THE AUTOMOBILE BUSINESS – FROM THE BOTTOM UP

By John Hinckley

Lots of high-profile books have been written about the automobile business by authors such as John DeLorean, Lee Iacocca, and Bob Lutz, but they're all from the top down, with a strategic or marketing focus. To my knowledge, no one has written anything about the business from the bottom up – from the factory floor and the Engineering offices, from a first-person insider perspective. I spent 37 years (21 with GM, 16 with Chrysler) working my way up from the factory floor, "where the action is every day", through many plant-related Manufacturing and Engineering assignments, and retired in 2001 after five years as an assembly plant manager. I kept notes during those years of what were, to me at the time, significant events along the way, and decided to put them all together as a chronology through the first twenty-one years. These are the stories and remembrances that outsiders never hear, the stories that don't make the papers, but they're the stories and events and people that shaped the business from the inside for the guys that kept the machine humming every day down in the trenches. It all started for me at age 23, in late 1964.

1. WILLOW RUN, 1964-66:

I hired into Chevrolet on Ford's travel and interview money. Ford sent me an interview invitation when I was about a month away from getting out of the Army in Texas, along with round-trip plane tickets. I took the trip, picked up a Ford company car at the Detroit airport, and spent two days at the Ford Livonia Transmission & Chassis Division Plant, shadowing the Production Manager. There was a constant stream of people in and out of his office all day long, both days, asking for decisions and approvals to do all manner of what appeared to me to be pretty routine things. During my exit interview at the end of the second day, he asked me what I thought about working for Ford. I told him I'd think about it, but that it seemed to me he had made every single decision in the whole plant all day long. He motioned me outside the front door of the Plant, pointed up at the big blue oval "Ford" sign on the wall, and said, "I guess you're right, John – but see the name up there? That's the way he likes it".

I left (in the Ford company car), and had a couple of hours before my flight back to Texas, so I decided to drop in at the nearby Chevrolet assembly plant at Willow Run as long as I was in the area. I asked to see the Personnel Manager (Chuck _____), and we had about a 15-minute conversation. He made no commitments, but said he'd get back to me, and thanked me for dropping in. I headed for the airport, dropped off the car, and hopped my flight back to Texas.

About a week later, on the same day, I got two letters - a formal job offer from Ford to

join them as a trainee at the Livonia Transmission Plant, and an offer from Chevrolet to join them as a trainee at the Willow Run Assembly Plant. Based on what I had observed during my two days with Ford and the fact that I had always been a GM guy, I graciously declined the Ford offer, accepted the Chevrolet offer, and started work at Willow Run as a College Graduate In Training a week after I left the service. I was still driving the 1962 Corvair Monza I had bought just before graduating from college, and a week later traded it in on a new 1965 Pontiac GTO – got some strange looks at the plant when I showed up in a Pontiac!

The idea of the CGIT (College Graduate In Training) program was to spend two or three weeks in each department of the plant and rotate from one assignment to the next in order to get an understanding of how the whole system worked, and to allow the Management to evaluate a trainee's performance and aptitude for different work situations before making a permanent regular work assignment.

My first CGIT assignment was in the Purchasing Department. The Purchasing Agent was not a rocket scientist, and apparently did his best while going to lunch with vendors. His secretary (Dorothy _____), really ran the 2-person department, did all the work, negotiated with the vendors, and taught me the administrative ropes in about a week. She then went on vacation for a week while I filled in for her, and it went pretty well. Hardly heard a word from the Purchasing Agent during the whole week. So much for Purchasing.

My next assignment was in the Material and Production Control Department, which was located next to the Traffic Department. The Traffic Manager (Charlie Trabandt) was nicknamed "Garbagemouth Charlie", as he swore, screamed, and yelled into his bullpen area full of clerks constantly. The Management wouldn't let Charlie out on the plant floor because the hourly people would revolt if they were humiliated that way. Willow Run was the only assembly plant in the system that had two Traffic Managers -- one for the office, and one for the plant floor.

The Comptroller was an alcoholic, and enforced a very strict dress code for his Finance employees. The women couldn't wear a sweater draped over their shoulders (it had to be properly worn and buttoned), and he wouldn't allow any of his people to eat with or talk to Production supervision – we were looked down upon as "those animals in the dirty short-sleeved shirts". He wrecked his assigned company cars one after another while driving drunk, and the Plant Manager finally took his company car away and made him drive his own personal car to work. He later got his company car back anyway through friends in the Financial power structure at Central Office (Plant Controllers didn't report to the Plant Manager - they reported to the Finance Group at Central Office). At the plant Christmas Party for the salaried employees shortly after I came to work as a CGIT, he damn near drowned in a toilet when he passed out while on his knees while vomiting in a stall in the Men's Room at the Banquet Hall. A friend of mine from Plant Engineering happened to notice his shoes under a stall door (toes

down), heard gurgling sounds, and dragged him out under the stall door. He sure knew how to set the example…..

My final assignment in the CGIT program was to do hourly assemblers' work on the production floor for three months, working wherever I was needed on the line to cover absentees and vacations. During that time we were building Corvairs and Chevy II's together on the same line at 65 per hour. I really enjoyed it, as I had been a hot-rodder while growing up, built and drove my own race cars, and was good with my hands and tools. I quickly became "the Production foreman's friend", as I could do any line job that needed to be covered with only a few minutes' training, and I was "free" – I didn't count against their manpower budget or daily efficiency, as I was carried on the plant's G&A budget as a Trainee. I spent most of the assignment as a line repairman, a reliefman (doing people's jobs while they took their 8-minute break), and as a utilityman, doing just about anything that needed to be done on any line.

As a result of this assignment, the Production Department decided they wanted me, and I was formally promoted from Trainee to Production Foreman (a "Member Of Management", as they put it), and was given my Chevrolet Management Pin, and the Chassis Line, with its 83 employees. I spent the next two years running the Chassis Line (where the undercarriage, suspension, and drivetrain was assembled and the finished body was mated to the chassis). It was the hardest two years of my entire career, but that's where you get Manufacturing Basic Training and learn how to get things done.

The Production Manager (Al Perttola) ran everything, and always had a huge cigar clenched in his teeth. Al, I'm sure, was the originator of the "scream, yell, rant, rave, kick ass and take names" school of management, which was the prevailing theory in assembly plants in those days. I had never met him during my CGIT assignment on the line, but I had heard the stories. The first day I was a genuine Foreman with my own line, the Engine Line got out of sequence with the main body line, and a Corvair body came down into my Chassis Line (to have the engine and suspension installed from underneath) with a Chevy II chassis on the insertion lifts underneath it. Those two chassis are completely incompatible so we had to shut the line down for a few minutes and manhandle the insertion lifts around to get the correct engine and chassis sequenced in position. This took four or five minutes, and when the main line was shut down, lights came on in overhead marquee boards all over the plant that showed where the line was being held, and "white shirts" came from everywhere to see what was wrong.

Someone with a big cigar tapped me on the shoulder while we were rushing around getting things back in sequence, and I told him "not now, I'm busy". When we got the mess straightened out and turned the main line back on, I walked back to my stand-up Foreman's desk in the middle of the line, and there was the big guy with the cigar, standing at my desk. He looked at me and asked "Do you know who I am?", and I said

“No, who are you?”. He said “My name’s Perttola – I’m the Production Manager, and I run this place – you’re Hinckley, the new guy, right?” I said “Yeah, I’m Hinckley”, and shook his hand. Then he said “Hinckley, did you go to college?”, and I said “yes, I did”. Then he asked “How many degrees you got?”, and I said “one”, and he bit down on his cigar and said “Well, don’t get any more – the asshole you just replaced had two, and he was double-stupid”, and he walked away, hopped on his electric scooter, and took off down the aisle looking for another victim.

Al was incredibly excitable and short-tempered, and felt that the cure for almost any problem was to fire people. One day we had high absenteeism - a lot of temporary “absentee pool” workers (including janitors and sweepers) were trying to cover open jobs and the Engine Line was running a lot of repairs (meaning the engine line jobs were not being done correctly). When Al saw how hard the end-of-line repairmen were working to keep good engines going to the Chassis Line, he had one of his patented “fits” and walked down the middle of the engine line and "fired" half the people, then turned to me and said "catch it with your goddamn repairmen". Sometimes he’d show up from out of nowhere, pull a guy off an operation without telling his foreman, put the guy on the back of his scooter, and take him to a job somewhere else.

He came by my Chassis Line one day and saw something he didn’t like, screamed and shouted at me in front of all my hourly people, and "fired" ME. I wasn’t about to take that kind of humiliation and abuse in front of my people, so I threw my ring of keys at his feet and screamed back at him, “Here, asshole, if you’re so Goddamn smart, YOU run the sonofabitch”, walked out to my car, and went home. About five minutes after I got home, in the middle of the day, the Personnel Director called and told me I could come back to work, as “Al didn't really mean I was fired”. I told him I didn't get paid enough to be humiliated like that, and they could take their job and stick it unless Al apologized to me personally. Al apparently didn’t think much of that, and the Plant Manager called me about 20 minutes later and said I should understand “how Al is”, and that I should come back to work. I told him the same thing I told the Personnel Director, and said they could mail my check unless I got a personal apology. Al called me about 30 minutes later and apologized, and we got along fine from that day on (I think it was the first time in his life he <u>ever</u> apologized to anyone for anything, and he continued berating everyone else – except me – just like always).

My Lead Chassis Line Repairman (Karl _____) was a big German, who had emigrated from Europe as a Millwright, but gave up Skilled Trades for a line job. Karl was about 6’-3” and 280 pounds, spoke in a thick accent, and couldn’t stand line operators who had less than a 100% effort work ethic. Karl’s job was to repair things that the line operators couldn’t put together, and he could work all day long without complaint if partially-done or missed operations came his way for good reason. But God help the operator who was just lazy or wouldn’t put out the extra effort to deal with the occasional problem to get his operation done. If several unnecessary repairs came down the line from the same operator, Karl would walk up the line to the operator, pick

him up off the floor with one hand, and threaten him at the top of his lungs with dire consequences if he got one more unnecessary repair from that job. Quality was generally assured from that operation for the rest of the day, as Karl mumbled about the “no-good lazy bastards”.

Even after 50 years, there are some hourly operators you just can’t forget, for one reason or another.

Bobby Boynton, who installed exhaust systems from below on my overhead Chassis Line, where the car was six feet off the floor, had incredible assembly skills, and probably didn’t weigh 135 pounds soaking wet. On a Corvair, he carried the whole exhaust system to the car, along with sealing gaskets, flanges, nuts, a muffler strap and bolt, and could do the whole job with about ten seconds left, all day long, any day of the week. On a Chevy II (every other car), Bobby had the deft touch to install the driveshaft and attach it to the rear axle flange, without having the universal joint fall apart and spill needle bearings all over the floor. If Bobby was absent, I knew we were going to have a BAD day, and so did Karl – it usually took three absentee pool people to replace Bobby, and repairs came off that job all day long. One day Bobby decided he had too much work, and filed a “Paragraph 78" grievance, which was a strikeable issue if it wasn’t settled expeditiously. Karl did Bobby’s job when the Industrial Engineers and the Union came to time-study the operation and he never missed a beat – Karl made it look easy for ten minutes, and nearly died when it was over. The grievance was settled without taking any work off the job, and after the crowd left, Karl told Bobby if he sent any more repairs down the line again he was dead meat.

The all-time champion of manual dexterity was Bob Bolt, who had an off-line subassembly operation that used a complex fixture to build up Corvair front stabilizer bars. The completed bars, with bushings, clamps, nuts, bolts, and washers installed, went down a pipe-slide that held about twenty completed bars ahead of the line job where they were pulled off by the line operators and assembled to the Corvair front suspension. Bob had manual dexterity beyond belief – he could build 240 of them, a whole shift’s worth, in 4 hours and had them stacked in neat piles all around the build fixture by lunchtime. Nobody else could do that job and even keep up with the line. It pissed off my General Foreman to no end when Bob wandered around the plant all afternoon and shot the breeze with his friends, returning every half-hour or so to load up the pipe-slide that fed the line from his neat piles on the floor. Bob could do any of the 82 jobs on the line with his eyes closed, and refused promotions many times to higher-paid Repair, Relief, and Utility jobs so he could just keep on building sway bars and talking to his friends.

