

*The original R-Model
was hurriedly built with a deadline looming.
It had a few rough edges and wrinkles.
Fifty years later Peter Brock went back,
knocked off some of the rougher edges
and massaged out some of those wrinkles.
You don't often get to do that with a race car.*



ONCE MORE WITH FEELING

– Peter Brock

It's been fifty years since Ford President Lee Iacocca called Carroll Shelby, asking for help in getting the '65 Mustang fastback approved for SCCA racing. The Westport pharaohs in charge of car classification had refused Ford's request to homologate the Mustang because they didn't consider it a "true sports car." Among their reasons was the fact that it wasn't an open roadster, "like a real sports car" and there was also this other "major problem"—it had four seats. After Shelby's brief conversation with Iacocca, who explained the SCCA's reasons for rejecting its classification, the Texan hung up and immediately called John Bishop, who was then head of the club in Westport, Connecticut. Shelby was a personal friend of Bishop's and had considerable media clout, having won LeMans in 1959 as a driver and the SCCA's own USRRC title with his Cobras as a manufacturer in 1963.

Shelby suggested to Bishop that the Mustang's rear seats could be removed so it would qualify and better yet, "Ah'll build 'em here in Venice," he drawled in his best

country boy accent, "and you kin classify 'em BP with the Corvettes. It'll make some great racin'." Bishop approved and the race was on....with the clock.

The first possible race of the season to test Ford's new "Shelby Mustang" would be at Green Valley, Texas. That was just weeks away and a whole new image had to be created...not to mention the actual engineering! Some suspension development had already been done with the square-back Mustangs, but Iacocca had said he wanted something "really distinctive," both in performance and appearance, to launch this latest iteration of what would eventually become a lasting Ford icon in terms of performance and visual identity.

Under the existing SCCA rules, not much could be done in terms of modifications to the engine and chassis unless a specified number were built that incorporated all the necessary factory-installed modifications to make them SCCA legal. Shelby's team of advisors wisely told him to be sure to order the new coupes equipped with Ford's latest 289 High Per-

formance V8 with the "export package" which would insure some integral stiffening for the chassis.

One of the major changes contemplated was a full independent rear suspension. Klaus Arning, then head of Ford's chassis design/development programs, was well equipped technically and mentally ahead of the desired performance curve. He and his team had already done the GT40s' complete geometric layout (based on Eric Broadley's basic design for the MK6 Lola coupe) and the 427 Cobra roadsters' complete chassis redesign of Shelby's archaic AC 289 snakes, so he was well versed on what might be needed to make the new Mustang into a great on-track performer. What made Arning's work really unique was his ground-breaking use of a computer to plot the desired movement of all the suspension components, a real first in the industry.

Arning had already devised a relatively simple performance enhancing geometric modification to the Mustang's front suspension. This required only some slight

repositioning of the upper “A” arm mounts so there was little resistance from Ford’s financial managers in getting approval for the front end. But his whole independent rear suspension concept, which was far more complex than the stock live axle, met with some serious resistance. Not only were the new IRS components going to be expensive to put into limited production, but the projected install time was considered too lengthy and not ideally suited to Shelby’s rather simple operation. Instead, a less complicated modification, involving a Panhard and track rods to locate the Mustang’s live rear axle was devised and approved, mostly because it was cheaper. The trick IRS wouldn’t be the racy Mustang’s first radical idea to get scrapped.

Not surprisingly, Shelby’s veteran racing mechanics and fabricators weren’t too thrilled with the Texan’s unexpected announcement that they’d soon be building dozens of Mustang “production cars.” They’d spent the previous two years building and racing the Texan’s slick Cobras with top drivers like Ken Miles, Dave McDonald, Bob Holbert and Bob Bondurant. The Shelby team had dominated and won the United States Road Racing Championship. The whole idea of building the Mustangs seemed like a step backward. In the interim months of 1964 Shelby had brought in the team’s exotic, mid-engined, Cooper-based “King Cobras” for that year’s USSRC and looming Can Am battles. In addition they’d also built and raced the first of six Daytona Cobras, which would go on to win the first FIA World’s Championship for an American manufacturer. The prospect of doing dozens of these cookie-cutter Mustangs for SCCA “club racing” was hardly appealing to these race savvy veterans. Instead they were looking forward to something even more exciting... the GT40 and maybe even an Indianapolis car!

