

THE SHELBY AMERICAN



FRED GOODELL

- Rick Kopec, Vincent Liska & Howard C. Pardee

The Shelby-Ford relationship began when Ford General Manager Lee Iacocca advanced Carroll Shelby \$20,000 in 1961. The result of that 'investment' was the Cobra and it didn't take very long for anyone at Ford to realize it was a good one. Shelby began expanding his operation almost immediately and Ford expanded its financial assistance accordingly. As Shelby American grew in scope, the powers at Ford became increasingly uneasy about bankrolling this renegade in California - even though he was showing stellar results. So, little by little they began 'transferring' key people into the Shelby organization. These weren't spies or puppets taking their orders from Dearborn. But they were solid Ford employees who brought with them considerable expertise and knowledge about dealing within the FoMoCo bureaucracy - even though, in many cases, they were now outside of it. Chief Engineer Fred Goodell was one such man.

The son of a lawyer, he grew up in the Grosse Ile section of suburban Detroit and one of his schoolmates happened to be Henry Ford II. He always liked mechanical things as a boy so he surprised no one by studying engineering in college. His friend Henry got him a job summers working for his Dad's company. Upon graduation, Goodell went to work For Ford. An especially vivid memory is of one of the first projects found himself working on as a junior engineer. The year was 1938 and Goodell's project was a rear-engined experimental car. After a year's worth of work on the chassis, the body was scheduled to be delivered on a Monday. Goodell was called by his supervisor at about 10 A.M. on the previous Saturday and was instructed to report to work and to pull the chassis out in the center of the shop because Mr. Ford (the 1st) and his son Edsel were coming over to look at it. 'They showed up,' Goodell recalls, 'And walked around it, and the old man must have looked at it for all of five minutes. He never said a word. Then they left. Pretty soon the telephone rang and it was Mr. Crawford, my supervisor. He asked me how long I had been working on that car and I told him one year. Then he asked me how long it would take me to scrap it. 'The Old Man doesn't like it,' was all he said. I was crushed because it had been my pet project.'

Goodell had taken flight training during college and at a party one night a chief pilot offered him a job flying for one of the

airlines. This pilot was convinced that this was where the future was. With the bitter memory of his year-long project's being scrapped on the whim of the elder Ford, Goodell resigned from the company and went to work as a pilot. Shortly thereafter he joined the Air Force and spent four years in uniform. Following his discharge, Goodell and his wife bumped into Henry Ford II and his wife in a restaurant and Ford - who had recently been appointed president of the Ford Motor Company - offered Goodell a job there. 'I know something that my father and my grandfather didn't know,' Henry Ford II told Goodell. 'I don't know anything about the automobile business, but I'm going to hire people that do - and I'm going to listen to them. We're going to change things. I know you think it's crazy around here but why don't you come out tomorrow and just look around.' Goodell went to see Henry

Fred Goodell keeps an eye on his boss at Goodyear's San Angelo, Texas test track. Shelby cut a few fast laps in the Super Snake and then cut out - leaving the rest of the driving to Goodell.

Ford II the next morning and by 11 A.M. he was once again employed by Ford. He initially worked with experimental engines and later got experience in the manufacturing end of things when he became the resident engineer at Ford's Rouge Plant. From there he went to the International Division and stayed there for the next twenty years.

Following his stint with Shelby from 1966 to 1970, Goodell went back to Ford, running the department that provided journalists and magazines with test cars and providing cars for television and films. Among the shows he was involved with were 'Cannon' and 'Hawaii 5-0'; and he provided the Mustang used in the Steve McQueen movie 'Bullitt'. They built two identical Mustangs for the film but needed eight Dodge Chargers. The Mustangs were prepared at Shelby American, probably - Goodell surmises - because McQueen and Shelby were such good friends. He retired in 1974, but that didn't last long. He accepted an engineering position with AM General in the late 1970s and was involved with various military vehicle contracts around the world. When Roy



Lunn came to work for AM General, Goodell knew he wouldn't be around long because Lunn had worked under Goodell at Ford. So Goodell moved to a competitor, BMY, which also did military work. He is currently a staff engineer for BMY and among his most recent projects is a military truck which has the ability to inflate and deflate its tires while it is moving. 'If there's going to be another war, it will be in the Middle East,' said Goodell. 'That's where the work is.' Following this interview he left for Egypt.

Howard C. Pardee, Vincent Liska and Rick Kopec flew to Michigan this past May to interview Fred Goodell at his home in Grosse Ile. It was as fascinating as it was memorable. Old age and its attendant wisdom also brings with it some degree of independence and Fred Goodell had no shortage of that. He was opinionated and pulled no punches and although he is 72 years old he was able to recall details as if they happened yesterday. It was an afternoon none of the three of us will soon forget.

SAAC: Can you remember the first time you saw one of Shelby's cars?

GOODELL: It was around 1962. I was working in the International Division at Ford and I got a call one day from a fellow named Dave Evans who was in the racing end of things. He said to me 'You have a reputation for being a handling expert...' The reason for that was in Export, in those days, we were competing with cars like Rolls Royce and Mercedes in overseas markets, so we spent a lot of time on ride development and handling. A lot more time than Domestic did, as a matter of fact. And somehow I had gotten a reputation of being someone who had a good sense of the rear end - I knew something about ride and handling. So this fellow said to me, 'Will you come and work with me for six months?' I told him I didn't see how that was possible, and at any rate he would have to talk to my boss. So he talked to my boss and my boss agreed that since this particular project was for Mr. Ford, maybe it was worthwhile. Dave Evans picked me up at my office and said he wanted to take me somewhere and show me something. We drove out to the experimental garage and I can still remember it distinctly: this car was up on a lift and I walked underneath it - I'll never forget it - and it had transverse springs - up real high - and it had kind of spindly-looking underpinnings, a tubular frame and a British type rear axle. And it had a Ford V8 engine in it. I said to Dave, 'What the hell is this?' He said, 'There's some guy, a race driver - he used to be a race driver - who has come up with this idea. This is a Cobra. And it's the goddamnest handling thing you ever saw in your life.' He went on, 'Mr. Ford has given me an assignment: he wants me to be able to get this car to the point where he can take

