

THE SHELBY AMERICAN

49



Jim Frank, Peter Sheir, Cecil Mackinnon

Behind the scenes at Shelby Automotive

The goings on at Shelby Automotive is still pretty much of a mystery to those of us who have assumed the roles of Shelby American historians. From a production standpoint the 1968, 1969 and 1970 Shelybs were the most homogenous groups of cars, having relatively few running production changes (when compared to the Cobras and early GT350s). Yet we know the least about how they were made. By the time the 1968 models were being built at the A. O. Smith Company in Ionia, Michigan, Shelby American, Inc. as it had been known, had split into three different and separate entities. Shelby Automotive, headquartered in Ionia, oversaw the design, production, marketing and distribution of the Shelby Mustangs. This began with the first 1968 Shelby. (Prior to that, prototype work had been done in Los Angeles on the proposed 1968 models and all of the 1967 cars had been built at Ford's San Jose plant and completed at Shelby American's Los Angeles airport facility.) The Shelby Racing Company, working out of a large, nondescript building in Torrance, California, concerned itself only with racing cars. Among the programs they were involved with at that time were the building and campaigning of a team of Trans-Am Mustang notchbacks, the development of a Can-Am car, the development of the Toyota 2000 coupe for SCCA production racing and design and development of the Lone Star as a possible successor to the Cobra. The Shelby Parts and Accessories Company, at first operating out of Gardena, California and later moving to Michigan under the name of Autosport Products, was essentially a mail order business which sold aftermarket parts carrying the 'SHELBY' name as well as any parts left over after earlier years of Shelby production (such as 1966 rear quarter window and side scoop kits). They also sold numerous 'accessories' - patches, jackets, jewelry, gearshift knobs, helmets, glasses and mugs, posters and the like. Both parts

and accessories had their own catalogs and everything was also available through most Ford dealers' parts departments.

Shelby Automotive came under the control of Ford and as a result most of the paperwork associated with the design and manufacture of the 1968 and later models was channeled to individuals at Ford. And as anyone who has done any research knows, it is extremely difficult to pick up a seventeen year-old paperwork trail in the giant labyrinth that is the Ford Motor Company. The Ionia plant is no longer used by A. O. Smith, which is now owned by General Tire. Another reason why not much is known is that unlike the Cobra and early GT350 program, there were no immediately recognizable names associated with the building and testing of the late model Shelybs. No Ken Miles, Chuck Cantwell or Pete Brock. And because there was no Shelby racing program for the GT350s or GT500s, there was no publicity from that direction and no name drivers

associated with the cars: no Dan Gurney, Bob Bondurant or Jerry Titus.

Nevertheless, the cars did get built. Prototypes had to be made and testing had to be done - and none of this was done by phantoms. So who were these guys?

Back in the beginning of this year, contact was made with a few of the men who worked for Shelby Automotive on the 1968, 1969 and 1970 cars by some dedicated SAAC members in Michigan. **Jim Frank** was the development engineer (one of three engineers at Shelby Automotive) who worked under Chief Engineer Fred Goodell. Jim went to work at Shelby American in Los Angeles in February of 1967 and was transferred to Michigan when production was shifted to Ionia. **Pete Sheir** was a mechanic in the engineering department at Shelby Automotive and **Cecil MacKinnon** was one of the test drivers who, among other assignments, evaluated the proto-types. They were brought together for this interview by Bill Van Ess, Ron Mack, Jack Redeker, Vanar Mahlebashian and John Johnson - all SAAC members from Michigan - to shed some light on what went on during the last years of Shelby production.



Shelby engineer Jim Frank (left) started working at Shelby American in Los Angeles in 1967 and was one of the first people to move to Ionia when Shelby Automotive moved to Michigan. Cecil MacKinnon served as test driver at Shelby Automotive. He recalled that the red GT500 fastback and the blue GT500 convertible used on the 1969 Shelby postcard and sales brochure were actually prototypes. MacKinnon admits putting at least 50,000 miles on the convertible before someone else smashed it up.



Pete Sheir, former Shelby Automotive engineering mechanic. He solved many of the mechanical problems that turned up on cars going down A.O. Smith's assembly line.