The grumbling was heard upstairs, so the answer was to find some new talent without any preconceived notions about the Mustang project. Chuck Cantwell was hired in from GM Styling’s engineering operation as chief engineer and project manager, while ace fabricators Jerry Schwartz, Mike Sangster, Peter Bryant and Jim Marietta came on to head up what would be the new production team under crew-chief Ted Sutton. Ted had worked with the race team on a variety of projects including the first 427 Cobra and prototype Sunbeam Tigers so he was well qualified to head up the new Mustang team.

As the first semi-stripped Mustangs began arriving en-mass at Shelby’s Venice, California facility, the enormity of the proj-

ect became apparent. A move to the cavernous LAX hangars was required. There were Wimbledon White Mustangs almost as far as the eye could see stretched along the blast wall next to the airport’s southernmost runways. In a few short months Shelby’s operation had evolved from a tight little operation of less than a dozen people in a small Venice race shop into a full-fledged manufacturing facility for Ford’s hot-selling new Mustangs in El Segundo, next to LAX airport.

My responsibility on the Mustang project was to create a new “performance image” for the cars. As Director of Special Projects for Shelby I’d created the special “look” of everything from corporate stationary and magazine advertisements for the Cobras to actually designing the Daytona Coupes. Prior to hiring on with Shelby I’d worked at GM Styling so the prospect of modifying the Mustang’s appearance with some sort of “competition look” for Shelby was pretty exciting. My personal esthetic philosophy was that production race cars should enhance the manufacturer’s image as well as improving its performance.

Since conventional Mustangs were, by this time, extremely popular and were being seen by the thousands, a major exterior transformation was needed to differentiate the two models. Shelby was adamant that the budget would be minimal, both in terms of time and finances, so Arning’s trick IRS suspension had been one of the first items to get sacked. That was a disappointment to all involved. Early development tests in the “square backed” Trans-Am Mustangs with ace driver Jerry Titus had showed great promise. Ford had specifically tasked Shelby with building some new winners for almost nothing, as his crew already proved very adept when heading up some other successful projects for realistic amounts compared to most of Ford’s “factory-backed” programs with other operations.

Weight savings on the new Mustang was considered important so the first fast-backed “race protos” were initially stripped of most insulation and obvious weight like the front and rear seats and diecast “vents” in the quarter panels. Since the steel hood was easily removable it was decided early on to replace it with a lighter fiberglass version. Being Shelby’s “design guy” I drew up a new hood scoop for the car.

The car had now, quite arbitrarily, been named the GT350. I had to laugh; a typically impatient Shelby, tired of sitting in one of Ford’s seemingly endless “planning meetings” to discuss, among other

things, a name for the new car had finally asked someone what the distance from the meeting room to the race shop was. He was told, “About 350 feet.” “OK, then,” said Shelby. “We’ll call it the GT350.” He got up and walked out. Done. Not exactly Ford accepted management protocol, but you had to admire his focus on priorities.

My initial plan for the hood scoop was to have the intake face rearward to take advantage of the higher air pressure at the base of the windscreen. This solution had proven very effective on the Daytona Coupe, but I was surprised when Ford’s marketing suits objected. Their “common wisdom” was that, “Everyone knows air is supposed to go into a forward facing scoop. If you make it “backwards” people will think we don’t know what we’re doing!” So that idea joined Arning’s IRS and my new hood scoop was redesigned with the opening facing forward.

Cooling was the next point of contention. It was obvious that more air to the radiator would be needed for proper cooling on track so the center of the front valence had already been cut away in the race shop with little regard for esthetics. The “design” had proven effective in tests at Willow Springs so my sketches to include a lightweight ‘glass version of the front bumper and lower intake opening that matched the Mustang’s existing upper “grille” were scrapped. The race team’s mantra of, “If it ain’t broke don’t fix it” had saved a lot of money but esthetic finesse wasn’t their goal. Cost and time restraints again took priority over esthetics. Hey, you can’t win ‘em all, even if the proven data shows it’s the right thing to do.

When I showed the gathered experts my proposal for the bold twin racing stripes over the whole car there was shocked silence. There was no dissenting voice about an “identity problem” with the stripes, but they were considered so “different” that there were serious concerns that the public might balk at buying something so radical. I countered that it would be far cheaper to paint stripes than create major alterations to the body. Sold!