it home and give it to his wife to drive.' So we got the car down off of the lift, got in it, and took it out onto the handling course. I busted through the course the first time at about 50 MPH. The curves are made so they get tighter and tighter as you go through them. When I got to the third series of curves I lost it bad. I was out in the damned grass. And I said 'Holy \$#!t!' It didn't give me any warning; it didn't tell me anything. I thought I must be getting absent minded or something, so I went back and tried it again. I got to the same point and, man, I spun it again - bigger than hell. Dave was sitting there laughing at me and he said, 'What the hell's the matter with you?' I said, 'I don't know. I guess I don't know how to drive anymore.' He said that it just took a lot of practice and he told me to try it again. By the third time I realized that it wasn't me - it was the automobile. We drove back to the garage and Dave said to me, 'Do you think you can fix it?' I said, 'Yeah, you can fix anything. But I don't know how long it might take. It might take a long time. It's going to be a major overhaul, I can tell you that.' He said, 'We have to fix it, that's all. We've got to fix it.' So we started - and we did everything we could think of with that automobile. A lot of days we said 'Hell - you can't get there from here.' We weren't making it any better or any worse. We tried everything: we dropped the roll center; we widened the tread; we dropped the spring a couple of times; we put more arch in it; we put four shock absorbers on the front and we put four shock absorbers on the rear. We just weren't getting anywhere. Finally one day, by accident, we hit a combination that showed an improvement. Then we got to the point where we were actually getting pretty good handling. After trying different sized sway bars and different sized shock absorbers we finally had it so that it was a pretty decent car. We had to change the wheels and tires - we had to go to a much wider rim and a bigger tire. And we finally got it to the point where Dave could take it back to Mr. Ford. And that was the last I saw of it. I'd heard of the Cobras often after that - especially when they started racing. But I wasn't involved with them again until 1966 when I was summoned to go out to California.

SAAC: Is that when you became the Chief Engineer for Shelby American?

GOODELL: Yes. That was in early October of 1966. There was some unpleasantness that preceded my arrival out there. Carroll had a very enviable contract with Ford. He was paid an annual six-figure lump sum from Ford for the use of his name. For that all he had to do was appear at some banquets and auto shows and functions like that. Then he had another contract with Ford for the Shelby Mustang program. He paid nothing for those cars; they were all billed to him but the only time he paid for them was when he sold them. He had a similar kind of a contract for the

Cobra. Then he also had a separate contract for the racing cars. And he had pretty much unlimited use of Ford Motor Company funds at about 1 percent interest. So Ford became a little concerned and decided that they better have some Ford Motor Company people on the scene. The fellow who had preceded me as Chief Engineer was apparently an aircraft guy. When I took over I tried to hire him because I figured it would be nice to have his background and to know something about what had gone on before I got there. But he wouldn't even come and talk to me. He's the one who created some of the problems that had to be solved when I got there. I remember being in my office one day when the comptroller came in and asked me to sign something. I looked at it - it was for \$14,000 worth of generators or something - and I said I wouldn't sign it because it didn't have anything to do with the Chief Engineer. He said that the previous Chief Engineer had always signed them before. I told him I wasn't going to be signing anything like that and if he wanted it signed to go see Carroll Shelby. **SAAC:** Who worked under you?

GOODELL: Chuck Cantwell [GT350 project engineer], Jim Benavides [427 Cobra project engineer], John Schung, Ray Broseck [head engineer] and John Wyer [GT40 project director].

SAAC: Was the 1967 Shelby model finalized by the time you arrived?

GOODELL: Well, let's not say 'finalized'. I got there in October of 1966 - about the time they were building the 21st car. It had one set of headlights way inboard, towards the centerline of the vehicle, and the other set at the outer edges of the grille. It also had lights up in the scoops. I thought it was appropriate - we being almost a subsidiary of the Ford Motor Company - that we get to the authorities and see how we were doing with regards to passing state laws and so forth. So I made the awful mistake of going to Sacramento. And man, they were waiting for us! I'll tell you, I never got such a tongue-lashing in my life as I got from the administrator in California. He said, 'You mean to tell me that the Ford Motor Company thinks they can get away with stuff like this? You guys are so far away from the law it isn't even funny. And boy, we're going to come down on you, too. Those headlights don't pass anything that we have - and there are a lot of other states that are going to join us. As far the lights in the scoops are concerned, they're illegal - you cannot use them.' So I had to hurriedly make a change. We moved the headlights out and we removed the lights from the side scoops because we knew the pressure was on us. By that time it was clear to me that I would have to meet with the administrators from every state, so I did. And boy - New Jersey, New York, Maine, Pennsylvania - they were very, very unfriendly. And temporarily, I think, that may have hurt Ford because they all felt

that Ford was trying to pull a fast one on them. So we did have to make some changes in the car and we had to make them quick.

SAAC: Were the headlights a running change or did some cars continue to be built with center-mounted high beams?

GOODELL: It was a running change and everything was scrapped. I can tell you - everything we had in that plant was scrapped.

SAAC: We've found quite a few 1967 models with later serial numbers that had inboard headlights. It seems to us that - by serial numbers - they're almost interchangeable throughout 1967 production.