The Lead Engine Line Repairman (we knew him as "Homebrew") could do anything when he had a few sips of “shine” in him, and was nearly useless when he was sober. He had a huge toolbox at the end of the Engine Line, and we all knew he had more in it

than just tools, but ignored it, as he could do more work than three people and had a great, cooperative disposition if we left him alone. In those days we built a lot of turbocharged Corvair “Spyders” and Corvairs destined for California, which had four carburetors and GM’s first “K19” air-injection pump smog system. Both of those engines were very complicated, with lots of added parts that were very difficult to assemble and very few of them arrived at the inspection/repair station at the end of the Engine Line completely assembled, especially on a Monday or Friday. “Homebrew” simply viewed these “hand-grenade jobs”, as he called them, as a challenge to his ability as a Line Repairman, and he built lots of Turbo engines and California 4-carb K19’s by hand, carrying all the loose parts, using hand tools, while walking along fifteen feet in the air on the steel mesh screen guarding under the overhead engine delivery conveyor that took the engines to the installation point on my Chassis Line. After one of these displays of prowess he’d stop at his toolbox, disappear behind a stock rack for a few seconds, and then stop at his toolbox on the way back to his repair station bench at the end of the line. When properly pickled, as he always was, “Homebrew” was the finest Line Repairman we ever had, and he hardly ever missed a day – his wife wouldn’t tolerate him missing any time.

I only had one man out of my 83 that ever really worried me. Tom Schafer installed the stabilizer bar, shock, and brake hose to the left side of the Corvair front suspension just before the unit was raised up into the car. Tom was a stocky black man, always wore a beret and very dark sunglasses, always ate alone, and never said a conversational word to anyone for two years. All he ever said to me was “don’t talk to me – I’m here every day, and I do my job – that’s enough”. I gave up, figured he was crazy, and ignored him.

My General Foreman (Harry Gensler) emulated “Big Al” – chomped on a cigar, screamed and yelled, but always ducked behind stock racks when there was trouble and all the “white shirts” showed up. He never knew what was going on and didn't want to show his ignorance. He had a real complex, as he never went to college, and all five of his Foremen were college graduates. We only saw him once a day when he came around in the morning to dole out the absentee replacements from the labor pool, and during lunch when he’d call a “Production Meeting” and rant and rave at the five of us. Harry spent most of the day in the Material office near the receiving dock drinking coffee.

We had a communication system in the plant in those days called the “Femco System”. You could pick up any phone on the production floor, push a button on the handset, and it became a plant-wide loudspeaker public address paging system. You’d push the button, holler someone’s name twice, and they could pick up any phone in the plant and answer you on the phone – you generally reacted based on the level of panic of the voice on the P.A. speakers, but you couldn’t ignore it (unless you were out of the plant). Harry used to love to grab a phone somewhere, push the button, and holler like a madman for one of us to berate us over one thing or another, but seldom showed up

in any of our work areas.

When Bill Hopp was the Engine Line Foreman (and also reported to Harry), Bill also had the Chevy II “Stub Line”, where the engine compartment “box” structure and front suspension was subassembled. When Bill got feisty, he used to call Harry on the Femco and tell him that Material had run him out of instrument clusters on the stub line (which weren’t used on the line at all) so Harry would get on the Femco and scream at the Material Superintendent and make a fool of himself, then Material would tell him he didn't even USE clusters on the stub line. We loved to see Harry make a fool of himself – it was so natural.

Harry hated me because I ran the toughest area in the plant and he couldn't handle it himself. I'd go to a salaried training class for an hour and call him to cover me and he'd never be there when I got back - the guys on the line would send enough junk down the line to drive Harry and the repairmen all the way into the brake bleed pit. Then Harry would disappear to the end of the Final Line, on the other end of the plant, and let the line run itself (which it did when he wasn't around). Harry had a terrific argument one day with the Personnel Manager over why his foremen had to be pulled off the floor one hour a week for “Personnel’s stupid training programs”, but nothing changed, so Harry stopped covering us for Training – he just said “let your Utilityman run the line, and I’d better not see any shit get out of your area or you’ll be garbage”.

The other General Foreman (John Raubacher) was a bag of nerves - would talk to himself, call himself on the Femco, walk into columns, talk to columns, and constantly demonstrate his total ineptitude, to the total delight of the guys on the line (and us foremen). Sometimes when I went to Training, Harry would call him and have him cover my line (Harry was senior to John). Raubacher would be a complete, frazzled basket case when I came back to the line from class and found him dirtier than the repairmen. He could never figure out why the line smoothed right out when I reappeared after he fought repairs for an hour solid all the way through the brake pit. He was later moved on to the Central Office Quality Group at the Tech Center.

The Maintenance Department was always on call for equipment and conveyor breakdowns, and the Maintenance Superintendent, Jay Vieira, was about 5'5" and 280 pounds. He was always the first one up in the overhead steel when there was a conveyor breakdown, showing the millwrights what to do, instead of directing them from the floor. Incredibly dedicated and hard-working guy who couldn’t delegate anything to anyone – he died in the plant of a heart attack during a production breakdown.

Jay’s Toolroom Foreman, Joe Christian, was a crafty old-timer who had come up through the ranks as an hourly Toolmaker, and had learned that it didn’t pay to get excited about anything, but he got more done with less help than anyone I ever met. When new Chevrolet Central Office Assembly Tooling or fixtures arrived in the plant for new models, Joe would go out on the dock with the Production Manager (more about

him later), have the crate opened, look at the tool and what it was intended to do, and have the crate put in storage. Then he'd go back to the toolroom, and within an hour he'd have a tool made from steel rod and plate stock welded to a pair of Vise-Grips that would do the same job. A terrific "gadget guy", every Tooling Superintendent's dream; Joe took a lot of abuse from short-tempered and excitable Production Foremen, but we all loved him.

Willow Run's Final Paint Repair Department had a great reputation for painting flawless "show jobs" and "lobby jobs" (for the GM Building Lobby display), so the off-line final paint repair guys were always busy painting cars built at other plants for various shows and displays. This didn't go unnoticed by then-GM Vice President and Chevrolet General Manager "Bunky" Knudsen, who sent a seemingly endless stream of cars into Willow Run to be show-painted for his wife and kids. They apparently really liked Kelly Green, as all of his cars were show-painted that color.

Occasionally we built batches of right-hand drive Chevy II station wagons for the Government, which got big decals on the doors with "Hands Across the Sea" on them. They were six-cylinder models with column-shift 3-speed manual transmissions, and the Rube Goldberg shift linkage, bellcranks, and rods and levers that transferred shifting motion from the right side of the right-side-mounted steering column over to the left side of the transmission had to be seen to be believed. I don't think we ever did get one to run off the end of the Final Line under its own power. Most of the right-hand-drive parts were hand-made in small batches by Engineering, at great expense, got lost, and I had to have a Utilityman follow each job all the way down the line, handing out the parts to the operators and trying to get the shift and clutch linkage to work. Then, once they were mechanically functional, on-site Government inspectors nit-picked them to death in Final Process like they were GM Lobby display cars, and it took weeks to get them approved and shipped. I can't imagine what Government bureaucrat decided to have them built as manual-transmission right-hand-drive cars to give away to some third-world country as foreign aid - God only knows where they went, but I'm sure they didn't last long, and didn't leave much of a positive impression of American cars.

The old "Fisher Falcon" first-generation Chevy II was available with a 4-cylinder engine (and sixes and V-8's up to 350 HP). The little 153-cubic inch 4-cylinder engine was a real dog, and shook terribly. The 4-cylinder cars just barely had enough power to turn the rolls on the roll-test machines on the final line. They were such slugs that we had to winch them up on the haulaway trucks using forklifts and cables stretched over the front of the trucks – they didn't have enough power to drive up the loading ramps by themselves. The government bought most of them – probably the same civil service genius that ordered the right-hand-drive column-shift station wagons.

We built a lot of cars for fleet customers, as the Chevy II wasn't very expensive. Most were plain-jane salesman cars, but there were exceptions. We built a fleet of 20 white

4-door Chevy II station wagons in late 1966 for a utility company in Oklahoma (Southwest Oklahoma Gas & Electric, or something along those lines) that were COPO-ordered with the top-of-the-line L-79 350-horsepower 327 engines, dual exhausts, 4-speed transmissions (with customer-supplied Hurst shifters), tinted glass, and air-conditioning (which, in those days, was the same under-dash “cool-pack” accessory unit that the dealers installed). We had to drill holes in the left rear rails for muffler and tailpipe hangers and use Riv-Nuts to anchor them, as the wagon rear rails never had pre-pierced holes or weld nuts in that area. The final line roll-testers loved them, and some guys in Oklahoma must have had a lot of fun driving around checking out their gas wells.

Willow Run was the first GM assembly plant to use tri-level rail cars for shipping finished cars to dealers. The railroad mis-routed a train the first month and it made convertibles out of all eighteen Corvairs on the top deck of the first three tri-levels when it hit a low bridge somewhere in Pennsylvania. They sent the rail cars back and we unloaded the decapitated Corvairs, stripped off all the usable chassis parts, and scrapped the bodies.

The turbocharged Corvair Spyder was a pretty good performer, but they were complex and difficult to build. Not many of the multiple exhaust parts to and from the turbo fit very well, and the throttle linkage had a number of rods and bellcranks that had to be precisely adjusted or the linkage would go over-center and stick wide open. Part of the roll-test procedure was to accelerate through the gears at full throttle and observe the vacuum/boost gauge to verify that the turbo was providing full boost under wide-open-throttle load. One night a new roll-tester had one on the rolls, proceeded into the wide-open-throttle portion of the test, and the throttle linkage over-centered and stuck wide open. He panicked and didn’t have the presence of mind to pull up on the accelerator pedal or shut the ignition off. The engine just kept howling as boost continued to rise. When the flywheel and clutch exploded, the bellhousing disintegrated, separating the front of the engine from its mounts at the transmission, and the engine fell into the roll-test pit, still screaming at full power. This severed the fuel lines, and a fire ensued in the pit under the car. Nearby workers grabbed a fire extinguisher, doused the fire in the pit, and got the terrified driver out of the now-engineless car after he got it stopped on the rolls. Flywheel and clutch shrapnel punched holes through the quarter panels on both sides and went straight up through the back window as well. Good thing the engine was behind the rear seat.

In those days, Chevrolet provided white dress shirts for all the Foremen (all Management people wore white shirts and ties back then) that had the Chevrolet “Bowtie” emblem and your name embroidered over the pocket. On Friday, you’d bundle up your week’s worth of dirty shirts and put them in the laundry bin, and on Monday you’d get a package of clean, starched, ironed and folded shirts from the uniform company to last you through the week. One afternoon I was working with a repairman under the hood of a car in Final Repair, and the battery exploded. Our eyes were

protected by safety glasses, but both of our shirts were splattered with battery acid, which immediately ate hundreds of little holes in the shirts.

When I bundled up my shirts for the week, I attached a note telling the uniform company to replace the acid-spattered shirt, as it was destroyed. When I got my bundle of clean shirts on Monday, there were four good ones and one little tiny one. Some hard-working lady at the uniform company had stitched up every one of the hundreds of acid holes, which had puckered the shirt down to something about the right size for a G.I. Joe action figure, and a note was enclosed saying the shirt had been repaired instead of replaced. After I stopped laughing, I pinned the shirt up on the bulletin board in the Production Office, and everyone got a huge charge out of it. Later that day I took it to the Controller's office and suggested that it wouldn't break Chevrolet's bank to replace the shirt, now that they had spent enough labor on the repair to buy three new ones. He finally authorized the replacement, and I left the G.I. Joe shirt on the Personnel Director's desk later in the day as a souvenir.

While the new 1967 Camaro was being launched in July of 1966 at the Norwood, Ohio assembly plant, a heat-treat problem was discovered in the steering linkage relay rods before any cars had been shipped. One of the first Validation units shipped to the Proving Grounds had a steering linkage failure, which lab tests indicated was a metallurgical problem with the relay rod forged at Chevrolet-Buffalo. There was no room to store or repair the completed cars at Norwood without shutting the plant down in the middle of the launch. So we were notified at Willow Run to cancel two days of production and work whatever overtime was necessary to clear out the Final Process/Repair area and the repair and shipping yards and to get ready to change steering linkages on 1,200 Camaros that would be arriving by rail. We did so, and set up one of the long flat-top repair conveyors that had an open center work pit as a disassembly/assembly line for Camaro steering linkage. We set up drivers to bring them in from the Rail Shipping yard and park them on the conveyor, which moved them down the line. The first part of the line was set up to remove the complete steering linkage and the balance of the line was set up to install new certified linkages. Drivers took them from the end of the line to the toe-in machines for toe-in setting and a roll-test, and then drove them back to the Rail Shipping yard to be shipped. The Willow Run shipping yard was pretty congested for a few days while new truck and rail shipping routings and paperwork were generated for the Camaros from Willow Run to their original destinations.