When it finally came down to building a track-ready racer for the beginning of the 1965 SCCA racing season it was pretty obvious that time, as well as finances, were minimal. Chuck Cantwell and his new fabrication crew had little enough time to build the roll bars and suspension components without having to worry about “pretty” exterior modifications. All agreed that more efficient cooling would be a good idea so the simplest solution had been to hack the simple opening in the front va-

lence. I didn't venture any dissent in the idea because time was of the essence. As much as I personally felt we could build something esthetically "right" as well as functionally "correct," there simply wasn't time to dither and try to gain a consensus of approval.

The first Mustang GT350R, was quickly assembled and rushed off to Texas where Ken Miles created history for Ford and Shelby by winning overall. That prototype became the template for a second factory built "R-model." They were followed by 34 production race cars that now command astronomical prices on the collector market. Their racing success and visual appearance also inspired dozens of "R-model" clones that are still the scourge of vintage racing. Most importantly these early '65 racers set a standard for the current SVT team at Ford Motor Company who recently introduced their all new 2016 GT350R. This new "R-model" with its 500+ BHP, flat crank, V8 is everything a modern Mustang R enthusiast could ever desire.



Fifty years later, Jim Marietta, one of the original "new guys" who was hired on at Shelby's to build the original GT350R Mustangs, got to wondering what it might have been like to actually finish the original R project without the compromises that had been mandated by time and finances. He began chatting with some of the other members of the original crew at their annual "Donkey" gathering (their own name for themselves because of the long hours they worked in the race shop, continually fighting race deadlines, "like donkeys") and suggested they get together and build one!

It actually started sounding like a viable idea and then really caught fire when Jim went out and bought a cherry, Wimbledon White K-Code Mustang to build on. I offered Jim some space in our BRE shop in Henderson, Nevada to build the car and soon after its arrival, William Deary contacted Jim and asked if a second car might be built alongside Jim's at the same time for his Shelby Museum in Jackson, Michi-

gan. Randy Richardson, President of the Los Angeles Shelby Club, heard about the project and offered to help build the cars, to coordinate the project and garner some media attention. Jim soon had two volunteers, Danny Sculnick and Bill Palleva to start disassembling the Mustangs and store the unusable components in a corner of the BRE shop. In the meantime Jim hired automotive video specialist Ryan Croke to document the process, so within weeks Jim's idea had suddenly become a real deal with media exposure and a couple more eager volunteers to help recreate history and chase parts.

Most interesting in this gathering of energy and enthusiasm for these "new" GT350Rs was the serendipitous find of the original IRS parts. Long ago vintage Shelby racer Duane Carling had actually found most of the original proto-parts for Arning's Mustang IRS as well as all his original drawings! I'd mentioned the Marietta plan to Duane and he graciously offered to donate those parts to the project if

A lot of thought went into the new front valence. The shape and position of the Mustang's stock front bumper was incorporated into the design to control airflow to the radiator. The rubber "flap" airdam just barely scrapes the ground; it blocks air going under the car (which has a tendency to lift the front end and keeps the tires from being planted on the track). The ducts for the front brakes were relocated to the outside of the inner fender panels (the way they were on the second generation competition apron used on the later R-Models). A possible change being considered is a smaller, cross-flow oil cooler using air coming in from the valence's lower opening. Air for the radiator would come from the grille opening. The original competition cars had the oil cooler bolted to the front of the radiator. The apron allowed air in and through the cooler and then it continued through the radiator. That defeats the purpose of directing cooler air through the radiator. This is called continuing development.





Original works drivers Allen Grant [above, left] with Jim Marietta and John Morton [above right] with Ted Sutton evaluated both cars. Everyone was suitably impressed.



The shape of the plexiglass rear window was reconfigured to eliminate the pronounced “break” in its profile. The space at the top edge is only an inch and a half (the original windows’ space was closer to three inches); the smaller space is intended to make the cockpit air exit more efficiently. The window opening’s lip was also trimmed off.



The 289 Hi-Po engines in both cars were built to original R-Model specifications by Joe Feliciano of DenBeste Motorsports.

Owner of the second car, William Deary (white shirt) got some seat time. His car was built without an IRS but everything else was identical to Marietta’s car, providing a baseline for comparison.

he could join the original team in building the car. All this, so far, was on Marietta’s nickel and the outflow of cash for the first several weeks was getting pretty serious, but Jim never wavered. Without his dedication the whole project could well have crashed like so many other well-intended racing efforts. But this one, just like the original GT350R program, just kept get-

ting stronger.