GOODELL: No way! I stopped it on all cars and I told them to scrap everything we had in the plant - because I had promised the various state administrators we would eliminate that immediately. I made that change as quickly as we could get new tooling, which took, I think, about two weeks. I did not want to subject us to any legal problems.

SAAC: All of this didn't take place immediately, though. Meeting with the motor vehicle administrators in all 50 states took time and cars were continuing to be built during that time...

GOODELL: Yes, of course. Some cars were still in the pipeline, and we may have used up some stock after the actual stop order was issued. And don't forget that the cars were not always built in strict numerical sequence.

SAAC: We've found a fair number of 1967 models which had a 'Z' stamped ahead of their serial number. Most of these cars have outboard headlights and they are scattered throughout production (except that they are not among the very early cars). Was this an attempt to identify cars which would be sent to the states which had minimum distance between headlight requirements?

GOODELL: I can't honestly recall, but it sounds like something we might have done. *[Note: SAAC has since spoken with Robert Wyatt, the former shop manager at Shelby American, who confirmed that this is exactly what the 'Z' in the 1967 serial numbers was for. We'll be interviewing him for an upcoming issue. -Ed.]*

SAAC: Is it possible that the center headlights and side scoop running lights might not have been stopped at the same time?

GOODELL: Yes, that is possible. You'll have to forgive me; I'm pretty near 72 now and I can't remember every small detail. But we might have stopped one before we stopped the other.

SAAC: As long as we're talking about the '67 cars, one of the most frequently asked questions we hear is, 'How many 1967 GT500s were built at the factory with 427 engines?'

GOODELL: Very, very few. I'd say maybe ten at most. I drove one at Goodyear's test track in Texas.

SAAC: That would be the white car called

the 'Super Snake'.

GOODELL: That's the one. It had special Goodyear tires - they were called 'Thunderbolts' - and I got roped into that deal. Carroll said to me one day, 'We've got to go to San Angelo and we have to build a special car to run at the track down there. It's a 5-mile circle and they want us to run it at top speed to get publicity for those tires. There are going to be a lot of people there from *Life* magazine and CBS. We've got to build a special car. What should we build?' I told him that if we were going to run high speeds for a long time we should use one of the 427 lightweight engines and an automatic transmission. That ought to give us the best package we can get for that kind of running. We could put a large oil cooler on it and so forth. So we built a GT500 and shipped to out to San Angelo.

Shelby inspects Goodyear's 'Thunderbolt' tire.

On the appointed morning Shelby told me to take the small company aircraft with my guys and fly down there. He'd meet us there. He was going to take the larger company airplane because he had some stops to make along the way. We got down there and the car had already arrived. Carroll showed up about four hours late and there was a big mob of people waiting for him. The first thing he did was to ask one of the photographers if he wanted to go for a ride. The guy says 'Sure!' so Shelby puts on his helmet and takes the guy for a few laps. Then he comes in and takes one of the guys from *Life* magazine out, and a few of the guys from CBS, and a few of the other photographers. Then he takes a couple of more laps and then comes in and hands his helmet to me. 'Freddy,' he said, 'I've got to go to Washington. You'll have to finish this. Just wear my helmet and nobody will know the difference.' So I got the job of



running that car all day. I averaged 142 MPH for 500 miles. That was one of the few 427 powered GT500s.

SAAC: They were winding down production of the 427 Cobra when you arrived at Shelby American, weren't they?

GOODELL: Yes. The last 47 Cobras were built after I got there.

SAAC: Was that when the 427 engine started to be used again?

GOODELL: Yes. I insisted on that. Frank Martin [*Shelby American Manager of Finance - Ed.*] wanted to continue using the 428 but I told Mr. Martin that if he did that he was going to have himself a whole lot of trouble because we were advertising it as a 427 and that's not a good policy.

SAAC: Was that the actual reason the 428s were used in some of the street cars instead of the 427 engine? We've heard that it had something to do with a strike at the foundry which made 427 blocks scarce for a while.

GOODELL: Do you know Frank Martin's background? He was a finance guy. Does that give you a clue? He started buying 428 engines because they were cheaper. When I found out about that I said, 'Hell - why don't you buy 352s - they're even cheaper yet!' He fought me on that but I put my foot down. I said, 'You just wait one damned minute. I now have the responsibility and I'm telling you I'm not signing off on it.' He said, 'Well, Carroll will.' I said that I didn't think Carroll would but he could ask him. Carroll wasn't born yesterday either.

SAAC: It seems there were no standards for the production of Cobras. They used whatever parts they could get, from whatever sources.

GOODELL: That's absolutely right. They had stuff stored all over that Cobra area - odd pieces of this, that and the other thing - and that was the story. They got it from wherever they could. There were no engineering specifications for the Cobra.

SAAC: As Chief Engineer, you were probably one of the first people in the company to realize that the 1968 federal safety regulations would be impossible for the Cobra to meet. Who told Carroll Shelby?

GOODELL: I was the guy who had to go in and tell Carroll we couldn't build the Cobra anymore. It was one of the hardest things I've ever had to do in my life, because he loved that car. But in 1968 it would not pass anything: it wouldn't pass front end crash, head swing or roll over; the door locks were no good... There wasn't anything on the car we could fix - it was just too far gone. That's why we decided to go with a completely new car.

SAAC: How much advance notice did you have regarding the 1968 federal standards?

GOODELL: We had about a year, so we knew we were in deep trouble. Carroll at first wanted to see if there was anything we could do to fix the car but it would have required a complete re-do.



Is it Shelby or Goodell behind the wheel? In a helmet, who can tell?

SAAC: While you were at Shelby American were you ever involved with any of the racing programs?