Special tools were required to pull the pitman arm off the steering gear, and we quickly burned up the only ones we had in the plant. Several repairmen were given cash to go buy all the pitman arm pullers they could find at auto parts stores in the area, and we called the President of Kent-Moore Tools (GM's service tools supplier) out of bed in the middle of the night to get every pitman arm puller they had out of their Detroit warehouse. Between the rail car unloaders/loaders, yard drivers, repairmen, inspectors, material handlers, and supervision, there were about 300 people working

on the parts swap. Final Process didn't have anywhere near enough repairmen, so they were supplemented by the Line Repairmen from production. In the end, we got it all done over a long 24-hour-a-day weekend, and we were back in normal production on Monday.

(_____ Perkins), the Plant Manager of the adjoining Fisher Body assembly plant, which provided the bodies for Chevrolet, was quite a ladies' man. He liked wearing red velvet and silk suits and matching $100 shoes, frequently rode his motorcycle to work wearing custom-made Bates leathers, and parked his bike in the executive garage. He had young lady friends everywhere, and was hardly ever in the plant, although he could be found on the golf course almost any time during good weather.

The bodies were welded together, painted, and trimmed-out complete with all glass, interior soft trim, seats, and hardware by the Fisher Body plant, then shipped "through the wall" dividing the two plants to Chevrolet, where the powertrain, chassis, instrument panel, front sheet metal and bumpers were installed to create a finished car. Fisher Body was "off limits" to Chevrolet people and we weren't supposed to go into their plant under any circumstances. As a relatively new foreman, I wasn't aware of the antagonistic relationship and historical Divisional politics that required this policy (more on this key issue in a later chapter).

Problems arose occasionally on my Chassis Line where baked and hardened body sealer in the threads of welded-in nuts in the body prevented us from installing engine and suspension mounting bolts, and we had to stop the line to clean out the sealer and re-tap the threads before we could install those major components. A "line stop" instantly attracted a horde of higher-level "white shirts" on a dead run from everywhere, and I got tired of the constant hassle and decided to fix the problem myself, as constant complaints to our Inspection Department, who were empowered to talk to Fisher Body, had no effect.

I sneaked "through the wall" into the Fisher Body plant, found the stairs to the Paint Department, and followed the line back through the maze of ovens and spray booths to the sealer line, where dozens of people applied and brushed-out body sealer to all the joints in the body shell before it was painted. After a few minutes, I found where the sealer was applied adjacent to the engine mounting nuts, and noted that the operator in that station cleaned off his sealer brush by swiping it across the panel near the nuts at the end of his operation cycle on each body. I introduced myself, described the problem briefly, and asked if he could avoid that area in the future when he cleaned his brush. He understood, had no problem with it, and said he'd pass it on to his opposite on second shift. I thanked him, shook his hand, and headed back through the Paint Shop maze toward Chevrolet.

I was almost to the door in "the wall" when I was accosted by the Fisher Body Paint Shop Superintendent, who demanded to know what the hell a Chevrolet foreman was

doing in “his” Paint Shop, didn’t I know I wasn’t allowed on the Fisher side of the plant, and on and on. He noted my name and told me, “You stay the hell out of my Paint Shop – all you Chevy jerks need to know is the body comes up here raw and comes back down shiny”.

At the end of the shift I was told to stay after the Production Meeting, and “Big Al”, our Production Manager, tore me a new one for five minutes for going into the Fisher Body side of the plant, and threatened to fire me if it ever happened again. I pointed out that I had tracked down and resolved a problem in ten minutes that the Inspection Department hadn’t been able to resolve in a year of line stops and repairs, but he didn’t care – “stay the hell out of the Fisher plant or look for work elsewhere – Fisher is none of your business”. The logic of this policy escaped me entirely at the time, and the politics behind it finally came into focus twenty years later in 1984 when Fisher Body Division disappeared in “Roger’s Re-organization”. Unfortunately, it was twenty years too late.

After two years in Production at Willow Run, I made it quite clear to the Personnel Director that I wanted a transfer to another plant where I could either get promoted or be in line for promotion, as I knew that Harry would be a General Foreman until the day he died, and I didn't intend to spend the rest of my GM career under him as a Foreman. Nothing happened, so I went out and found another (better) job on the sly, came in the next day and gave him 2 weeks' notice - promote me or I quit. The next day I was called off the floor into the Plant Manager's office and was interviewed by the Director of the Chevrolet Pilot Line (Assembly Research Center) in Flint, and an hour later I was both promoted and transferred to Chevrolet Pilot Operations as a Senior Process Engineer. Harry went nuts – I was now at the same pay grade as he was, and he was called in by Personnel and had to change my evaluation to qualify me for the promotion - he never got over it.

2. CHEVROLET PILOT LINE (1966-69):

Chevrolet Pilot Operations was located at the GM Assembly Research Center on Van Slyke Road in Flint, right next door to the Chevrolet-Flint Assembly Plant. Our job was to work closely with Chevrolet Production Engineering at the Chevrolet Engineering Center in Warren (60 miles away) on the design and assembly processes for each year’s new models. Chevrolet Pilot Operations had to ensure that the released designs were buildable and compatible with plant facilities and processes, conduct pre-production training programs at the Pilot Line a year ahead of production for plant personnel using hand-made prototype vehicles, develop the assembly processes and tooling, accompany the Manufacturing prototype vehicle for each model to the plants and conduct teardown-and-reassembly training programs on-site for plant employees. We also had to build all of Chevrolet’s Pilot vehicles each year 20 weeks ahead of volume production in our mini-assembly plant at Pilot Operations, to be on-site at each

model's "lead plant" (the first plant to launch each new model) to provide Engineering liaison and technical help, and to assist in resolving any start-up problems related to product design, process, facilities, or assembly tooling. My assignment was responsibility for the Chevy II, full-size Chevrolet (Impala and Caprice), and the Corvette through the 1967-68-69 model years, and then I was selected to take on total process and plant re-tooling responsibility for the Chevrolet Vega development program during 1969, to be launched in late 1970, with the understanding that I would transfer with it to the Lordstown assembly plant, manage the plant conversion and launch, and become part of the Production organization.

Each of us spent most of our time at Chevrolet Engineering at the GM Tech Center in Warren, following the detail design of each product we were assigned and providing input for improved buildability and assembly efficiency. We also visited Fisher Body Engineering occasionally, which was right next door to Chevrolet Engineering.

My first visit to a Fisher Body drafting room was a real eye-opener, especially for a guy fresh out of the hectic no-excuses environment of an assembly plant that built a car every fifty-five seconds. I was reviewing design proposals for a new type of window regulator, and spent an hour or so with a window regulator draftsman at his board in a Fisher Body drafting room that was about half the size of a football field. While reviewing the proposals, I asked him what other design areas he had worked in, and he responded that he had been designing window regulators for 32 years. I noticed that the designer at the next board over hadn't moved in about ten minutes, but his eyes were open, and his pencil was on his drawing. I nudged my guy and gave him a questioning look, and he said, "No problem, Hank's asleep – we can all sleep with our eyes open". Suddenly there was a flurry of action all around us, covers were rolled over all the boards in the room, pillows came out of drawers, and we were surrounded by men lying on top of their drafting boards and complete quiet – it looked to me like a temporary morgue after a plane crash. I asked my friend what was going on, and he just smiled and said "lunch hour – time to grab some z's".

I thanked him for his time, and said I'd leave so he could get his rest with the others, and he said, "That's OK, I work through lunch anyway, I'm on overtime". I recalled that he had mentioned earlier that his window regulator design for the next program was all done, and I said, "I thought your design was done". He responded, "Yes, it is, but the whole program is late and on overtime, so I'm on overtime too." I shook his hand and left, wondering how you could keep a project on budget when you paid people overtime whose work was already done. I never forgot that day, and it was fifty years ago.

(Tom _____), the Plant Manager of the adjacent Chevrolet-Flint assembly plant, was forever sending his personal cars and trucks over to Pilot for special work. We were a mini-assembly plant, and had particular expertise in show-quality painting and fabrication (we also did some of the "cutaway" displays for Chevrolet Show & Display to keep our people busy on the floor in between Prototype and Pilot Programs). Tom sent

his new pickup over one week with a new camper on the back and we had to completely re-wire the camper for dual power, install a gasoline generator, insulate it, and reinforce the roof so he and his friends could sit up there and watch the races – we also fabricated folding ladders and railings for it and installed an air-conditioning unit for the camper, plus a refrigerator and stove. It was a class job, and made a great way for him to go to the races.

One top executive kept having us pick up his kid's Corvette and bring it in to fix one thing after another (the kid heavily abused the car drag-racing it). We did everything from synchronize the carburetors to replace the engine and transmission, major body repair, and a complete re-paint.

Occasionally we'd get a special request for oddball modifications from Styling. At one point late in 1967 they were looking at the feasibility of using sheet film coatings instead of paint for the outer body surfaces, and they asked us to completely cover a Corvette with un-grained smooth vinyl top material for evaluation (they obviously didn't want to tie up their own manpower doing it, but they had the budget to pay us to do it without anyone asking any questions). They sent us a 1968 Corvette from their fleet and a big roll of smooth vinyl material, and it took four of our assemblers about two weeks to develop the techniques and completely "skin" the Corvette with red vinyl. Ugliest Corvette you ever saw – we shipped it back to styling, they paid our work order, and we never saw the car again.

We also did some of the show paint work for "show jobs" for new models for auto show displays - if every car we show-painted was gathered in one place, they'd have had to rent Selfridge Air Force Base to park them all. We also supported on-site vehicle preparation for the Chevrolet displays at the Detroit Auto Show, which was usually a last-minute frenzy, especially for new model introductions. When the new 1967 Camaro was to be introduced to the public for the first time, Chevrolet scheduled a Management review of their displays the day before the show opened for Pete Estes (then the Chevrolet General Manager and a GM Vice President) and his key executive staff. When they gathered at the Camaro display, with a new Camaro SS on a turntable, Estes remarked that the tires looked awfully small for a performance car, and said "let's get some bigger tires on that thing".

I was detailed along with another engineer to "take care of that", so we unhooked the tie-down straps (in those days, all cars at shows were tied down an inch or two below normal ride height to make them look sleeker), jacked it up, removed the wheels, grabbed a cab, and took them down Jefferson Avenue to the first Firestone store we could find. The tires on the car originally were D70-14's as I recall, and we bought a set of E70-14's or F70-14's, had them mounted, got them back to Cobo Hall, installed them on the car, snugged the car back down again, and the entourage was still in the building when we finished. The group came back by the display on their way out, Estes looked at the car, said "that's better, I want those tires on the car at launch", and they

left. Those tires were on the car at launch, after a scramble with Stop Orders, new engineering releases, and purchasing negotiations with Firestone over who would pay for all the D70-14's they had already made. The tires we bought for the show car went on my expense account.

We had one of the air-bag evaluation cars that had been built a year earlier at the Pilot Line in our Pilot Line evaluation fleet. When it had piled up enough evaluation miles and was due to be wholesaled to a dealer, the engineer who drove it most of the time brought it in and we completely re-built it from bumper to bumper with all new parts (engine, transmission, interior, paint, etc.). Then the engineer made arrangements in advance with the dealer who bought it wholesale to buy it back from the dealer and wound up with essentially a brand-new car at the price of a wholesaled high-mileage fleet car. This kind of thing was not all that unusual 40-50 years ago – these days it would cost you your job.

Our Pilot Specifications Manager, Frank Beaulieu, drove a new '67 Chevy II company car to the Tech Center for a meeting one day, one of the first with the California K19 Air Pump Emission system on it. Going down I-75, one of the anti-backfire air valves failed and the engine caught fire. He pulled off to the side, opened the hood, and beat the fire out with his overcoat to save the car. The Company refused to accept his expense report charge for a new overcoat ("no policy to allow such a reimbursement in the Comptroller's manual"). About two months later the same thing happened again in a different K19 evaluation car, and he just pulled off to the side, scrambled up the embankment, and let the car burn right down to the wheel bearings.

The launch of the 1968 Corvette in the fall of 1967 with its all-new body was extremely difficult. Even though it was originally scheduled as a 1967 model and had been delayed a year, it still wasn't ready for launch as a 1968 model, but it was launched anyway. The removable-top coupe version was originally designed with a one-piece roof panel (and no center bar), like a Porsche Targa, and the prototypes were built that way. Testing showed that the body twisted excessively with that construction, and the one-piece roof panel could neither be installed nor removed unless the car was on a perfectly flat surface. The coupe body structure was redesigned in a crash program to add the center "T"-bar to the roof for added torsional stiffness and the removable roof panel was redesigned as two separate panels. The build of more prototype test cars, further development of the design, and lead time for production tooling for all the new parts and assembly tooling put the launch of the coupe six months past the planned launch date.