Original crew chief Ted Sutton brought in his two sons, Eric and Kevin, to help on the project. We were all extremely pleased when we discovered Jim’s friend Bill Palleva was an industrial designer with the skills to transform my ideas for the new front valence into the working model we’d eventually use for the produc-

tion units. I called in local fabricator Dermie Close to massage the chassis so Carling’s IRS components could be fitted properly while Marietta’s young mechanic friend, Danny Sculnick, continued to disassemble the donor Mustangs and then put them all back together again when the Suttons, Richardson, fabricator Dermie Close, Palleva and Marietta were finally

through building the new roll bars and putting most of the reworked components back in their proper locations.

Steve Hovsepian at VIP Collision, next door to BRE, cleared out a busy bay in his shop to transform and finish the exteriors into proper Shelby Mustang livery. Bill Palleva and I had reworked a regular Mustang R front valence hanging it on the nose of Jim's car to get the proper fit before modifying it to match my new design that included a lightweight glass replica of the stock front bumper. Bill bonded the two components together and then worked tirelessly to refine the surfaces for the plug to make the new front valence, even taking it home to Los Angeles to work on it in the evenings.

Sutton and Marietta had cut out the rear fenders to accept the larger race tires, mounted to period spec Torque Thrust wheels. Ted also fabricated some new ducting to the rear brakes using '66 GT350 side scoops while Dermie Close reworked the rear window supports to match the lines for the new smoother-shaped rear window I'd had made in plastic to hopefully extract hot cockpit air more efficiently while keeping airflow over the roof cleaner for better top speed.

When we'd completed as much of the body modifications as we could without some expert surface refinishing, we called in next-door neighbor Steve Hovsepian from VIP Collision to take over. The cars went into his shop and in a matter of days he performed his magic, transforming the two stock bodies into beautifully finished GT350Rs that could easily match the best on any Concours lawn. Amazing.

With such a critical time schedule facing us, I advised Jim Marietta to contact Joe Feliciano at DenBeste Motorsports, new facility in Northern California, to build a couple of 289 race engines. Feliciano specializes in Ford racing engines of all types, including a new Hemi small block he'd developed, but for these cars we needed vintage-legal engines and he delivered on time. As soon the new engines arrived at BRE they were quickly installed with rebuilt four-speeds and loaded on trailers to transport them to Mike Eisenberg's MAECO Motorsports in Northridge, California for the final prep before our fast approaching, publically announced Willow Springs debut on Valentine's Day.

Veteran GT350 racer Mike Eisenberg and partner Jim Francies have specialized in building and restoring vintage Mustangs for many years on the west coast so the arrival of the two new racers and the Marietta crew caused hardly a ripple in their already super-busy shop. Space was quickly made and the MAECO crew dove in to help finish all the detailing; wiring, instrumentation and plumbing that usually takes four times longer than expected. Both the new Mustangs were completed on schedule and trailered out to Willow to meet an enthusiastic gathering of ex-Shelby employees and several hundred Mustang and Shelby fans and a fantastic array of GT350s, both show and race versions.

Since neither of the new racers had yet turned a wheel at speed, a large crowd gathered to check out the crews' start-up procedures. Both cars ran beautifully right off the trailer, a testament to the original

crew's expertise and certainly the final prep from the MAECO crew who didn't miss a thing.

How did the IRS work? Mike Eisenberg, who has more miles in GT350 vintage racers than we could imagine, was pretty impressed. "Solid, fast, stable: easily as quick as any good live axle car, but with more potential. With some development this car could be one of the fastest GT350Rs on the track." was his verdict. Ex-works drivers John Morton and Allen Grant made it a point to be there to drive the cars and provide their evaluations. The new cars' general appearance was favorably noted by all the very interested GT350 owners, several of which asked when the new front ends would be available.

Marietta's plans for the twin racers include exhibition at Laguna Seca in August as well as some possible promotional tie-ins with Ford's new GT350Rs. Several people at Willow Springs who saw the cars asked if the car would go into limited production. They were ready to order one. Consequently Marietta began looking pretty seriously at opening up a new shop (there happens to be one available next to BRE). All of the panels and major components are now readily available so it wouldn't take much to build a few more.

"This whole project," said Marietta, "has turned out way better than I ever expected."

Information on future production should be addressed to Jim Marietta at: casuttonaz@hotmail.com



Since Jim Marietta started with 1966 Mustangs the decision was made to use '66 GT350 rear quarter windows. Aluminum window frames and plexiglass side windows were also eliminated, mostly to be able to meet the February 14th deadline. Besides, these windows are never used, anyway.

Photos by Peter Brock and Scott Killeen/Team Killeen