GOODELL: Before I got to Shelby American I had never been involved with any kind of a race car. All of my experience had been with production cars. Carroll called me into his office one day and said, 'I just talked to Mr. Ford and he said we've got to win LeMans again next year.' I hadn't been there that long, and I said, 'With what?' He said we'd start with the J-car. I said, 'Goddamn - we just killed Ken Miles with the J-car, and you had me looking at the wreckage out in back...' Shelby said, 'Well, we've got to fix it.' I said, 'What happens if we don't win?' Shelby said, 'Mr. Ford didn't give me that option.'

SAAC: The '67 Shelby's inertia reel shoulder harnesses were a first for the automobile industry. Do you recall how they came about?

GOODELL: It's funny how you can do

things when you're desperate. We wanted a different seat for the Shelby. We wanted it to be the safest car there was. That's why we put a real roll bar in it. And we were looking around to see what the rest of the industry was doing. Ford wasn't doing anything that was very radical. One day I was out at the airfield and I noticed an F-15 fighter. I peeked into the cockpit and it had this high-backed seat which had shoulder harnesses coming over with an inertia reel up above it. When I got back to my office I called Edwards Air Force Base and asked to talk with the Commanding General. His name was Tuttle, I think. I told him who I was and what we were doing and I told him we were real interested in the seats and shoulder harnesses in the F-15. Was there any chance that we could borrow an F-15 seat? He said, 'Hell yes! Where would you like it delivered?' I gave him our address - 6501 West Imperial Highway - and I'll be damned if an Air Force truck didn't show up the next day with the seat and shoulder harness. They said to keep it for as long as we needed it. And if you com-

pare the 1967 Shelby shoulder harnesses with the F-15's you'll see that they're exactly the same!

SAAC: Did you guys just sit around brainstorming, talking about possible new ideas for these cars or did you do any kind of research like asking dealers or customers what they wanted?

GOODELL: When I arrived at Shelby American I didn't have much experience with the kind of cars they were building, so I started asking questions. Like, what kind of people were buying these cars... and what did they want in them? Everyone had their opinions but nobody could agree on anything. So I had a marketing survey done. A lot of people within the company thought that the average 1967 Shelby buyer was between 25 and 35. Everyone was surprised with the results: the average owner was 63 years old. About 75% were professional guys - and the cars were never raced. There was no question that the 1967 GT500 was the fastest car on record for a while. We could go out and beat a Corvette any time we wanted. I was coming to work one morning with my son, Rick. I lived in Pacific Palisades, and we were coming up Lincoln Blvd.

SAAC: What were you driving?

GOODELL: We were in 'Little Red' - the 1967 GT500 notchback prototype. It had a Paxton supercharger. And a Firebird pulled up along side of us at a light. He raced his engine and when the light changed I stomped on the gas as hard as I could and held it down. One of the things with a supercharger is that it takes a little while to catch up, but boy - when it does it's like shifting into another gear. We went off about even, probably at 20 miles an hour. All of a sudden the supercharger cut in and I walked off and left him. When we came to the next light we raced again and the same thing happened. Well, he followed me into the factory - he went right through the gate off of Imperial Highway and got out of his car. He was madder than a sonofabitch. He said, 'Goddammit, I've got the fastest Firebird in Venice. What the hell have you got in that car?' I told him it was only a GT500 - he could look for himself. He said, 'It acted like you shifted or something. What did you do?' I said, 'I don't know what you're so excited about. Just keep racing Firebirds. Don't race any Shelybs.' He walked away and was so mad he was talking to himself. He never looked under the hood, and when a supercharged car is idling you can't tell the difference.

SAAC: Wasn't 'Little Red' a 1967 notchback prototype that was eventually updated to 1968 specifications?

GOODELL: Yes. It had 1968 fiberglass as well as a 1968 engine.

SAAC: There was also a prototype convertible built in 1967, wasn't there?

GOODELL: Yes. That car was also updated to 1968 specifications.

SAAC: That car is presently owned by a SAAC member. He initially had a very dif-

ficult time convincing everyone that it was a genuine 1967 Shelby. You can imagine - everyone knows the convertibles weren't built until 1968, and this car had a lot of 1968 parts on it.

GOODELL: How did he ever get that car? It was supposed to have been scrapped.

SAAC: Little Red hasn't turned up yet.

GOODELL: Little Red was scrapped. I'm sure of that. The 'Green Hornet' was, too.

SAAC: The 'Green Hornet'?

GOODELL: That's what we called another convertible prototype we built. It was actually a California Special we bought from the Ford Division. It had an experimental 428 Cobra Jet engine with Colelec electronic fuel injection, a Conolec high capacity fuel pump mounted in the gas tank, a special automatic transmission, 4-wheel disc brakes and '68 Shelby hood and nose, taillights, fog lamps and insignia. It was painted Gold Lustre Green lacquer with GTX 500 KR side stripes. This car really moved out: it hit 157 MPH at Ford's Romeo Proving Grounds. It would do zero to sixty in 5.7 seconds and zero to 100 in 11.4 seconds. Here's a funny story about that car. When I moved to Southern California I lived in Pacific Palisades, in an apartment complex called the 'Polynesian Village'. We often had trouble getting technical people out at Shelby American. That was one of our worst problems. I got an engineer from Dearborn and brought him out to do some special work for us. He stayed at the Polynesian Village and he took that convertible home one night. The next morning, at about 6 o'clock, he knocked on my door and said, 'Somebody stole the car.' We went down to the space in the parking garage where he had left it and it sure was gone. Clean. I called the Los Angeles Police right away and the auto recovery squad guy came out to investigate. He said a car like that was probably across the border by now. Lo and behold, about three or four days later they found it - up at the top of Palos Verdes - stripped. And whoever did it was an expert. They took the engine and they took everything else off of the car but they didn't leave a mark on that automobile. When they stole the radio they disconnected all of the wires - they didn't cut them. Everything was taken off very carefully. When they took the wheels and tires they put the lug nuts back on the studs. We never found out if it was a gang or just a couple of individuals.