While the coupe redesign work was under way, the convertible was launched on the normal 1968 model year timing, and all Corvettes built for the first six months of production were convertibles, which put great stress on the suppliers of convertible-only parts, who had to produce twice the number of parts and assemblies than they had tooled up for during that period. The coupe was finally launched in February of 1968,

six months late, with no pre-production tooling tryout, and fit problems and water leaks plagued the coupe for the rest of the model year as part, design, and quality problems were dealt with on the fly with hundreds of running changes. The basic body, trim, and electrical systems for both styles were still late, even with the one-model-year delay, and most of those systems were redesigned for the 1969 model. Magazines generally derided the cars they tested for assembly, quality, fit, and functional problems. 1968 was not a banner year for the Corvette.

The big-block 427 1968 Corvettes had shown nagging cooling problems in hot weather during development and the plant in St. Louis had been told not to ship any more production big-block cars until Management had reviewed them and signed off that they were OK to ship. A management review was scheduled after fifty or so had been built, and Pete Estes (Chevrolet General Manager and GM Vice President) and Zora Arkus-Duntov (Corvette Chief Engineer) arrived at the plant on a hot St. Louis summer afternoon to drive the cars and evaluate them. Pete and Zora drove off in a new 427 Corvette with air conditioning, and soon wound up stuck in stop-and-go rush-hour traffic on a freeway several miles from the plant. The temperature gauge went into the red, and suddenly there was steam and coolant everywhere as a radiator hose blew off, stranding them and the brand-new Corvette in the middle of the freeway. Both men were in business suits, and crawled up the freeway embankment and over a fence (in 90-degree heat and humidity), and walked to a gas station to call the plant. The rest of the review went downhill from there after the plant picked them up and had the Corvette towed off the freeway, and a barrage of Engineering deviations followed to add all manner of seals around the radiator and to cut large air intake holes in the bottom of the front valance panel to improve airflow through the radiator before production of air-conditioned big-block cars could resume. A lengthy Service Letter was issued subsequently for the dealers to incorporate the changes in the cars that had already been built, and many more production running changes were made through the balance of the model year to try and reliably cool the big-block cars.

During the Management preview prior to the opening of the 1968 Detroit Auto Show, where the new ’68 Corvette was featured, Ed ____, Chevrolet’s Director of Reliability, got into one of the display Corvette coupes to evaluate the interior and closed the door. When he pulled the door release handle to get out, something came adrift inside the door and the door wouldn’t open, either from the inside or the outside. The passenger side door was locked, and when he reached over to unlock it, the lock knob came off the shaft and fell on the floor between the seat and the door. He was apparently claustrophobic, and became panicked, yelling for help. Nobody could get the car open from the outside, and someone finally had the presence of mind to show him how to unlatch the T-top, and they lifted him out through the T-top opening. Not a good day for the Corvette guys.

The next Flint Plant Manager (Fred Caffrey) was very overweight (6'-2", over 300#). He asked us to bring over a new ’68 Corvette that we had in our pool fleet one afternoon

for him to drive home. When he got home, he couldn't get out of the car - he was stuck behind the steering wheel. He had to blow the horn while sitting in his driveway to get his wife's attention (and attracted all the neighborhood kids) and had her call the plant to send two mechanics in a full-size Caprice to his house. They showed up and removed the steering wheel to get him out, left the Caprice for him, and took the Corvette back to the plant. He didn't ask us for a Corvette again.

The Flint Assembly Plant Material Director was even larger, about 350 pounds. Every time he was done with a 3000-mile Caprice assigned company car, they'd send it over to us to have the front seat and left side springs and shocks replaced before wholesaling it to a dealer, as the seat was completely flattened and the car had a permanent sag on the left side.

When the 2-way tailgate was introduced on the 1969 Impala and Caprice station wagons, the first jobs that came down the Final Line at Flint Assembly next door were missing an internal interlock rod that prevented both latches from opening at the same time. If you opened them "down" like a normal tailgate, they worked fine - but if you opened them the other way, like a door, both sets of latches opened simultaneously on some cars and the whole tailgate came off and fell into the Final Line center work pit, hanging by the cable that held the tailgate horizontal when it was opened "down". Not a good day for the Fisher Body guys.

Shortly after John DeLorean became the Chevrolet General Manager, he attended his first monthly General Managers' Meeting as the head of Chevrolet, at the GM Building. He arranged to be driven to the meeting from Chevrolet's headquarters at the GM Tech Center in a black Cadillac limousine. Shortly after the limousine drove into the executive garage at the GM building, the manager of the garage called upstairs to the 14th floor to inform the Chairman that Delorean had arrived in a Cadillac. This didn't go over well at all with (Chairman) James Roche and (Vice Chairman) Richard Gerstenberg, and they upbraided him when he arrived in the conference room, reminding him that only the top two officers were entitled to chauffeured Cadillac limousines, and as head of Chevrolet, he was expected to arrive in his Division's product, not in a Cadillac.

Later that day, after DeLorean arrived back at Chevrolet, he told Alex Mair, the Chevrolet Chief Engineer, that he wanted a Chevrolet limousine built in time for the next month's General Managers' Meeting. The project started that night in the Engineering Metal Shop. A Caprice station wagon was pulled out of the fleet for the front third of the car, and a Caprice hardtop coupe with the stylish concave back window was pulled out of the fleet for the back third of the car. The two cars were cut in half and set up on a surface plate, and work proceeded (on a three-shift schedule) to fabricate the center third of the car to join the two partial cars together as an extended-wheelbase Caprice limousine.

Fisher Body Plant #21 (where the Cadillac limousine bodies were built) was approached to provide the interior trim and glass divider partition, but they refused, so the interior was stripped out of the limousine used earlier, modified, and installed in the now-stretched Caprice, including the rear air-conditioning unit and overhead ductwork in the headliner. The completed car was sent to the Proving Grounds, checked out for function and safety, and returned to Chevrolet Engineering two days ahead of the deadline.

Delorean used the freshly-created Caprice limousine to go to the next General Managers' Meeting, the same call was made to the 14th floor from the garage office when he arrived, and he was again berated when he entered the conference room. He then pointed out that he had done exactly as he had been instructed and arrived in a Chevrolet. The 14th floor gang was not amused, but he enjoyed it. Upon return to Chevrolet Engineering, the limousine was parked in the fleet lot, sat there for several months, and was later wholesaled to a dealer or National Car Rental. Where it went from there is unknown, but it was the only factory-built Chevrolet limousine ever made.

At about this same time, the future mid-engine Corvette development program was getting under way, and a number of mid-engine reference vehicles from other manufacturers were purchased for Engineering evaluation as the Corvette preliminary design concepts were being worked out.

The first one to arrive was a Lamborghini Miura SV, with a transverse V-12. Zora Duntov took it home the first night for evaluation and on the way in to work the next morning, he really let it out and got "the speeding ticket of the century" from the Warren police. He was arrested on the spot, and wound up in the Warren City Hall lockup, right across Van Dyke from Chevrolet Engineering. He called Alex Mair, Chevrolet Director of Engineering (Chief Engineer), and Alex had to go over and bail Zora out of jail. Unfortunately, there is no record of their conversation that morning, but you can be assured it was "spirited".

DeLorean also added a DeTomaso Mangusta to the list of mid-engine reference vehicles, with instructions that he was to drive it first when it was ready. He arrived in the garage to drive it home, and found it extremely uncomfortable. He was very tall and long-legged, and couldn't fit his legs and knees in and still manage the controls. He got out of the Mangusta and said "rework it so I can drive it, and let me know when it's ready." The car went into the Metal Shop the next day, and it took two weeks to fabricate an entire new rear bulkhead and driver's side floor pan and re-trim it so the seat could be moved rearward. DeLorean drove it over a weekend once it was completed and never asked for it again.

The Vega engine and its low-pressure die-cast aluminum block technology were developed at GM Engineering Staff, long before the program was handed-off to

Chevrolet to finish it and bring it to production. Then-GM President Ed Cole, who had been very personally involved with the design of the 1955 Chevrolet V-8 when he was Chief Engineer at Chevrolet, was equally involved on a personal level with the Vega engine. He was a frequent shirt-sleeve visitor on Saturdays to the Engineering Staff Engine Drafting Room, reviewing the design and giving direction for changes. He was a very cost-conscious engineer, and gave clear direction to Engineering Staff that there was no need for insert bearings in the iron cylinder head for the camshaft, as he felt "iron-on-iron" for the cam journals would work fine as long as "chevrons" were machined into the cam journal bores in the cylinder head to retain a good supply of oil. Every imaginable kind of "chevron" arrangement was tested, and all of them resulted in cam journal-to-bore lubrication failures and camshaft seizures. Finally, after the program was transferred to Chevrolet, he relented and allowed the design change to add insert bearings for the cam journals, less than six months prior to production launch. He most likely relented on this issue after listening to Chevrolet engineers he trusted from his experience working with them on the original Chevrolet V-8. As the final production engine development progressed at Chevrolet, it became known (in closed offices) as "The World's Tallest, Smallest Engine" due to the very tall cylinder head.

The Vega engine cooling problems started at the very beginning of the experimental engine program at Engineering Staff. During the development of the Vega, while it was still a Corporate Engineering Staff program not yet handed-off to Chevrolet, Ed Cole insisted that the engine probably had no need for a traditional radiator, due to the excellent heat rejection to the air from the aluminum block. He felt that coolant could simply be passed through the heater core, with outside air fed in through the cowl plenum, ducted through the heater core, and exhausted through a duct under the car, to provide auxiliary cooling. Several pre-prototype cars were built this way at his insistence, and (as you might imagine) all of them were dismal failures from a cooling perspective. After having one seize up while he was driving it at the Milford Proving Grounds one Saturday, he backed away from his theory and allowed the design to continue with a conventional cooling system (although with the world's smallest and least expensive 12"x 12" radiator, which caused many problems later in the field on production cars).

The radiator was sized to the absolute minimum cooling test bogeys to keep costs down - this was standard practice at Chevrolet in those days on all car lines, assuming people who needed more cooling would pay extra for a heavy-duty radiator. It didn't work on the Vega, as it was so sensitive to overheating - a conventional iron-block engine could survive overheating occasionally, but one time was death for the Vega due to the differential expansion rates of its iron head and aluminum open-deck block. The head gasket seal would be broken when the block distorted, and the next overheating cycle would come much sooner and at lower load until the engine finally just seized-up tight. GM's first usage of the now-common "coolant recovery system" was initiated on the Vega for 1973 as a result, but it just captured the coolant that

would otherwise be puked out on the ground through the overflow hose. The cars still overheated (although they didn't lose the coolant) until the previously optional heavy-duty radiator was made standard equipment as a last resort later in 1973. GM was then sued by the outside inventor of the coolant recovery system for using the design in violation of his patent, and the issue was ultimately resolved with an out-of-court settlement.

The optional L11 engine with a 2-barrel carburetor became a mainstream part of the Vega production engine development program in December, 1968 (and ran at a 75% level as an option two years later in production). But the Chevrolet Engine Group had an intense dislike for the tall iron cylinder head with its unusual tappet arrangement and side-flow "Heron" combustion chamber design that had been thrust on them from Engineering Staff, and set out quickly to design their own. Their new L10 design evolved rapidly as a "crossflow" aluminum head with a single centrally-mounted overhead camshaft and roller rocker arms operating intake valves on one side and exhaust valves on the other, remarkably similar to the Ferrari V-12 cylinder head design of that period. It was almost 3" lower than the production head, was a lot lighter, had true "hemi" chambers with big valves, and made excellent power. Numerous prototypes were built, manufacturing tooling was started, and it even got to the point where Assembly Instruction Manual Sheets were issued to Lordstown in anticipation of approval for production. The REAL story never came out, but some combination of Corporate politics ("You don't need another cylinder head – mine will work just fine") and additional program investment costs killed the in-house Chevrolet-developed L10 cylinder head program. Had it gone to production, it would not have had the differential expansion head gasket problems that plagued the iron-head engine and which resulted in millions of dollars in engine replacement warranty expense, and it would have provided significantly higher performance than the optional L11 2-barrel iron-head engine that went to production.

The accountants ran the Vega program from start to finish, with the objective being a 2,000-pound car that would sell for $2,000.00. They said "no glove box", so there was none (for the first year - then we crashed a redesign to put one in for 1972). They said "build the base car with no headliner - just perforate the roof inner panel and paint it trim color". We built the pre- prototypes that way, and it was like being in a tin outhouse in a hailstorm, so the Beanies lost that one and the car got a molded acoustic headliner. They said "no plastic front fender liners - they'll cost $2.28". The liners were added in a crash program in late 1973 after spending millions to replace thousands of sets of rusted-out fenders under warranty in the field.

