to the car. Here, an electric angle grinder is used to grind away the steel where it's folded over the inner panel.



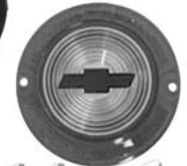


**24** With large Vise-Grip locking pliers, Wilson clamped the inner door skin to the lower body support, built with square tubing. Now, Wilson and Keys can begin construction of the outer body panels. **25** After building the square-tube lower body support to Davis' specifications and mounting the inner door structure, the students stretched 3M 3/4-inch tape across the side of the car. The tape is connected to a temporary strip of steel that mimics the basic design of the body panels. **26** Starting with a flat piece of steel, Davis and his students form the rough outline of the quarter panel. Obviously, lots of work will go into shaping these body panels, and it will need lots of trimming to fit perfectly. **27** While the power hammer forms the panels with ease, it leaves them wavy, so the guys pass the new panel through a Metalcraft Tools English wheel to smooth everything out. Wilson and Keys are quickly learning about body fabrication, as Davis guides them through the process. **28** After shaping the quarter-panel skin and trimming it to fit the body, Keys trimmed the wheel openings by measuring from the center of the wheel to obtain the correct radius. Of course, the finished lip will be made separately and will have a rolled edge. **29** From the inside, it's easy to see how the body was attached to the floor pan. Square tubing makes a nice platform and the new body panels feature a 90-degree bend on the bottom to make for simple attachment with the MIG welder. **30** Rather than running it through a roller, Davis and the students used a roll of 3M masking paper to shape the door skins. They did, however, use a brake to create the cool body-line that will run the length of the body. **31** When Wilson and Keys matched the shape of the quarter panels to the door skins, it was time to attach them to the original inner door structure. An upper panel was made first and the main door skin was welded into place after trimming and fitment. **32** For hinges, the guys opted to retain the original design, but update and strengthen it. The hinge plates are tied in to the chassis and rollcage for strength, and the actual hinges were modified to prevent sagging, which is a common trait of G-bodies of this vintage. **33** The doors on a Monte Carlo are heavy and long, so bushings are quick to go bad, but the Smokin' SS project car needs no bushings with this modified hinge design. Notice the grease fitting on the new hinge-pin tube. **34** With the door fit into place, work could begin on the front fenders. The first step is to fabricate the perimeter. This allows them to get the panel gaps just right, and then worry about building the actual fender. **35** The process for building the quarter panels is repeated to fabricate the front fenders, so the students take charge and create a fender that fits their specifications. Here, it's passed through the English wheel after being shaped with the power hammer. **36** One difference between making the quarter panels and front fenders is the way these panels are attached. For the front, the perimeter is already there, so the edges will need to be flanged to make for a flush fit. A bead roller with a step die is used to flange the edges. **37** The trimmed and fitted fender is clamped to the perimeter. The use of Cleco fasteners allows for access to the actual joint, so welding is an easy process. This panel looks great and lines up nicely with the modified hood. **38** With the panel clamped in place, Wilson and Keys could inspect the fit of their newly fabricated fender and see what needed to be trimmed. They've already shaped the wheel opening, but the lower portion of the panel needs to be trimmed.

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39 We mentioned the front bumper would be positioned lower than stock to reduce drag, but we didn't realize how much it would help the appearance of this Monte Carlo. The urethane bumper came from Mike's Montes and mounts to the chassis with round tubing supports. 40 Moving on to the other side of the car, the students test fit the front fender for the first time. Sure, it's got a long way to go before it's finished, but the fact that these panels are being formed from flat steel is amazing. 41 Now that the top of the front fender lines up with the perimeter, the guys can work on making the body lines and trimming the lower portion to fit. At this point, the Smokin' SS Monte Carlo is really taking shape. 42 The hood hinges on project Smokin' SS are simple and effective. It bolts to the body, thanks to a tab welded to the chassis, and bolts to the hood with three Allen-head fasteners. 43 Now that

most of the body is complete, work can continue on the rear portion of the car. Here, Davis and the students use a template to form the aluminum rear bumper to the desired shape. A handrail seems to do the trick. 44 After shaping the rear bumper and welding it together, Keys took the quarter-panel extensions he fabricated earlier and welded them into place. The entire assembly is extremely light and will bolt into place after the tubular supports are built. 45 With the rear of the car assembled, you can see what a huge difference these new body panels make to the appearance of the Smokin' SS Monte Carlo. In addition to looking awesome, the aluminum decklid and rear bumper assembly will save a ton of weight. 46 We touched on the fact that Davis and the crew would be converting this conventional Monte Carlo into an Aerocoupe, and here's how they'll do it. They simply welded a frame to the specifications of the Aerocoupe rear window and filled in the package tray area with bead-rolled steel. 47 While building the body panels was a difficult task, it was all the detail work that proved to be time-consuming. The guys fabricated each wheel-opening lip and the internal bracing to keep it all steady. Also, check out this sneak peek of the custom suspension under Smokin' SS. 48 Though most of the body is assembled, there are a few details to be completed and the Monte Carlo can be disassembled for bodywork and paint. Next month, we'll see exactly what it takes to fabricate custom suspension components and attach them to this awesome machine.



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