SAAC: What happened to the car after that?

GOODELL: We rebuilt it. But when we were finished with it it was scrapped.

SAAC: Did you have anything to do with the 1968 Mustang GT/CS - California Special?

GOODELL: Sure I did. That idea came from 'Little Red'. We had Little Red in a show in Los Angeles and the Ford District Sales Manager saw it. He called me up and said he would like to come in and talk with us; he wanted to know how we came up

with that car. He came in and we told him. He asked if it was practical to build that type of a car from a regular Mustang. We said it was, and that they were welcomed to use any or all of the parts that made up the Shelby. After all, we were all a part of the Ford Motor Company. They had a couple of meetings and decided that the only parts they wanted were the side scoops and the rear deck and taillights. They didn't want the hood, nose or roll bar and shoulder harnesses.

SAAC: The Paxton supercharger was an option on the 1966 GT350, and it was carried over to the 1967 and 1968 models but apparently not too many were sold. Any idea why?

GOODELL: If somebody wanted more power in a GT350 they just bought a GT500. The Paxton was more expensive. The Paxton option added about \$500 to the purchase price of a GT350 and that made it more expensive than a GT500. [Advertised retail price of a 1967 GT350 was \$3,995. The GT500 was \$4,195. The Paxton option listed for \$549. 1968 GT350 fastback list price was \$3,155; GT500 fastback listed for \$3,309.]

SAAC: Was there ever any thought given to offering a Paxton supercharger on the GT500?

GOODELL: Yes, we had hoped to market a Paxton-equipped GT500 but that never happened. After we built Little Red and it had been on display at that show in Los Angeles my secretary came into my office one day - she was a cool, unflappable gal and she was all shook up. She said there was somebody on the phone who insisted on talking to me. I was in a meeting at the time but my secretary said he was so abusive that she didn't know what to do. I told her to put him on the squawk box. It was Andy Granatelli. 'Is this Fred Goodell?' he said. I said it was. 'Are you the Chief Engineer at Shelby?' he asked. I said that I was. 'Then where in the god-damned hell did you get the nerve to put a Paxton blower on a 428?' I said, 'Who the hell is this?' He said he was Andy Granatelli. I said, 'Well, I don't know who the hell you are and I don't really care. But let me tell you something. Just in case you don't know this - that's our car. We bought the damned blower and I'll put it on any car I feel like.' And I hung up. Then I thought, 'Holy \$#!t! I'll bet that's a friend of Carroll's.' So I excused myself from the meeting and walked down the hall to Carroll's office. I said, 'Carroll, I think I just screwed up.' He said, 'What's the matter, Boy?' I told him that I was afraid I had probably insulted a friend of his and then hung up on him. He asked who it was, and I repeated the conversation. Carroll leaned back in his chair - I thought he was going to tip over backwards - and he laughed and yelled. He said, 'I'd have given a thousand dollars to have seen the look on his face! If he calls back, give it to that sonofabitch again!'

SAAC: What were the final days at the West Imperial Highway plant like? We've heard stories about things being thrown away by the box and by the 55 gal. drum.

GOODELL: It was probably the worst sight I ever saw. And it was pretty confusing. There was stuff all over the place and nobody was sure what was what. There were about 50 427 engines that disappeared and were never seen again. The last thing to go was my wife's Cougar. It was a company-leased car and Ford insisted on shipping it back rather than capitalizing on it in California and giving me another one in Michigan. The bean-counters are sometimes hard to understand.

SAAC: Did you do any wind tunnel work on the later models with their spoilers?

GOODELL: Most of our 'wind tunnel' work was carried out on the salt flats. We worked on spoilers and hood opening shapes - which we found to be a very critical thing. We did a lot of filming of our tests. As you drove a car, the salt came off the tires and looked just like you were running through smoke. You could see the exact pattern of all of the air around the car. When I first started working with Shelby I asked him what the rear spoiler did. He said it pressed the front end of the car down. I asked him how it did that. He said it did that by the air pressing on the spoiler. I said that should lift the front end of the car up. He said it didn't - it pushed it down; but he didn't know exactly why. I asked two or three other people - including Roy Lunn [*Chief Engineer and head of Ford's Special Vehicles Department and in charge of designing and building the GT40s. -Ed.*]. Nobody seemed to know just why the rear spoilers worked. So I said, 'Let's find out. Maybe that will help us determine what shape the new car should be.' So we went out onto the salt flats, taking the spoiler we were using on the 1967 Shelby, a flat spoiler like the one they used on the Daytona Coupe and one of the plates they were using on the MKIVs. We tried them all and filmed exactly what was happening.

SAAC: And what was happening?

GOODELL: It was real clear what was happening. The rear spoiler keeps the speed of the air over the car the same as the speed of the air under the car. They meet in a vortex, way out behind the rear of the car. If you don't use a spoiler they meet right behind the rear bumper; there's a great big nodule and it's a big hollow spot that keeps the car from settling down. With a spoiler the two air flows meet in a long streamline shape behind the car and that holds the car down on the ground.

SAAC: What's the story behind the NASA ducts that were used on the hood of the '69-70 Shelybs?

GOODELL: We wanted to come up with a new scoop. One of the things wrong with the 1968 hood scoop was that it was noisy. I always objected to the noise - it bothered the hell out of me. So I started looking for some kind of scoop that wasn't so noisy.