There was another cause of the rusted-out fenders and bodies. It was a simple Fisher Body Engineering screwup and was corrected for 1974 start of production. The ELPO body dip-prime process from '71-'73 was "anodic" (body was the anode, paint was the cathode). Fisher Body designed it with the polarity backwards, so it didn't get the "throw" it was supposed to have to get into all the nooks, crannies, and crevices. It it

was corrected for '74 to "cathodic" (body was the cathode, paint was the anode). This gave much much better film build and "throw" into the recessed and enclosed cavities of the body shell.

The Vega transmission development program also fell victim to the Finance types. Following an early executive drive review of pre-prototypes, it became obvious that the MB1 Torque-Drive manually-shifted clutchless 2-speed automatic, which was to be the base transmission, was hopelessly inadequate, and the base transmission must be a manual. Opel had a 4-speed available that was in high-volume production, but the Finance types insisted that the base transmission must be a traditional low-cost 3-speed, with the traditional profit-generating 4-speed as an extra-cost option. The existing Saginaw 3-speed ratios were unsuitable, so Opel was commissioned to tool up a new 3-speed derivative of their production 4-speed (there was no such thing as an Opel 3-speed, as the Europeans had given up on 3-speeds as being archaic many years earlier). Opel did just that, and tooled up a new 3-speed from scratch, just for the Vega application, whose actual cost was higher than the (optional) Opel 4-speed due to the tooling investment and low production volume.

Tradition prevailed however, the Finance types got their way, and the (new) Opel 3-speed became the base Vega transmission, even though it cost more than the optional 4-speed. Both transmissions came by ship from Germany in HUGE wooden crates, 100 transmissions to a crate, and arrived in shipments of thousands of transmissions at a time. When the initial crates were opened, most of the transmissions were rusty from the salt air, and subsequent shipments had the transmissions sprayed with an oil and wax coating to prevent corrosion during shipment. Saginaw probably could have whipped up the desired ratios for both 3- and 4-speeds in less time and for a lot less investment, without the ocean shipping, inventory, and service parts problems that came along with the Opel transmissions, but they never got the chance until 1974.

Nothing escaped the bean-counters, except they ignored assembly labor and facilities costs entirely in their decisions. All they considered was piece cost of the parts. All Vegas had metal moldings around the rear quarter windows that were installed off-line in a subassembly where the rubber channel was put on the quarter window glass. The standard models used body-color painted moldings to cover the rubber seals, and the up-level option jobs used bright stainless moldings. Consider this logic - the moldings for the base models had to be taken upstairs to the Paint Shop, removed from their cartons, placed on specially-made magnetic racks, run through a special paint system, painted in ten different colors, removed from the magnetic racks, placed on specially-made "trees" on wheels, sent down an elevator from the second floor Paint Shop, manually pushed to the subassembly operation, where the operators selected the right size, shape, and color for a right and left set, and applied the painted moldings to the window before it went on the car - in ten colors, there were 180 different parts to create in the Paint Shop, rack, transport, and select from in the subassembly operation. For the up-level option jobs, the operators simply took the bright stainless moldings out

of the box and put them on the windows, with only 18 total parts to pick from. When the "cheapo" painted moldings finally disappeared from production, we removed at least 14 people per shift from Material, Paint, and Production.

The Finance types were always fixated on the “base car” (which we hardly ever built any of, but had lots of odd parts for), and “option profit” was king, which generated an incredible proliferation of option combinations and an ever-escalating level of parts to handle and decisions for people to make between cars at 100 jobs per hour.

Someone decided during the development program that the AC mechanical fuel pump was an ugly appendage sticking out of the side of the cylinder head, and the first in-tank electric fuel pump in the domestic automobile industry was designed and released to replace it. The fuel pump power feed circuit ran through a fuse in the junction block, and then through an oil pressure switch in the engine’s main oil gallery so the pump couldn’t operate with the ignition in the “On” position with no oil pressure. The “Start” position bypassed the oil pressure switch to provide fuel pressure with low oil pressure at start-up. The oil pressure switch was a constant source of trouble, stranding many customers on the side of the road when it malfunctioned and killed the fuel pump. Our Lordstown assigned company cars and “overnight” test cars all carried a “fuel pump kit” in a little Anacin tin in the glove box, consisting of a spare fuse and a cotter pin. If the oil pressure switch failed and killed the fuel pump, you’d pull the harness connector off the switch on the side of the engine block and insert the ends of the cotter pin into two of the three female terminals in the connector as a jumper, and the fuel pump would then work with the ignition in the “On” position, oil pressure or not, so you could drive on to your destination.

The Vega 4-cylinder engine generated a very high second-order vertical shaking force due to its relatively large displacement, making it a major challenge to isolate the engine vibrations from the body structure. Ultimately, the only way to “calm down” the drivetrain vibration transmitted to the body (which amplified it even more) was to cantilever a “tuned absorber” pack of steel plates riveted together on spring-steel arms from the back of the transmissions (nothing was known about rotating engine balance shafts in those days, which is the “cure” these days for cancelling second-order vertical shaking forces). This development also came very late in the program, requiring significant casting and machining changes for the tailhousing of all five transmissions to provide the attaching provisions. Each engine/transmission combination required its own part number of “tuned absorber” (vibration damper). The early 1960’s 4-cylinder version of the Chevy II, with the “Iron Duke” 153 cubic-inch four, had the same problems, but nobody knew how to cure it in those days - they just used huge, soft rubber engine mounts, a 5”-diameter driveshaft with a heavy oiled cardboard liner, and they just “let it shake”.

The front seat backs on the base-model first-year 1971 Vega were designed to have an ultrasonically-welded feature to create an 8”-wide horizontal “tie-down” appearance

about 10” down from the top of the front seat back, like the actual tie-downs used in the Custom Trim option by means of tie wires, sewn-in wire pockets on the seat cover, and hog-rings tying the wire down through the foam pad to the seat frame, but without the extra parts, cost, and assembly operations.

This was a Fisher Body “first”, and was to be accomplished by gluing a special piece of fabric coated with a heat-curing adhesive to a recess in the foam pad. After the vinyl seat trim cover was skinned over the foam and frame and hog-ringed at the bottom, the seat back assembly was fed into a huge 4-station indexing dial machine in the middle of the Cushion Room. This machine was then to precisely position the seat back, and a copper electrode would then come down from above on a cylinder, press the cover material into the foam at the location of the heat-activated adhesive strip glued to the foam, give it a blast of high-current RF energy through the dielectric electrode, and the result was supposed to be the contoured “tie-down” look without the expense of the Custom Trim, as the heat from the RF energy (microwave energy, if you will) was supposed to cause the inner backing of the cover material to adhere to the activated heat-sensitive adhesive strip that was glued to the foam pad.

It was a disaster – the results were thousands of seat back assemblies with the vinyl cover either fried, burned, melted, or that didn’t stick at all, and even the F.A.A. got involved, as every time the machine cycled and cut loose its blast of RF energy, it affected the instrument navigation systems of commercial airliners flying over the plant on final approach to Youngstown Municipal Airport. After about six weeks of “All the King’s Horses and All the King’s Men” from Fisher Body Trim Engineering and GM Research and Engineering Staff trying to make the thing work, they gave up and tore out the machine and scrapped it. That’s why you see some very early cars with base trim that have a “tie-down” feature near the top of the front seat back, and then it disappeared forever.

Then-GM Vice President and Chevrolet General Manager John DeLorean would occasionally bring high-volume dealers into the Chevrolet Styling Studio to show them what next year's cars looked like. The original approved Vega clay model had small rectangular front parking lights below the bumper. One morning DeLorean brought Zollie Frank, the owner of the world’s largest Chevrolet dealership (Z. Frank Chevrolet, in Chicago, which occupied almost an entire city block), into the Styling Studio to show him the Vega clay model and get his thoughts on the design. Zollie was a really big guy, with an even bigger cigar. He looked at the painted clay model, walked around it, and stood in front of it for a minute or so, and said “Get rid of those wimpy-looking little parking lights – they should be big, round things that look like European driving lights”. DeLorean turned to the Studio Chief, told him to make the change Zollie wanted, and said they’d be back to look at it later that afternoon. After the two of them left, the Studio Chief blew a gasket and began to rant about “Who does he think he is – what does that big slob know about design?” He finally calmed down and put the modelers to work on large, round lamps, and DeLorean and Zollie came back later that day and

approved the change. DeLorean mentioned to the Studio Chief as they were leaving that “Zollie sells more Chevrolets than anyone else on earth – he knows what the customers like.” The car went to production exactly as it was revised that afternoon, with big, round parking lights that looked like European driving lights.

The Vega rear suspension design was another very late program change. The original rear suspension design had the axle located by four angled trailing arms. The uppers were angled outboard from the axle center section to brackets welded to the rear of the floor pan behind the rear seat bulkhead, and the lowers were angled inboard from the ends of the axle to brackets welded to the bottom of the rear seat bulkhead. The prototypes fractured the seat bulkhead and the rear of the floor pan due to braking and acceleration loads fatiguing the body panels during durability testing at the Proving Grounds, and a fix was developed there in order to keep the cars running on the test schedule.

The fix was to alter the lower control arm arrangement so they ran straight fore-aft and tied directly into the much stiffer structure at the rear of the rocker inner panel, and a large reinforcement was added to the rear seat bulkhead panel to spread the loads imparted by the angled upper control arms over a larger area to stop the “oil-canning” of that panel. This “fix” was adopted very late in the program and became the production design. The ultimate solution for rear axle control, adopted years later in production, was the “torque arm” design, also used in later years for the Camaro.

The process of finding a name for the program (which still carried the Engineering Staff “XP-887” designation when it was handed off to Chevrolet) also had its entertaining moments. The usual research was done, many names were considered, and one of the names that hung on and made the final “short list” was “G-Mini” (really!). The “Vega” name was finally chosen, as it stood for “bright star”.

3. LORDSTOWN ASSEMBLY PLANT (1969-1975):

Chevrolet – Lordstown built Chevrolet Impalas and Caprices and Pontiac Firebirds, the last models before the massive changeover to the Vega. The Firebird moved to Norwood in mid-April, 1969. The last "B"-body Chevy was produced at Lordstown at the end of March 1970, and the first Vega was produced 12 weeks later, on June 26th, 1970, following a complete retooling of the plant - in only 12 weeks.

During 1968 and 1969, Lordstown built several special pink Firebird convertibles with pink leather interiors and pink tops for Nancy Sinatra while John DeLorean was still the Pontiac Division General Manager and was dating her. She wrecked the first one and we built a second one to replace it.

We always had trouble building Firebird convertibles – we couldn't get the tops latched

to the top of the windshield without sitting on them, even when everything was built exactly to the specified process. It finally turned out that the inner windshield pillar reinforcements were stamped wrong and couldn't be fixed without $3 million worth of new dies, which wasn't going to happen with less than a year's production left for that model. From then on, we used hydraulic chain pulls ("come-alongs") on each one to force the top of the windshield pillars rearward on both sides until the internal reinforcement welds broke. This let the pillars move back into design position, and the tops fit fine from then until the end of the model.

The Firebird Trans-Ams with the Ram-Air IV engines were terrific performance cars, and more than once they were stolen from the repair or shipping yards and driven out through the plant gate, never to be seen again. The plant drivers that shuttled cars from Final Process (repair) out to the repair storage yard and back into the plant also enjoyed the Trans-Ams. One night on second shift, one of the drivers decided to romp on one really hard out in the yard before bringing it inside, failed to notice the "NO BRAKES" card on the windshield, and got the surprise of his life at the end of his acceleration blast when the brake pedal went to the floor and he went through the chain-link fence and wound up in the drainage ditch next to the service drive behind the plant. His reward was a discharge.

Unlike other Fisher Body/Chevrolet assembly plants that were totally separate, the Lordstown Trim Shop was "integrated", with Fisher Body and Chevrolet in the same department - each conveyor pass alternated - #1 was Fisher, #2 was Chevrolet, etc. Fisher Body foremen were on a "budget" for assembly tools, including magnetic power screwdriver bit-holders, and had terrific self-drilling trim screws that made their own holes. Chevrolet foremen weren't on a budget, and had all the magnetic power screwdriver bit-holders they needed, but Chevrolet didn't have any of the self-drilling screws Fisher guys had, so they swapped the Fisher foremen magnetic bits for the Fisher self-drilling screws to use when holes didn't line up – we never could have gotten cars built in the Trim shop without this "barter" system, which worked both ways for many other fasteners and tools as well. The hallmark of a truly effective production foreman is the ability to do whatever it takes to get the job done, right now.