SAAC: What, exactly, was the relationship between Shelby Automotive and the A. O. Smith Company?

Frank: We were separate entities. They [A. O. Smith] were a subcontractor to us [Shelby Automotive] and did the assembly. We theoretically did all of the engineering work - in what is now the Knights of Columbus hall down here [in Ionia]. It was a former Buick agency and we had three or four offices and a couple of drafting tables, four lifts and some other space to work and we did our experimental work and developmental work there.

SAAC: When was the decision made to move Shelby production to Michigan?

Frank: That decision was made that summer, 1967, and it turned over fairly quickly. Our problem out in Los Angeles was that we were going to lose the lease on the hangars. We were leasing them from North American aircraft and North American wanted to move back into them to expand their facilities. So we had to get out of there and by this time there were almost two separate entities operating anyway - Shelby race and Shelby production. They decided to move the production out to Michigan because we had one hundred percent re-work on the fiberglass in California. Every car that came off the production line went automatically into re-work to get the dings and the ripples taken out of the 'glass. They figured they could come out here, to A. O. Smith, who had built quite a few Corvettes and had some experience and could turn out a higher quality glass panel. So we came out here. We finished off the '67s out there and came out here to start building the '68s.

SAAC: Do you remember when Job 1 started for the 1968 model?

Frank: I don't know the exact date. I came out to Michigan in August and almost everyone was here by the end of September, but because I wasn't on the production end of it I don't know what day production actually began. Pete might know more about that than I would.

Sheir: I had very little if anything to do with production. I was usually working on the model a year ahead or trying to get the model that we were just starting to pass emissions or that sort of thing.

SAAC: What was the first thing you started working on when you moved from California to Michigan?

Frank: I did the liaison back and forth, trying to get acquainted here and get things started here so that when everyone else came out here they could start right in. Then the first thing I did was to try to get the '68s through emissions. That car hadn't passed emissions yet because we had certain modifications done to them before they came to us. We threw a skin on the first few and I took them down to Dearborn and started running them on the emission rolls, trying to make the adjustments so that I could get two cars that would pass.

We had to pass two cars - one with the small engine and one with the large engine. And that year we didn't even have to run them 50,000 miles. All we had to do was get two cars, sneak them over to Ypsilanti, and run 'em. You know - take them out the door before they checked them a second time. [Everyone laughs.] With any car built today, I would guess that nine out of ten out of them, as they come off of the assembly line, would not pass the emissions test. Every car that is tested is very carefully hand-prepared for that test. The next year, for the 1969 models, we had to run them for 40,000 miles. And we had to run a series of tests along that 40,000 miles. The Feds weren't worried about us very much because we didn't produce that many cars. I don't know what our total production was - you would probably know more about that than I do.

SAAC: We have accurate production figures for the 1968 model run but the figures we got from Ford for the 1969 and 1970 models don't coincide with the number of cars indicated by the serial numbers we've collected for our registry. Ford's total - which is most likely not accurate and may actually indicate something other than Shelby production - is 3,751 cars and the highest serial number we have found is number 3294.

Frank: I think what you may find they've done is included the 1970 cars in the 1969 total and then broken out the 1970 cars - which they may have added to that total. The 1970 cars were all produced in 1969 because they did not meet certain requirements for manufacture after January 1st, 1970. So the five or six hundred cars or whatever the actual number was were updated to 1970 models, given a minor facelift and pumped out of the plant by the first of January, 1970. There was never a car produced in the 1970 calendar year. So they may very well have counted them all as 1969s and when we made the model change there were probably five or six hundred odd cars left, which would account for that discrepancy. So those are probably being counted twice.

SAAC: Why was Shelby Automotive set up in Ionia? Was it because they wanted to be close to A. O. Smith?

Frank: Yes. A. O. Smith was making the fiberglass parts and they had a 'circle-jerk' assembly line up already set up that they put Corvettes together on. They turned out a higher quality glass and they had some experience in assembly, so we subcontracted everything to them. We put a couple of liaison people in their plant and they put the cars together over there.