I was told there wasn't anything like that, but I knew there had to be - all I had to do was find it. I looked through every technical book I could find until I came across an article in *Scientific American* about a professor who was working on the Mercury space program for NASA. He had discovered the NASA shape, which was patented by NASA. I got found out the guy's name and called him. I told him who I was and that I was interested in his scoop. I said that I understood from reading his article his scoop was as good as a lot of open scoops were - very efficient and all - but what about the noise? He said he didn't know about the noise; why didn't we model one on a hood and check it ourselves? He said he would give us a letter stating we had permission to use it if we wanted to. So we modeled one into a hood and ran some decibel tests. We were surprised to find that at 60 MPH the 1968 Shelby hood scoop was in the 90 decibel range and the interior of the car registered between 70 and 80 decibels. That scoop was really howling. The NASA scoop dropped the interior noise down to 63 decibels. So that's where it came from.

SAAC: If you read anything about Shelby American you get the feeling that after 1966, with the exception of the handful of 1967 Trans-Am notchbacks that were built, they were interested in building only street cars.

GOODELL: Ostensibly that is what we were doing, because they were making the company money. We also continued to do research and development work for Ford. Shelby had some good dynamometers - he probably had the best dyno shop on the West Coast at that time.

SAAC: What was the real reason for moving Shelby production from Los Angeles to Michigan?

GOODELL: There were actually three reasons. First, we couldn't get enough high quality fiberglass parts in the Los Angeles area. Second, San Jose did not want to deliver cars to us anymore. They wanted to expand their production and they claimed that for every car they built for us they lost three regular production units. Third, we wanted to increase our output and didn't see the Los Angeles facility permitting us to do that. John Kerr [*Shelby American General Manager*] and I knew that we would have to move production and the most logical place was in Michigan - near all of the other Ford suppliers. John knew somebody at a company named A.O. Smith. He had been involved with some special Ford dream cars and had used A.O. Smith for the fiberglass work. John had also learned that Smith's Ionia, Michigan plant had just lost the contract for the Corvette work they were doing. He suggested that I go back and look the facilities over to see if they had the capacity to handle the production of our Shelybs. He told me to go incognito - he would make up some kind of a story that I was just looking at

fiberglass facilities and so forth and he called ahead. I looked the place over. They had a big plant and they had obviously done a lot of fiberglass work. They could handle us. Everything looked pretty good, so I went back to California and told John what I had seen. Then we both went back there and presented them with our idea. To our amazement, they jumped at it like a bass in a quiet pond. They were really eager because without the Corvette contract they didn't know what they were going to do with that plant.

SAAC: When was the actual move made to Michigan?

GOODELL: Shelby Automotive was formed in September, 1967 and was incorporated in Michigan. We actually moved everything from California in December of that year. We started building cars at A.O. Smith immediately.

SAAC: Why were the 1968 Shelybs built at Ford's Metuchen, New Jersey assembly plant instead of in Dearborn?

GOODELL: Because Metuchen could best afford to give up the production to us. Dearborn couldn't.

SAAC: Then why weren't the 1969-70 cars built at Metuchen also?

GOODELL: We had trouble with cars getting lost in shipment between Metuchen and Ionia. They came by rail, and we had to shut down production one time because a load of cars got lost. They were found on a siding in Metuchen. We also had a lot of trouble with pilfering and damage to the cars while in transit.

SAAC: The 1968 Shelby showroom literature makes mention of a 427 engine option in the GT500 - hydraulic lifters and automatic transmission only. However, we have found nothing else from the factory - other than ads and showroom literature - to back this up. Can you recall anything about building 427 powered cars in Ionia?

GOODELL: I don't remember any 427 cars being built as a regular option. A couple were built as favors for Shelby's friends or as special project cars, but as far as somebody walking in off the street and ordering one from a dealer - no.

SAAC: We've seen photos of A.O. Smith's facility in Ionia. It looks plenty big. Was it big enough?

GOODELL: Oh, yes. In fact we not only increased 1968 production by some 25% over 1967 production but we also built all of the Gurney Cougar XR-7Gs with the sunroof and the special Thunderbirds with the sunroof.

SAAC: Did we hear you right? All Gurney Cougar XR-7Gs were built at Shelby Automotive?

GOODELL: That's right.

SAAC: Well, it looks like the prices on Gurney Cougar XR-7Gs just took a jump. Did the Gurney Cougars come under the corporate banner of Shelby Automotive before they were invoiced to Mercury?

GOODELL: No. We handled it the same way as if we were a division of Ford at that



The prototypes were hand-built cars, assembled from one-off parts well in advance of production. They were photographed and sometimes these photos were released to the press because

magazines have a 2-3 month lead time and the idea was to break the news of the car in the magazine at the same time it became available at the dealerships. The two 1968 prototypes pic-

tures here have different GT500 side markings - neither of which were used on the actual production cars. Photos courtesy of Fred Goodell.



time. It was an inter-division transfer; those vehicles were transferred to us on a note - a memo invoice - and then we finished them and billed them back at the delivered price. In addition to the XR-7Gs and sunroof Thunderbirds, we were going to build a Lincoln limousine in 1971. We had finally gotten the Lincoln Division to agree that, yeah, they needed a limousine to compete with Cadillac and since they could never fit it in with their own plans, we could build it. That program never got underway because Shelby Automotive ceased operations before it could get started.

SAAC: Were there any other long-range plans that were killed when Shelby terminated the Shelby Mustang program?