Caprice 3-seat station wagons were a bear to build due to all the added trim and 3rd seat area parts, folding load floors, brackets, hinges, and trim panels. Whenever two 3-seat wagons in a row came down the line, the second one got the third-seat area about half-built, and if three in a row came down the line, the third one just had all the parts thrown in the back, as operators were already "in the hole" from the first and second one and had to let something go to get back into their work stations - we called these "hand-grenade jobs". They had to be finished in Final Repair on overtime and on weekends, and we "hid" them up in one of the many overhead power-and-free accumulator conveyors in Final Repair until we could get to them over the weekend so the Plant Manager wouldn't see them in the Repair Yard and raise hell about it.

Every morning at 10:00 AM, the Chevrolet and Fisher Body plant managers would meet on the “OK” line at the end of Final Process to congratulate themselves on the quality products they were shipping. On the previous night’s second shift, we'd generate lots of "OK" jobs and send them up into the overhead conveyors, timed to hit the shipping line just before 10:00 so all the two Plant Managers would see was a steady stream of "OK Shippers" for the 15 minutes they were there. Meanwhile, there were as many as 6,000 repair jobs in the yard, and we were working Final Repair 24 hours a day, 7 days a week to ship the jobs that were built 16 hours a day, 5 days a week. I don’t think they ever figured it out.

Part way through the 1969 model year, the Chevrolet Plant Manager was transferred to run a GM assembly plant in England, and no replacement was named for several months. In the meantime, they appointed the Production Manager of the adjacent Chevrolet Van Plant as the Acting Plant Manager of the Car Assembly Plant. Unfortunately, he was an alcoholic, and spent most of his time in his office nipping at bourbon, and seldom ventured out on the plant floor. He, in turn, appointed Jake Bass, the Chief Inspector (Quality Manager, if you will), as Acting Production Manager, to run the floor operations.

One day, later in the 1969 model year, the Flint Stamping Plant broke a die for the left front fender, which we then ran out of the next day. Jake, the acting Production Manager, decided "we needed the count", and gave orders to keep building cars without front end sheet metal. We built Impalas and Caprices for two more full shifts without hoods and fenders, and they all went straight to the repair yard. It took weeks and weeks to install the painted sheet metal by hand out in the yard. It took two months to get the die fixed, and during that period we used left front fenders from Budd (who supplied some of the other plants – Impala/Caprice volume was so high in those days [6,000 per day] that it took two separate sources to stamp fenders to supply all the plants). This generated its own problems, since we had Budd fenders on the left side and Chevy-Flint fenders on the right side, and they were different. The Budd fender skins were to print with the correct surface contour where they matched the hood and the Chevy-Flint fenders were slightly different, so we had to distort the Budd fenders in the fixture that welded in the fender reinforcement so they were the same contour as the Chevy fenders on the other side in order to get an acceptable hood fit on both sides of the car with the Flint hood. When Flint began supplying the left fender again, we had to re-adjust the locators and clamps in the reinforcement welders to accommodate the shape of the Flint fenders.

Jake was obsessed with his personal appearance and grooming, and frequently ruminated about little things like his perfectly-ironed wrinkle-free shirts and surgical cleanliness in his office as Chief Inspector. One day GM announced an enormous safety recall for cars with Rochester Quadra-Jet Carburetors that were susceptible to causing engine fires, and the plant was notified to stop production, wait for a shipment of revised parts, change the carburetors on every car on the property, and to wait for

sufficient quantities of the revised carburetors to arrive before resuming production. I was in his office that morning discussing another issue when one of his managers brought a Quadra-Jet carburetor in to show him the exact nature of the recall issue and the production fix so he'd know the details. Jake came right out of his chair and told him to "get that dirty thing the hell out of my office". So much for keeping the boss informed.

Repair jobs sat in the yard for so long that they froze in place out in the mud as winter weather approached (the paved part of the yard only held 2,000 cars). When we finally had to clear every last job out of the yard and get them ready for shipment before we shut the plant down and gutted it for the major model changeover to the Vega, we had to hire tow trucks to bring them inside the plant. Several Firebirds that the wreckers pulled out of the frozen mud left their rear axles behind, with the rear springs ripped right out of the body, when the trucks tried to yank them free – these units had to be stripped of usable parts and scrapped.

The plant had always had problems at "Body Drop", where the body was lowered on the frame. They continuously had trouble lining-up the body on the frame to get the critical body mounting bolts driven, and many went down the final line with several body bolts missing and the bolts had to be put in by repairmen in the Final Line Pit. Shortly after arriving at the plant in 1969, I spent a few hours one day in the pit with the operators and repairmen and noticed it was always the same bolts that were missing, and the body was always out of alignment with the frame the same way. Maintenance checked out the alignment of the overhead Body Drop carrier rails to the floor-mounted frame conveyor that night on third shift with plumb lines, and they discovered it was an inch off at the front and two inches off at the rear. After about an hour's work, the overhead conveyor steel rail for the body drop tackle that held the body was properly centered to the floor conveyor, and all the body bolt problems disappeared the next morning. As a result, we pulled two of the four repairmen out of the Final Line Pit that day and eliminated two more Pit Repairmen in Final Process.

I had a hot-blooded Foreman in Chassis named Bill, who had been a pro football player with the New England Patriots. He reacted instantly to everything, frequently thinking with his fists or not thinking at all. When Firebirds entered his area to have the carpet installed, the center console was supposed to be laid in the back seat, out of the way, so his people could lay the carpet. The next foreman's area beyond his installed the console. One day, a long string of Firebirds hit the end of the Final Line with no consoles, and some at the head of the string had the carpet installation incomplete. I hopped on my scooter to go see what was going on, and found one of Bill's repairmen installing carpets halfway down the Final Line from his area, and guys running down the aisle carrying consoles. I finally found Bill and he had been throwing all the consoles in a trash gondola. A new operator upstream of his area had been stocking the consoles in the front floor instead of the back seat. Bill's carpet people just let them go instead of moving the consoles out of their way to put the carpets in. He reacted as usual, and stood upstream of his carpet job and threw all the misplaced consoles in a

trash gondola. When I confronted him, he just stammered “Gotta get the pahts in the cahs…” – it never occurred to him to solve the real problem.

After we converted to the Vega at 100 cars per hour, Bill's Wheel Room (where the tires and wheels were automatically mounted, inflated, and balanced at 550 per hour) had a lot of downtime and maintenance problems that usually resulted in people hand-carrying tires when the overhead delivery roller conveyor chutes went empty due to machine downtime. This was always a wild scene, as the car was set down on its wheels on a flat-top conveyor about 20 jobs past the end of his line, and HAD to have tires on it or we'd have to shut the main line down. One day Bill's Utilityman called me on the radio when I was at the end of the Final Line and said I’d better get to the Wheel Room (the "Captain Crunch Machine", as Bill called it) right away before Bill killed somebody. I got there as fast as my scooter could run, and found Bill holding a Maintenance foreman about a foot off the floor against a column with his left hand, punching him repeatedly in the face with his right and screaming at him for f___ing up his line again, while a group of hourly machine repairmen watched in amazement - two Management people in a fight. I had to suspend Bill and have Security escort him out of the plant.

Big Al, the Production Manager (yes, the same one I had at Willow Run years earlier), was tearing down the aisle on his scooter one afternoon with the Material Superintendent next to him on his scooter, and was screaming at him about a material shortage on the Final Line. They came to a 90-degree turn next to Body Drop, and Al never saw it - he kept on going straight, right through an operator's workstation, and rode the scooter right into the Final Line Pit, where it flipped and pinned him to the Pit floor. We had to stop the line and it took six people to lift the scooter off him and get him out of the Pit.

After we converted to the Vega and were in the middle of the "War" with the Union, Al ran up the stairs to his Mezzanine office one afternoon puffing on his usual big cigar, opened the door to the Production Office, and got a 5-gallon bucket of water dumped on him someone had set up for the occasion. I'll never forget the look on his face as he stood there soaking wet screaming for the Personnel Director to "fire ALL those bastards". The Plant Manager told him to go home and everyone in the plant knew about his bath in about two minutes. “Big Al” had a heart attack in the plant one afternoon, went out on a stretcher, and within an hour there was a pool under way in Final Process selling squares predicting when it would be announced that he had died. Al survived and recovered, but never came back to work; he retired on a medical disability.

The "War" was triggered by consolidation of the Chevrolet and Fisher Body organizations into GMAD (GM Assembly Division) as a single Management organization for the combined plants. GMAD began in the 50’s as the B-O-P Assembly Division, as a four-plant operation with plants that built Buick, Olds, and Pontiacs

together, and was very efficient compared to the single-division product Chevrolet/Fisher Body operations. The Lordstown Local Union was determined that GMAD wouldn't come in and get Lordstown efficient by reducing manpower like they did everywhere else, and they had signs up all over the plant weeks in advance of the consolidation saying "Fight GMAD", "We Won't Knuckle Under", etc. When the consolidation occurred, GMAD only sent in about three people, but the "War" was on in earnest the day they arrived.

The "War" consisted primarily of intentionally missed work, missing parts, incomplete operations, alleged tool failures, and thousands of incidents of intentional sabotage to slow or stop the line and fill the repair yard, plus an incredible political battle for control of the Local Union that included fistfights in union meetings and the warring factions finally burning down the Union Hall.

The most popular daily technique for shutting the line down usually took either of four forms: 1) the people at the Chassis-to-Body Marriage line (the "Towveyor" area) "forgetting how to do their job", which instantly shut the line down, 2) the people in the Cushion Room where seats were built "forgetting how to do their jobs" or alleging that their hog-ring guns were jammed, resulting in all the seats having to be repaired instead of going on the delivery conveyor to the Final Line, which meant cars went down the line with no seats, or 3) missed operations which resulted in cars that wouldn't start or couldn't be driven at the end of the Final Line, jamming cars up bumper-to-bumper back up the line until it was stopped, or 4) failure to disengage the pins that held the body in the clamshell carrier when the car was set down on the Final Line on its wheels. When the carrier spread apart, it would pull the car sideways and dump it on its side into the center Pit, stopping the line. We'd have to use a forklift truck through the windows or roof to pull the car out of the Pit before we could start the line again. This went on all day and all night, punctuated by outright sabotage such as punctured fuel tanks, slashed instrument panel pads and seats, damaged brake and fuel lines, 30 or 40 cars in a row with the coil-to-distributor wire cut off, brake fluid intentionally dripped on the paint (just like pouring acid on it), or a hundred other little tricks to cause repairs, shut the line down, or fill the repair yard to overflowing to guarantee weekend overtime. This went on for over eighteen months, with the Union denying any sabotage was taking place, in spite of us holding weekly news conferences in conference rooms filled to the ceiling with intentionally-damaged parts by the thousands. People were fired and new people hired by the hundreds on a daily basis, and most days we were lucky to be able to run two or three hours of an 8-hour shift before shutting the plant down and sending everyone home. We went for a month or so where the longest shift we ran was nine-tenths of an hour.

The Union would call wildcat walkouts every now and then and prevent any of the salaried employees from leaving the plant, locking us in all night on several occasions, terrorizing female employees who tried to leave, turning company cars over at the plant exit gates, pounding and key-scratching people's cars at the picket line, and wearing

hoods so they couldn't be identified. We had no help from the police - the Ohio State Highway Patrol wasn't allowed to become involved, there were no local police in the village of Lordstown, and the County Sheriff was elected by Democrats (read the Local Union and other Unions) and wasn't about to jeopardize his career. The only help he ever sent was a 70-year-old School Patrol man in a rusty old Ford Maverick who would watch for a few minutes, laugh with the pickets, and leave.

It ultimately got to the level where supervisor's homes were shot at, their families were terrorized while the husband was at work, and supervisors were run off the road and shot at on the way home from the plant by hooded Union members. One black supervisor was assaulted by three pickets as he attempted to leave the property during a “lock-in” by going over the fence, and he beat hell out of all three of them. They filed assault charges against him, and the supervisor got a lawyer and filed suit against the Local and International UAW in Federal Court for unlawful detention in violation of his Civil Rights. The assault charges were dropped, the International Union settled out of Court with the supervisor for close to $500,000.00 to drop the federal suit, and the International finally took an interest in the situation and took over the Local Union. This, and the replacement of the Plant Manager by GM, started the "turnaround" at Lordstown. An audit of the Local Union showed financial irregularities and outright embezzlement by a number of the Local Union Officers, and they were all replaced by a new slate that was at least willing to discuss the issues. The turnaround continued slowly and took about two years, but nobody outside the industry ever wrote about it - the story wouldn't sell magazines, books, "60 Minutes" broadcasts, or newspapers like the "War at Lordstown" or "Blue-Collar Blues" did two years earlier. Lordstown soon became one of the best plants in the Assembly Division, and was near the top until it was closed. You had to be there and live through it to believe it. Many Management people's careers were literally destroyed by the "War at Lordstown", many had heart attacks or acquired serious nervous and mental disorders and simply couldn't face coming to work any more. Many took medical disability retirement because they simply couldn't function any more in that kind of daily combat environment.