SAAC: Who was the fiberglass supplier for the '67 cars in southern California?

Frank: Whoever gave us the cheapest price. That's why we had a hundred-percent re-work. I remember when we were starting to make the prototype panels for the 1968s

and we had one supplier who was a bit-part actor in the movies. He was a little guy with a badly broken nose - I can't think of his name - but he owned this little place out there and he had a bunch of wetback help and whenever he got behind he just started yanking pieces out of the molds green and stacking them up in the corner. They hadn't fully cured and they'd come in with a ninety-degree twist in them. We wondered what was going wrong so I went out there one day and watched. I came back and told them what was happening: he was behind schedule and he was pulling them out of the molds about four hours too early. That's what was wrong. But that was typical of some of our suppliers.

SAAC: So there wasn't much of a problem with the fiberglass once it was being manufactured by A. O. Smith...

Frank: Well, by comparison they were a world better.

SAAC: There was one convertible made in 1967, a prototype [67413C9A00139]. Do you remember anything about that?

Frank: Sure. We built the damned thing and it got stolen almost immediately! This was actually the first 1968 model made - it was a prototype made from a 1967 Mustang chassis but was built to '68 specs - more or less - and had '68 fiberglass which we made in some temporary molds that were thrown together out there [at Shelby American in Los Angeles]. It was the only one like it in the world. It was, of course, an engineering car and we ran on the system that anyone could drive an engineering car who got to it first. We had a visiting engineer who was from Argentina, I think, and he was out there doing some consulting with us, on remittance from Ford. He took it home one night and parked it under the carport at his apartment and it got stolen. We got it back about a week later; it was found in the Palos Verdes hills and everything had been stripped out of it: the carburetor and intake manifold were gone, the wheels and tires - anything shiny had been taken off of it.

SAAC: Wasn't there some work done on a prototype big block supercharged car in 1967? As we recall, there was a 1967 GT500 notchback that had a twin-Paxton set-up...

Frank: If you've ever heard Bill Cosby's album, '200 Miles Per Hour', that car existed. We built it and it had two Paxtons on it. And we also built a Shelby with the same dual supercharger set-up. It was the only Shelby built with that set-up. We also built a Cobra with an AiResearch turbocharger on it. It put out about 600 horsepower. It had an exhaust that came out through the left front fender, about that big around [indicates a diameter about the size of a quart oil can], so it wasn't exactly streetable. It was probably the loudest car that was ever built.

SAAC: Can you remember any other special cars that might have been built in



Two cars were displayed in front of A.O. Smith. Photos were taken by SAAC Jack Redeker during visits to Smith in 1968 and 1969. It's fortunate that Jack is able to share these photos with us; otherwise we wouldn't have any photos to accompany this interview.

1968 or 1969? For example, the Playboy Playmate of the Year was given a pink '69 Shelby convertible. Do you remember that car?

Frank: No. I spent no time in the plant. Pete was in engineering most of the time, too.

Sheir: As the cars came out of Smith's production line, if any of them had any problems we'd go over to the factory to fix whatever had to be fixed.

SAAC: The cars arrived at A. O. Smith on railroad cars. They came from Ford's Metuchen, New Jersey assembly plant in 1968.

Sheir: Half the time when they came in we'd have to go out there to work on them, the biggest share of them, so they could get them off the rail. The four-speeds were gone and parts were missing off of the engines. They used to say they had detectives riding the trains but they could never figure out where the thieves got on or where they got off with the parts.

SAAC: Why did they source the cars out of the New Jersey facility instead of Dearborn, which was so much closer?

Sheir: Metuchen was the plant producing the largest volume of Mustangs and they could spare the production.

SAAC: Wasn't fuel injection considered for the 1969 models?

Frank: We built two cars with Lucas fuel injection systems on them and three with a thing called Conolec. It was an electronic fuel injection made by a company in Elmira, New York. They were strictly pro-

totypes. I don't know what became of those cars.

SAAC: Did these prototype cars that you were experimenting with have regular production Shelby serial numbers? Were they essentially production cars that were used by engineering and then returned to be sold at some point?