GOODELL: The original plan, after the early Shelybs, was to build about 6000 cars a year. They would be available through all Ford dealers. As a matter of fact, at one point we discussed building a complete Shelby line of cars - a 2-seater, a 4-door and a fastback. And maybe make it a separate companion line to the Ford cars. For a long time there has been, within the company, a feeling that Ford needed something to replace the 2-seater Thunderbird. Not that we ever sold that many 2-seaters, but it was an image car. We obviously did a lot better with the 4-seater Thunderbird in terms of sales, but we did not have an image car like the Corvette. I don't know if you understand how the Corvette program is set up within General Motors, but it is set up to actually lose money. They're willing to build them at a loss because they feel they get such good publicity from that car.

SAAC: You worked for Ford and you worked for Shelby so you can compare them. What were the main differences?

GOODELL: When I think back at the kind of operation we had, we weren't any smarter than the Ford Motor Company. You don't get smart just by moving to California. But we weren't tied down with a big bureaucracy all of the time. We could move fast. Big companies get so involved in their own paperwork that they just can't move quickly. I know that a lot of people recognized that. Henry Ford II recognized it, too. We could get the stuff quick. I think probably that if we had continued we would have been the guys that led with electronic fuel injection. Because we were sure way ahead of everyone else on that.

SAAC: Was that the Cololec system?

GOODELL: Yes. It was done by a guy named Dave Long. He had previously done the Bendix fuel injection system. He left Bendix because they didn't want to move ahead with such a unique thing. He knew of some mechanical problems with the Bendix system and they didn't want to address them. So he formed his own company and called it Conolec. Dave was probably the greatest electronic engineer I've ever run into, but he's not a businessman. He was horrible at that end of it. Conolec was in financial trouble and we went to the Ford people who could have purchased Conolec.

We wanted them to take an interest in the company; to give them some money and get them going again. The morning that Dave was supposed to meet the Executive Vice President and two other V.P.s of the Ford Motor Company - a meeting which I had arranged - Dave refused to get out of bed at the motel.

SAAC: Getting back to the 1968 Shelybs, did they share all their mechanicals with the Mustang (other than add-ons like valve covers and intakes)?

GOODELL: No. They had special springs that were unlike anything on the standard Mustangs. They were 'dual-rate' springs. In the front, the coils were wound so that the top coils were closer together than the bottom coils were. The more you compressed the springs, the higher the rate. We did the same thing with the rear leaf springs. They were arched in such a way - they were specially made by a spring company down in Toledo - so that the more load you had on the tips, the more contact you got - so the rate went up. When you were riding along on a normal highway, you'd never know you had them in there. They were strictly for the Shelby. So were the anti-roll bars. We designed those specifically for the Shelby. We changed the end bushings - instead of using a solid rubber bushing we used one that had an air chamber in it. The reason for that was to try to take the harshness out of the ride.

SAAC: How did the Cobra Jet engine come about, mid-way through the 1968 model year?

GOODELL: We all realized that the 427 engine was hard to get because of the cross-bolted main bearing caps. They were pretty nearly made by hand and they were just tough to get. Carroll got the bright idea one day. He asked what would happen if you took a 427 crankshaft and put it in a 428 Police Interceptor block? Well, you'd get the same displacement as the 428, obviously. But what kind of an engine would that be? It would be a hell of an engine. 'Can we do that?' he asked. We could, and we did. We ran it on a dynamometer and it looked pretty good. So we started putting a few of them in cars and that's how it was born.

SAAC: What heads were used?

GOODELL: I think the compression ratio was 9.5:1 so that would have been the Medium-Riser. The Low-Riser heads were 10:1. Then we went from that stupid dual 4-barrel carburetor set-up to a single 4-barrel. I don't know where that dual quad thing came from but it didn't come from me! Nobody in the world is going to make that work - including the people who made the carburetors. We went to the big four-barrel carb and that was a hell of an improvement.

SAAC: How did the GT500 KR get its name?

GOODELL: It had something to do with the hit song 'King of the Road' by Roger Miller. He bought the first one.

SAAC: We understand it was because Shelby heard Chevy was going to use that name on a big block Camaro and he beat them to the punch by using it first.

GOODELL: That may have been part of the story; I don't know. But I do know that Roger Miller got the first car, and it was a yellow one. I remember that.

SAAC: According to the serial numbers we've collected, there wasn't one change-over car. A bunch of KR's were built, then some GT500s, then more KR's, then some more GT500s.

GOODELL: That was because we were having trouble getting the Cobra Jet engines. We had to phase into the KR because Ford's engine division was reluctant at first. They became more positive later.

SAAC: More 1968 Shelybs were built than any other year: 4,450 cars. After that production declined.

GOODELL: We had all kinds of problems. First of all, we decided that we were in so much trouble with A.O. Smith that we didn't want to run too many cars. We were building the Thunderbirds and the Gurney Cougars, too. Besides that, we were having a little bit of a problem with the profit picture on the cars. The price had gotten pretty high. You'll find that the 1969 Shelby was a pretty expensive car for its day. If I remember correctly, it totalled out at somewhere around \$5,000. [*List price for a GT350 convertible was \$4,753; GT500 convertible was \$5,027. -Ed.*] And that started to get into our way a little bit. Then we ran into Ford Division resistance. They were actually afraid of Shelby. They were scared to death of Carroll Shelby; they thought he was going to hurt Mustang sales. I never could see what difference it made: you sold Mustangs or Shelybs - who cared?

SAAC: If Shelby had stayed in business after 1970, when do you think they could have expanded to an entirely separate line of cars?

GOODELL: In 1972. We needed a 4-door model and we needed that 2-seater. It would have been a mid-engined design.

SAAC: Was that car going to be called the 'Lone Star'?

GOODELL: No. That was what it was called when it was originally started. The original idea of a mid-engined car was Carroll's.

SAAC: The engineering studies we have copies of for the Lone Star - code-named 'Cobra III' - were dated 1965.