Some of the Hourly people were scarred as well - I had a man they called "Crazy John" (who was a few cards short of a full deck to begin with) who put the owner's manual and other paperwork in a plastic bag and put it in the glove box on the Final Line. He was always complaining about his health, and his co-workers had him convinced one day he had all the classic cancer symptoms and better see a doctor right away. He demanded to be let off for the rest of the day to go get a cancer checkup, and when he was told he couldn't leave, he waited until a plant tour train was going down the aisle past his operation, dropped his pants, and urinated in one of his plastic warranty book folders in full view of the visitors, yelling "Cancer, Cancer" at the top of his lungs. He was suspended immediately for the balance of the shift and three days, but refused to leave the plant, claiming his wife would kill him if she knew he was off the job. So he sat outside the plant exit lobby for three hours waiting for his wife to pick him up at the end of the shift. And then spent the next three “work” days sitting in the parking lot rather

than let his wife know he wasn't working.

As initial production of the Vega ramped up toward the goal of 100 per hour, a major problem developed in the Paint Shop. At 85 per hour, the incidence of runs, pops, and sags in the paint became a major issue, with nearly 100% of the units requiring repair, and we had to plateau the rate through the spray booth at 85 per hour to stop it. We simply couldn't lay the paint on fast enough with conventional pressures and tips, and when we increased pressures and opened up tips, we got runs and sags everywhere. Fisher Body Paint Engineering sent in their troops, and they also called in DuPont, the corporate paint supplier, and DuPont sent in a small army of experts and chemists with two mobile paint laboratories. This bunch literally developed a whole new paint chemistry and application specifics over a weekend (NAD – Non-Aqueous Dispersion Lacquer), and we had production paint colors to that new formulation within a week, which enabled us to continue the production ramp-up successfully to 106 per hour in the Paint Shop (the Body Shop Main Line ran at 109, Paint at 106, Hard Trim at 104, and Chassis & Final Assembly at 102) in order to maintain 100 average off the Final Line with the inevitable occasional short stops for minor breakdowns. Masking, painting, and demasking the GT option's "skunk stripes" was something to see at 106 per hour!

Nobody had ever built a production Body Shop before that had to run continuously at 109 jobs per hour on a single line. The constant pounding of the power-and-free conveyors running at never-before-tried chain speeds and the tremendous shock loads imposed on the steel supporting the conveyors by the stopping and starting of heavy side frame gates and body carriers finally began to loosen up the building steel and trusses. We spent an entire Christmas holiday period with welders crawling all through the trusses and conveyor supporting structure in the Body Shop welding the overhead steel solid that is normally bolted and riveted in any other assembly plant.

In 1975, after two years of delays and false starts in the development program, we launched the Cosworth-Vega, a technically-advanced variant of the Vega with 4 valves per cylinder, dual overhead cams, Bendix port fuel injection, aluminum wheels, and many other race-car features. The dressed engine wouldn't fit in from the bottom like the regular Vega engine, so the engine went in with no intake manifold, fuel injection, or exhaust manifold. Each Cosworth that came down the Final Line was manually pushed off the line into a stall across the aisle, and all the engine dress work was done by hand. The roll-testers loved them as they wound them to 6,500 rpm through the gears on the roll-test machines.

Just before production started, an engineer from the Tech Center brought the first set of hand-machined aluminum wheels down to the plant for trial runs through the high-speed automated wheel and tire mounting equipment. The wheels were made in England by GKN, and the set he brought cost about $5000 per wheel as hand-finished Engineering samples. He watched intently as we scheduled two tryout wheels and tires

into the production flow in the automated wheel and tire mounting system. When the wheel reached the mounting machine that stretched the tire over the wheel rim, the guide shoes on the mounter very neatly sliced the rim right off the hand-made Cosworth alloy wheel like it was made of butter, and he started screaming like a maniac to shut down the system. By the time we could get to the nearest stop button, the rim had been neatly sliced off the second wheel. He was so panicked he could hardly speak. We modified another set of guide shoes that night in Maintenance and installed them the next morning, and they worked fine. He went back to the Tech Center that afternoon with two good wheels and $10,000 worth of scrap from the other two.

Every Cosworth-Vega engine was hand-built at Tonawanda in a special off-line “clean room”, and the man who built it signed his name on a plate on the cam cover. The initial engines were all supposed to be hot-tested and certified before they left Tonawanda, and each one had a tag wired to it certifying that it had been hot-tested and met specifications for power, timing, etc. The tags on the first 25 production engines were also signed-off by the Chief Inspector of the Tonawanda Engine Plant, attesting to their absolute perfection. On the day the first production, Cosworth-Vega to be shown to the public came down the line in April, 1975, the plant was full of local and national press and enthusiast magazine people, participating in our media event to mark the occasion. We pushed it off the end of the Final Line, put it in the off-line Cosworth Final Assembly Crib, and three Cosworth-uniformed assemblers spent about 45 minutes installing the manifolds, fuel injection, air cleaner, and all the loose parts that couldn't be done on the main line.

When the assembly was done, the lead assembler turned the key on cue with all the cameras and microphones and with the hood open. The engine cranked for a few seconds to build fuel pressure, then there was a resounding blast, a sheet of flame, the air cleaner ductwork was blown off the car into the assembled press crowd, and the engine quit dead. The distributor turned out to be over 90 degrees out of time from the engine plant and the engine was firing with the intake valves open. There was no way that engine was ever hot-tested at Tonawanda. After about twenty minutes' work (during which we sent the press on a hastily-organized plant tour in the “Tour Train”), the intake manifold was replaced, the distributor was re-installed, timing re-set, the air cleaner was reassembled, and the engine lit off perfectly and ran like a top. The media returned from the tour and we did the event all over again for the cameras without a hitch. None of the TV or print coverage the following day mentioned the screw-up at all - only those that were actually there ever knew about it. I was particularly relieved, as I saw my career vanishing before my eyes when the sheet of flame followed the flying air cleaner ducts over the fender in front of all the cameras during the first fire-up. An animated phone conversation followed with the Chief Inspector at Tonawanda after the press left the plant. Several other Cosworth engines in the initial shipment, still in the racks, were inspected and found to have exactly the same problem.

When we started to build the first Vega station wagons with the wood-grain side trim (a

vinyl material like contact paper that's installed wetted with Joy soap and water, then squeegeed down, formed around all the body contours, and finished around the door edges and fuel filler opening with a hot hair dryer), it was a disaster. At 100+ jobs per hour, few of the operators could form the wood-grain vinyl to the body contours without leaving wrinkles, air bubbles, and tears. We called in the specialist from Schlegel, the vinyl supplier in New York that night, and he put on a training session in the company car garage the next morning you had to see to believe. I think he could have wood-grained a basketball without a wrinkle. Whether it was out of training or embarrassment I don't know, but the guys apparently picked up the right tips and by the end of the day they could do the wood-grain operation just fine.

Fisher Body spent a fortune installing an automated windshield installation machine on the Trim Line, and two of their engineers lived with it for weeks to get the bugs out of it. It got to working pretty well until we got up to 85 jobs per hour. That cycle time was apparently all it could stand, and it literally shook itself to pieces one day. They finally gave up, and we went back to installing windshields manually with two rotating teams of people doing every other car.

When we did the 1973 model change, on the fly at 100 jobs per hour, a new rear hatch lid was introduced with a gas prop rod on each side instead of the previous model's torsion springs. Everything went fine until the first 1973 job hit the Trim Shop and they put the gas prop rods on. When they went to close the hatch, the hatch bent almost in half across the bottom of the glass opening in a straight line between the two anchor points for the gas prop rods, and you could stick your arm in the big gap between the deformed hatch lid and the quarter panel with the lid closed. Somebody had made some die changes in the hatch tools and used a lighter gauge steel than had been tested as a last-minute weight reduction, and it weakened the hatch so much that it wasn't strong enough to overcome the closing force of the gas prop rods. We shut the plant down and sent everyone home (fortunately, it was a Friday). We then spent the whole weekend working 24 hours a day with the Fisher stamping plant next door and an army of Fisher Body engineers under Geoff Waterworth, the Fisher Chief Engineer on the Vega, trying different metal thicknesses, reinforcements, and die changes to come up with a lid you could close. We finally found a combination that worked Sunday afternoon, started stamping and assembling the new lids Sunday night in the stamping plant. We ran the new hatch lids through the small-parts paint system to replace the weak ones past the Paint Shop and scrapped all the first-design lids as we took them off cars Monday morning.

By 1975 the original Vega engine was in its death throes as far as the buying public was concerned. Its propensity for overheating and seizures was well-known by then, and painting the aluminum engine Chevy orange (a brilliant fix from the Marketing people) didn't help at all. The decision was finally made to cancel it, and the real problem was to find a replacement that would fit in the Vega's engine compartment.

The Vega body and engine were literally designed around each other to allow the engine to be installed from below at a high production rate with less than 3/4" clearance, and no other GM engine had the right size and shape to go in from the bottom. The only 4-cylinder available was the old pushrod "Iron Duke" 4-cylinder originally designed in 1960 for the old Chevy II, so we devised a "dive-bomb" method to put it in from the top. As the car came down the line at floor level suspended in an overhead clamshell carrier, we took the hood off, took the complete front end panel off, swung the engine in from the front and "dive-bombed" it into place, hanging it on a chain from the carrier, then put the front end panel back on again. When the car got to the point where it was six feet off the floor and we raised the rear axle into place from below, a lift device grabbed the engine from below, lifted it up high enough to disengage the chain it was hanging from, and set it down on the engine mounts on the body. We put the hood back on when the body came back down to floor level.

We developed this weird process in an afternoon in the company car garage. It later opened the door for use of the V-6 and V-8 engines in the Monza, Skyhawk, Firenza, and Sunbird, which could only be installed from the top. We had developed a similar process about a year earlier for the much-ballyhooed GM Rotary Engine which was to power the Monza, but the Rotary went belly-up before we ever built a Pilot model. The Rotary was also supposed to power the AMC Pacer, whose engine compartment was designed around it - when the Pacer appeared, it had an AMC straight six it was never designed for, with an enormously deep depression in the firewall, added at the last minute, to make room for it.

When the bumper laws came into being in 1974, the Vega had new aluminum bumpers with a horrendously complex system of curved, laminated springs behind it to absorb impact energy, instead of the hydraulic absorbers used on all other GM cars. When we started production, we had every warm body we could find manning the bumper subassembly line trying desperately to get all the springs, holes, and bolts to line up while the whole bumper system was in a compression fixture - we were even building them on the floor and in the aisles. None of the springs were even close to print specs and Chevrolet had to go in and take over the supplier's plant for two months to get their processes under control for them so we could keep building cars.

4. THE “FISHER BODY PROBLEM” AND G.M.A.D. (GM Assembly Division)

Since the beginnings of the Corporation, the GM assembly system relied on Fisher Body Division to engineer the body from the firewall rearward, manufacture all the body parts, weld the body shell together, paint it, completely trim it inside and out, and supply the finished body to each of the car divisions (Chevrolet, Pontiac, Buick, Oldsmobile, and Cadillac). The car divisions paid Fisher Body Division for each body based on Fisher’s transfer price schedule, and added the instrument panel, front end sheet metal (hoods, fenders, grilles, etc.), bumpers, and the complete frame, chassis,

powertrain, and running gear at their final assembly plants to create the finished cars.

The “Home Plants” for Pontiac, Buick, Oldsmobile and Cadillac were located at their Division headquarters (in Pontiac, Flint, Lansing, and Detroit, respectively), but were physically remote from their supplying Fisher Body plants. One Fisher Body assembly plant in Euclid, Ohio, was hundreds of miles away from the Buick, Oldsmobile, and Cadillac plants it supplied with Riviera, Toronado, and Eldorado bodies. In all cases, bodies destined for the “home plants” were transported (on their wheeled Fisher Body conveyor pallets) to the Car Division assembly plants via huge enclosed two-level Fisher Body semi-trucks. Fisher had hundreds of these tractor-trailer rigs as a captive fleet that delivered about 5,000 bodies per day to the “home” assembly plants. When the trucks arrived at the final assembly plants, the bodies were unloaded and placed on the plant’s conveyor pallets, and the empty Fisher body pallets were then returned to the supplying Fisher Body assembly plant on the same trucks that had brought them.