Frank: My understanding of it was that, according to law, as soon as we declared one a prototype, it could never be sold for use on the street. We were given about a dozen sets of manufacturers plates and we could use them on any car we wanted, and on any number of cars we wanted, but any car that we used as an experimental prototype was theoretically not to be sold to the public or put on the highway with anything but these manufacturers plates. We usually had about a dozen engineering cars and they turned over from time to time, but we also built some experimental fuel injection cars and we worked with Lucas for almost a year and we worked with Conolec for about the same length of



1968 cars arrived semi-complete by rail from Ford's Metuchen, NJ plant.

time. And all that information went to Ford because I remember that I stayed on an extra month after the first of January because they wanted me to finish up all of the paperwork on those two injection systems and get it shipped down to Ford Motor Company. So I got an extra month's employment and a bonus for hanging on, because I had another job lined up.

SAAC: How did the fuel injection work?

Frank: It performed pretty well but we could never get the cars close on the emissions test.

SAAC: Was that the major hang-up or was it the cost?

Frank: The cost wasn't that great.

Sheir: You'd get it set for running warm and when it cooled off the darned thing wouldn't start. When you set it for cold, it wouldn't run worth a damned when it got warm.

SAAC: When the cars were finished, were they shipped directly to the dealers that ordered them?

MacKinnon: They were picked up by transporter and shipped to Ford's distribution point in Wixom [Michigan] where they were unloaded and then reshipped to individual dealers with other cars the dealer might have ordered.

This photo shows yet-to-be-completed 68s, some having reworked fiberglass hoods and others with standard Mustang hoods. Cars were shipped with steel wheels.





Cars were shipped with stock Mustang front bumper in place but with no headlights or nose pieces.



Finished cars awaiting delivery to Wixon distribution point.



Assembly line went through a paint booth and a drying tunnel.



SAAC: The 1969 cars were built essentially as Mach 1s. That is, they shared many of the Mach 1 features and options. Did they come from Ford with consoles?

Sheir: No, they came without consoles. The consoles were installed at A. O. Smith. When they put them in they used a long drill bit and they couldn't figure out why the first few cars started losing transmission fluid when they put them in reverse. It was because they were drilling three holes clear through the top of the transmission.

SAAC: When you gave a car to a magazine for a road test or article, was it prepared any differently than one you might find on a dealer's lot?

Frank: Oh, sure. You used the excuse that everyone does it. On one particular car we took the vanes out of the thermactor because that used horsepower. We also changed the advance characteristics of the distributor. As a matter of fact, we put centrifugal advance distributor guts inside the standard case. The vacuum retard and advance were completely inoperative, although all of the hoses and everything were there and all of the numbers looked right. The carburetor was rejettied and we usually dropped the rear end one notch, because zero to sixty was the big thing that

everyone looked at in those years and we'd always have Goodyear mold us a couple of dozen tires every year that were made with very soft rubber - drag rubber. There may have been one or two other things, I can't recall. *Road & Track* tested one of these cars - a 1969 GT500 - and got a zero-to-sixty time of 5.9 seconds. *Motor Trend* caught it at a flat six. And that was as fast as the big engine got that year. It was purely a matter of 'we're going to give this car to these people and they're going to go out and drive the hell out of it' so we built it special. And it was.

SAAC: Where did you do most of your testing?

Frank: We used Grattan Raceway for handling testing and acceleration runs on their strips. We only went out there two or three times but when we did we would spend a whole day. We'd take three or four cars and try this and try that - we'd have different combinations on the cars: different ignition timing, different jetting - we'd set up two cars with different things on them and test them against each other. Once in a while we would make a small change out there but mostly we'd modify the cars back in the shop and just test them at the track. And we'd run the hell out of them and have a good time. We'd previously done the same thing in California, out at Willow Springs. We went out there three

times in the six months I was there and we'd charge around and take acceleration times and braking times and that sort of thing - to see how things were going. Every time we'd get a new mechanic we would take him out and scare him. We'd give him a ride around Grattan.

MacKinnon: You'll have to tell the story about that kid.