GOODELL: John Wyer sent us the first clay model in 1967. That was the first clay model I saw. It was built by Len Bailey and the engineering group in England.

SAAC: Was this going to be called a GT350 or GT500 or given some designation to indicate whether it was a small block or a big block?

GOODELL: It never got that far. Ford management leaned towards one design - based on a Cougar chassis - primarily



Carroll Shelby wasn't really happy about the new Shelby snake logos used on the 1967 cars. They were essentially flat and he wanted something a little more three-dimensional... something a little heftier... something with some class. As Shelby described it, he wanted something that looked like it had 'the Tiffany touch'. Shelby American retained the services of a jeweler who came up with the three-dimensional snake that became the Shelby emblem on the 1968-70 models.

because it was a take-off based on a lot of pieces already in the system. The underbody, for example, was already in existence - whereas the Lone Star was completely unique. I'm not certain but I seem to recall that the frame was made from square tubing. The clay model used to be in Carroll's office.

SAAC: What engine would have gone in it: 302? 351?

GOODELL: The 351. We probably would have gone Windsor. We had a lot of indications that all was not as advertised with the Cleveland engine. I had a long conversation with an engine designer on that subject one day. He believed that the bigger you got the valves, the better you were. But if you get the valves big enough you cut down the velocity and then you get a mixing problem - and that is not unique to FoMoCo engines. That's why there were some 3-valve designs for various engines. You wonder why they don't just use two big valves. The reason is that two smaller valves just for the intake provide a higher velocity by going through a smaller opening - and they get the same volume by using two small valves as they do by using one large one. The charge in an internal combustion engine is really a very important step because the burning - if it is to be efficient - has to take place in every corner at

once. You can't have one corner that doesn't burn. That was one of the things that was wrong with the Cleveland engine. We started running comparison tests at 'Ionia International Airport' - what we called the local airport's runway. We put a 351 Cleveland in a GT350 started to drag it against a stock one powered by a 351 Windsor. There was so little difference between the Windsor and the Cleveland that you could hardly tell. Sometimes the W car was faster and sometimes the C car was. There really wasn't any great difference. So I think we would have gone with the Windsor. And it would have been cheaper, too.

SAAC: Why wasn't a sunroof optional on the 1969-70 Shelbys? They were already doing them right there at A.O. Smith on the XR-7Gs and T-Birds...

GOODELL: The Shelby didn't have enough headroom. When the roof cut-out comes back it also drops down and you lose about an inch or so of headroom. That makes it very uncomfortable for a taller driver. I know because we built one.

SAAC: In 1969 Ford offered rear-mounted batteries on some of the Bosses. Was that ever considered for the Shelby?

GOODELL: Yes. As a matter of fact we built some cars like that but we decided it wasn't worth the extra cost. The performance gain was negligible. We also looked at different suspensions. We had several Shelbys built with coil spring rears. These were 1969 models. One had 4-wheel disc brakes. In fact, we patented that set-up. We also looked at anti-skid braking. We backed off that when the cost came back because it was more than we planned. It was supposed to come in at about \$100 per car but the final price would have been \$250 per car and we thought that was too much money. It was an electronic set-up built by Kelsey-Hayes. We also built some cars with Borrani wire wheels.

SAAC: Was there ever any thought given to using an engine larger than the 428?

GOODELL: We decided that we couldn't

go any larger than the 427-428 block - particularly after we saw the fiasco that the Boss 429 was creating - where they had to move the shock towers. We wanted to maintain the integrity of the car as much as we could and we decided that if we wanted more power we'd get it by supercharging or by turbocharging or by fuel injection. Or by some combination of them. We built one car that did have both - it was turbocharged and fuel injected.

SAAC: When was that?

GOODELL: That was a 1970 model. It was a Garret turbo and a Conolec fuel injection system. That car was a honker, too.

SAAC: Typically, what would happen to these experimental cars - Shelbys with four-wheel discs, sun roofs or 351 Cleveland engines? Would they be returned to production specifications and sold as used cars?

GOODELL: No, they would be scrapped. I say that, but I never really trusted the comptroller we had. He might have sold them. I was told that 1967 convertible prototype was scrapped but you say it is still around. I never signed the scrap sheet so I don't know for a fact if the comptroller did. He was a penny-pincher from way back. But they were supposed to be scrapped.

SAAC: Do you recall anything about the pink 1969 Shelby that was given to the 1969 Playboy Playmate of the Year?

GOODELL: Sure. It was a GT500 convertible. It was painted pink in our shop at Ionia. And it was also used in the homecoming parade in Ionia before it went to Playboy.

SAAC: You drove a lot of cars during the time you were at Shelby's. Which one was your favorite?

GOODELL: No question - Little Red. I really liked that car. It had a nice feel to it. And as a notchback it sure looked different from all of those fastbacks. And man, did it move.



'Little Red' was Shelby American's 1967 notchback prototype, serial number 67411H9A00131. It was not only Fred Goodell's favorite but it charmed just about everybody else who drove it, too. Powered by a 428 big block which was assisted by a Paxton supercharger and backed by an automatic transmission and tall rear end gears, it packed a punch that most journalist types weren't ready for. Their reports include the almost obligatory chirping of the tires

at 80 MPH, achieved by stomping on the gas to catching passing gear. Reports of seeing 140 MPH on its speedometer were also common. Shelby loaned Little Red to *Car and Driver* writer Charles Fox in 1968 and after a trip from Riverside into the desert and back on California's Highway 60, Fox was apprehended, arrested and threatened with 30 days in the slam. It was subsequently reduced to a \$500 fine - all duly reported in the April '78 issue of *C&D*.