Frank: We had a fairly new mechanic - I can't remember his first name - and he was a born hotshoe to listen to him, had outrun cops and that sort of thing. And we took him out there and we got on the start/finish line and Pete said 'Why don't you take him around for a ride.' And there are only two places there where you can really get hurt. There was a tree way back in the corner that you might be able to hit if you really tried hard and if you slid off bad at the end of the straight, you might roll going over that barrier. But otherwise, no matter where you are out there, if you went too fast you'd just slide off onto the grass and come back on. So I took him out there and when we got back he was all crouched down and was all eyeballs and it was really hilarious.

SAAC: We've heard a story about a '69 Shelby that fell down an elevator shaft at A. O. Smith...?

Sheir: The production line at Smith was up on the third floor and the cars had to be



1969 models awaiting shipment.

brought up by elevator. They backed them in so the cars would be pointed in the right direction when they got there. The car you're referring to was a blue car. I guess when it got to the stop, two of the four elevator cables passed the stop and kept going and the car slid, nose first, down three stories.

SAAC: Do you recall what happened to that car?

Sheir: It sat around for a long time, then they finally ran it back through the line. Did you ever see the TV ad for General Tire? They used a blue Shelby and the car they used was the one that went down the shaft.

SAAC: Was that car eventually given to some school?

Sheir: I'm not sure about that particular car.

Frank: We gave away quite a few cars to various schools. The reason why they were given to these schools [*the cars were actually donated to the schools for auto shop or power mechanics classes and were never intended to be registered or driven on the road. -Ed.*] is because we couldn't sell them. We had our choice of scrapping them or giving them away and if we gave them away they could be written off against taxes. It was that simple. We gave a couple to MTU [*Michigan Training Unit - part of the prison at Ionia - Ed.*] and there's still one of them up there. We gave one to Montcalm Community College; we gave them to a lot of high schools in western Michigan.

SAAC: A convertible was given to Western Michigan University and about two years ago it was sold and is now back on the road.

Frank: Once they sit around for ten years or so, everybody forgets that there was a restriction on their being sold.

SAAC: Were most of them given away towards the end of production?

Frank: Well, there were an awful lot of them given away when we went out of business. We still had about a dozen



This photo shows each car to have the last four digits of its serial number taped to the windshield.

engineering cars and one or two of them were purchased by people who worked for us. I don't know how they got them registered but apparently they did. Then we gave away eight or ten. We usually gave them away as soon as they became redundant for us because there was no sense in letting them sit around. And that would probably have been not too long after the start of production for some of them.

SAAC: So some of the cars that were given away would have been zero miles cars?

Frank: Not zero mileage. They'd been beaten around by the people in the engineering department. Some of them were the ones that Cecil used to put, what - 50,000 miles on?

Sheir: [*examining photo of a Shelby...*] This car is one that Cecil drove through the back roads to put mileage on. They hired another guy to drive - to help put more miles on it - and he smashed it up.

SAAC: Now let's get this straight - you actually hired somebody for the specific job of driving a Shelby around to put mileage on it?

Frank: Yes. That's what Cecil did. [*Everyone laughs.*]

MacKennon: We tested rims and tires out at the airport.

Frank: You'd put it into a hard left turn - just crank it - and go and go and go until the tire or the rim went.

SAAC: Are you guys sort of surprised that anyone is interested, today, in what you did back in the 1960s?

Frank: The Shelby was a real kick. I worked with those cars for three years and I can't understand the cult that has grown up around them. I'm amazed at all the attention Shelsbys are getting today. At the time I worked for Shelby I never dreamed that anyone would be asking questions about the cars fifteen years later. If I'd known I would have paid a lot more attention to the little things that were going on! We could have had those engineering cars for peanuts. We could have bought them real cheap, stored them for a few years and then registered them.

SAAC: Any regrets that you didn't?

Frank: Oh sure, I regret that I didn't - because there was money in it. But I drove nothing else but Shelsbys for three years and after a while they really weren't that special. To me. I used to drive thirty-seven

and a half miles each way to work in California, on freeways. That gave me a seventy-five mile round trip every day. And it took just over ten gallons of gas to do it! The '67 GT500s had dual quads and they'd do zero to sixty in about 6.5 or 6.6 seconds. I put a different intake manifold on the one I was driving back and forth to work and put a single 850 carb on it and I dropped the zero to sixty time to about 6.1 and got about 12 or 13 miles per gallon. That thing was so over-carbureted it was just absolutely ridiculous. They had two 650s on there - 1300 CFM - and the engine just did not require it.

SAAC: We've heard there were occasionally special project cars built that weren't exactly prototypes and were never intended to be used as possible ideas for production...

Frank: There were a few. I remember one special car we built. The original owner was a doctor in San Francisco, a friend of Shelby's, and he bought a '67 GT500. He had some friend with a Z-28 who was burying him up on the streets, so he complained to Shelby and Shelby told him to send it back and we'd build him a car that would beat the Z-28. I still have the dyno sheet someplace at home because I built the engine. We got 476 horsepower at 5200 RPM out of that engine - a lightweight 427. We put in the double-A cam that they used in the LeMans engine in the Mk IVs and we played with it for about eight or ten hours on the dyno. It had an automatic in it; we jacked up the stall-speed. We put in drop-out pipes so the headers could be opened up at the drag strip. That sucker would flat haul.

SAAC: This wasn't the 'Super Snake'...?

Frank: No, this was more of a 'one-off' special.

SAAC: Do you have any idea how many GT500s were made with actual 427s from the factory?

Frank: Very, very few. It was about a \$3000 option and there weren't many of them built.

SAAC: One of the most often asked questions we hear is 'How many GT500s had factory-installed 427 engines?' Of course, there is no way to tell other than factory or dealer documentation. And an awful lot of owners of 1967 or 1968 GT500s with a 427 engines in them claim their cars came that way from the factory.

Frank: Well, not very many were ever made. This '67 that belonged to the doctor was something special. It came back to us after it had been sold and was re-fitted with a 427. We just built an engine for it and put it in. I understand that Shelby told him that it would cost him \$10,000... and the guy got a steal because by the time we finished with it, we had hours and hours in it.

SAAC: Was anything like that ever done out in Ionia?



Red fastback was donated to Montcalm College where it remained until 1985. Serial number is 9S02S100029, indicating this may have been a prototype - possibly even the car pictured on the dealer sales literature.

Frank: The only thing we did out here that was special were the fuel injection cars. And I doubt very much if any of those are still running around on the street. There were three Concoles and two Lucas cars. The Lucas cars would perform pretty well - they would run hot or cold. But the Concolec wouldn't.

MacKinnon: We spent a lot of time on the computer trying to set them up to get where they would pump; but when you got it warm it wouldn't choke out...

Frank: You should have seen the trouble we had with those things trying to get them through emissions!

SAAC: What was Carroll Shelby like to work with?

Frank: I never worked with him. I think I probably said eight words to him all the time I worked for Shelby American and Shelby Automotive. He was up in a big office and he was interested almost entirely in the racing end of it by that time. By the time I was hired on, the chief engineer was already a Ford man and Shelby had no time

for production car people. The only engineer he ever talked to was Phil Remington. And Phil Remington, of course, had been with him for years and is one of the best race type engineers, high performance engineers, in the country. We used to see Shelby around and it was 'Good morning, Sir.' and that was it. I didn't work with him - I worked for him. He was probably a nice enough person; he just didn't get to my level of anything. Ford was happy as a clam with the Shelby operation. They wanted a muscle car and they didn't want the liability that went along with it. We built a muscle car, they took credit for it being a Ford and if somebody killed themselves in it, they could have sued us for \$10,000 and they couldn't have collected. We didn't own a thing. We leased all of the equipment, we rented all of the space - I don't know if we even owned the typewriters we had. You could have literally sued us for anything and you could have taken the whole damned company and you couldn't have collected \$10,000. There wasn't \$10,000 worth of capital equipment owned by that company. For me, it was a great job. We had an awful lot of fun - we got to play with those cars for three years. But that limited liability was our reason for existence.