The Chevrolet arrangement was a little different. At Chevrolet assembly plants, the Fisher Body assembly plant was adjacent to the Chevrolet facility, on the same piece of property, and finished bodies were conveyed directly from Fisher Body into the Chevrolet plant for final assembly. However, even at these adjacent locations, which were generally only separated by a wall, they had totally separate managements, offices, staffs and support systems, operated as separate companies, and could only deal with each other between the two Divisions at the highest level of local management. In most cases, they even had separate union locals. Even the horrendously costly Paint Shops were separate. Fisher Body had one to clean, prime, and paint the body, and Chevrolet had another one to clean, prime, and paint the front end sheet metal. In all cases (home plants and Chevrolet plants), paint color and gloss match between the firewall-back Fisher-painted body and the firewall-forward Car Division-painted hood and fenders was a never-ending problem, with DuPont (the corporate paint supplier to both sides) caught in the middle.

Why such a costly, burdensome, illogical, redundant, and inefficient way to build cars? Call it tradition, corporate politics, history, “turf” protection, and inward-focused Divisional profit goal competition, with no thought to the redundant costs and inefficiencies of production, administration and investment. This was borne out of huge corporate size, 54% market share and decades of zero domestic competition, which allowed GM to operate inefficiently and just pass the on the increasing operational costs to its customers through annual price increases.

Fisher Body marked-up everything they did as “body content” when they figured the price the Car Divisions had to pay for the finished body, so Fisher would NEVER give up assembling a part, even if it made sense to do it in the Car Division final assembly plant instead. If a Car Division wanted to transfer a part to Fisher to install because it made sense to install it earlier in the process, Fisher would “mark it up” and sell it back to the Car Division at a higher price as part of the “body as shipped”, and the Car

Division Finance types were having none of that. It was enormously parochial and political, and Fisher Body protected priceable “body content” with incredible tenacity.

A similar situation existed in the Engineering community. Fisher Body had “their” parts which they designed, developed and manufactured, and each of the Car Divisions had “their” parts which they designed, developed, and manufactured. If a Car Division engineer was responsible for a part that would be attached to the body at final assembly, he had to provide Fisher Body with documentation on how he planned to attach it, any structural considerations such as loads it might impart to the body, dimensional tolerances for the part’s location and function, etc., so Fisher could design the body to accommodate it. There was a “wall” between Fisher Body and the Car Division engineers in many areas, and frequently the Car Division engineers found it difficult to talk directly to their counterpart at Fisher that was responsible for the mating part of the body without scheduling formal meetings at Fisher that would involve ten or twenty people. Fisher even had a “Customer Relations” group that handled the flow of paper communication (“E.R.” – Engineering Release to Fisher Body) from the Car Divisions and the official Fisher response documents back to the Car Divisions, even though Chevrolet Engineering was literally right next door.

Meanwhile, way out in the hinterlands, far away from Car Division-Fisher Body politics in Detroit, another little-known Division was also building GM cars for Buick, Olds, and Pontiac (and later, for Chevrolet). The B-O-P Assembly Division grew out of wartime GM defense operations which were converted to assembly plants in the late 40’s, and had assembly plants in Linden, New Jersey, Wilmington, Delaware, Leeds, Missouri, Doraville, Georgia, Arlington, Texas, and South Gate, California.

These assembly plants were a LOT different. They built multiple Division’s car lines mixed together on the same line on a contract basis for each Division except Cadillac (that came later), and there was no “Fisher Body” in their plants. Those plants were designed with ONE Body Shop, ONE Paint Shop, ONE Trim/Chassis/Final assembly system, and ONE management structure. Their plants were integrated operations, with assembly processes sequenced and integrated based on logic and efficiency. Fisher Body and the Car Divisions supplied them with parts and assembly tooling, and B-O-P (later re-named GMAD, for GM Assembly Division) combined the parts and tooling so it made sense, put the parts on the car in the most efficient sequence on one continuous line regardless of which Division supplied the parts, painted the body and front end sheet metal together in a single Paint Shop, and built the cars at about half the variable cost of the traditional Fisher/Car Division plants.

GMAD engineers weren’t allied with either side, and worked on a daily basis with both Fisher Body and Car Division engineers to optimize both product and tooling designs for assembly productivity. GMAD engineers were frequently an informal conduit that facilitated communication between the Car Divisions and Fisher Body at a one-on-one level, bypassing the bureaucratic morass at Fisher Body that appeared to be in place

solely to frustrate engineers who wanted to get the job done.

GMAD efficiency finally caught the attention of the GM Finance types, and between 1968 and 1974, GMAD absorbed all the previous Fisher Body/Chevrolet assembly plants and set about integrating their personnel and operations under a single management structure and process sequence. GMAD became GM's largest single Division, with 26 assembly plants and over 125,000 employees. Fisher Body and Chevrolet logos disappeared from those plants, and they all became GM Assembly Division operations.

The "home plants", however, for Cadillac in Detroit, Oldsmobile in Lansing, Buick in Flint, Pontiac in Pontiac, and their five supplying Fisher Body assembly plants, were exempted from this efficiency consolidation ("tradition and divisional pride" again), and all eventually died of their own weight due to competitive cost pressures and were closed down as industrial dinosaurs, replaced by new, fully-integrated and more efficient GMAD assembly plants in other locations which built multiple car lines for all Car Divisions.

It's difficult these days to comprehend the old "traditional' Fisher Body/Car Division way of doing business, which was extremely inefficient, but that's the way GM operated for nearly fifty years. Nobody else in the entire worldwide automotive industry had design, engineering, manufacturing, and car assembly set up as independent competing companies, and it took GM until 1984 to figure it out. That was the year Fisher Body Division disappeared entirely as a result of the infamous Roger Smith re-organization, and it was also the beginning of the phase-out of individual Divisional design, engineering, development, manufacturing, and assembly at Chevrolet, Pontiac, Buick, Oldsmobile, and Cadillac, which are now small Marketing operations (except Cadillac, which was allowed to continue on a semi-independent basis, although their current plants were built and are operated on the GM Assembly Division model).

Chevrolet and GMC truck plants and the Corvette plant weren't operated like the Fisher / Car Division plants. Fisher had no part whatsoever in trucks or Corvettes, which were designed, developed, manufactured, and assembled entirely within Chevrolet, and those products were built in integrated Chevrolet-only plants (which is why you never saw "Body by Fisher" on their door sill plates).

The "traditional Fisher Body/Car Division" operating model was one of the many reasons that GM North American Operations (design, development, manufacturing, and sales of cars and trucks) didn't make a dime from 1980-1994. Virtually all of GM's profits during that period came from GMAC, Hughes Electronics, EDS, MIC, and numerous other non-automotive subsidiaries, not from their core car and truck business, and a similar earnings pattern continued for many years.

5. GMAD CENTRAL OFFICE - GM TECHNICAL CENTER, 1975-1985

In mid-1975, I was promoted and transferred from Lordstown to GMAD Central Office Product Planning and Tooling at the GM Technical Center in Warren as the Manufacturing Project Manager for the 1980 “X” Car program.

The mid-70’s saw the emergence of “Project Centers” at the GM Tech Center, to consolidate the design and development of new car programs that involved more than one Car Division at one common location, under one Chief Engineer, who reported to and took his direction from the group of corporate Chief Engineers. The intent was to share design expertise, assign specific systems of the car to each Division as the “Lead Division” for that system, to increase parts commonality across nameplates and reduce tooling investment, consolidate all the design groups for a car program in one place for improved communications through co-location of all involved disciplines, and manage the overall project under one leader. It made sense and worked relatively well, although the Divisional loyalties and politics continued to bubble under the surface, as all the personnel assigned by the Divisions to the Project Centers still worked for (and were paid by) their home Division engineering groups, not by the Project Center.

The 1977 “B-C” (full-size Chevrolet, Pontiac, Oldsmobile and Buick) was the first corporate program so organized, followed by the 1978 “A” (mid-size – Chevelle, etc.) and all subsequent corporate programs.

GMAD had a Project Manager in each Project Center as well, to manage the “Design For Assembly” aspects and to develop and commonize assembly processes and tooling across all the involved car lines. I was the on-site GMAD Project Manager for three years at the 1980 “X” Car Project Center. Following the three-plant launch of the “X” cars (Citation, Phoenix, Omega, and Skylark) at Willow Run, Tarrytown, and Oklahoma City, I was promoted to Engineer-in-Charge, Advanced Product Programs for GMAD. We tooled and launched the 1982 "J" Cars (Cavalier, J2000, etc.), the 1982 "A" Cars (Celebrity, J6000, Ciera, etc.) and the 1984 Corvette. All the GMAD Project Managers in the Project Centers reported to me at GMAD Central Office Production Engineering until I left five years later.

In late 1983, then-Chairman Roger Smith had decided that the corporation needed to be reorganized to make it more efficient and responsive, and announced that the ultimate reorganization would be a “bottom-up” rather than a “top-down” plan, developed by the people who really ran the business from day-to-day and who knew better than anyone in top management what kind of changes were necessary to achieve the objectives without disrupting corporate plans and schedules.

He then directed the formation of a middle-management “Reorganization Study Group” made up of 600 managers from all across the corporation to develop recommendations for top management’s review before implementing the reorganization. The group was to

present their recommendations to the Executive Committee in six months. I was one of the participants in the Study Group, and spent countless hours over the next six months meeting with many sub-groups as we dissected operations and developed scenarios that we knew would work better than the existing organization we knew all too well. After six months of hard work, three different scenarios, all of which we had "tested" in our sub-group and main group meetings, were presented to the Executive Committee as our recommendations for reorganizing the corporation, as they had requested. They nodded their heads, thanked us for our hard work, and we never heard any more about it – no questions, no follow-up meetings, no nothing.

Two months later, in the fall of 1984, the reorganization was announced in a lengthy bulletin that was released simultaneously to the entire corporation. Reading through it was a real eye-opener for those of us who had spent six months developing our "bottom-up" recommendations. Not one part of the reorganization bore any similarity in any way, shape or form to any of the recommendations we had presented to the Executive Committee two months earlier. We held several ad hoc small-group meetings of the Study Group, as it was obvious to us that the announced reorganization was a disaster, with little chance of working. A follow-up "White Paper" was prepared with recommendations to "repair" the announced reorganization to give it some chance of working, and submitted to the Executive Committee, and we never heard anything back on that effort either.

"Roger's Reorganization" proceeded as directed, and it would be an understatement to say that absolute chaos reigned all across the corporation as its implementation fumbled along without the support of those who had to make it work. Entire Divisions were eliminated, consolidated with other Divisions, or just left in the lurch, people didn't know who they worked for, what their operating budgets were or where they came from, where to submit appropriation requests or where to get purchasing authority for tooling and capital projects, where their office would be next week, who worked for them, who handled their Personnel or Finance issues, and on and on. It was an operational and administrative nightmare, and keeping programs and projects on planned schedule in a totally confused and demoralized atmosphere became an exercise in frustration.

Just to make it harder to swallow, Roger issued a directive along with the reorganization announcement that no promotions to Senior bonus-level executive positions would be authorized, regardless of performance evaluations, responsibilities, length of service or readiness for promotion, until the reorganization was fully implemented, so thousands of extremely capable managers were frozen in position indefinitely.

The continuous negative feedback, leaked bad publicity, and program delays finally made it obvious to the 14th Floor that the reorganization wasn't working, but nobody was willing to stand up and incur Roger's wrath by calling it a failure. Instead, little by little, a continuing series of quiet "mini-reorganizations" began, attempting to regain

some semblance of order and get things back on track. This brought even more confusion and administrative headaches within the new CPC (Chevrolet-Pontiac-GM of Canada) and BOC (Buick-Oldsmobile-Cadillac) groups, and these "repairs" continued for many years, even after Roger retired in 1990, continuing to distract thousands of people from getting the job done. The automobile business is incredibly complex and requires precise planning and synchronization of hundreds of different activities at all times, and the technical people involved didn't need their jobs further complicated by what they viewed as continuing administrative harassment and confusion from above.

Three months into the initial reorganization at B-O-C, I was approached by an executive recruiter. He had been hired by Chrysler to recruit me as the Manufacturing Engineering Manager for their yet-to-be-organized or announced Liberty Project, which would become the foundation for all future Chrysler advance product development programs. They were interested in me because of my background in assembly plants, product and production engineering, and in the GM Project Centers, as they had no one with that particular blend of qualifications and experience in their organization.

I had given some thought to leaving GM several years earlier for similar lucrative offers from Rockwell Automotive and Mitsubishi Aircraft, so I had been through the mental process and negotiating positions before, although I had elected not to make those moves. I had a series of off-site meetings in hotels over the next couple of weeks with various Chrysler executives to discuss the specifics of the position and my long-term career objectives, submitted my list of requirements to be met in order for me to leave GM after twenty-one years, and we came to an agreement in late January, 1985. I would report for work at Chrysler on February 18th.

The next morning, I sat down with my Director and submitted my letter of resignation. We had always enjoyed an excellent personal and professional relationship, and I had told him several weeks earlier that I had been approached, but hadn't made any decisions yet. I left several days later after cleaning up loose ends and leaving a status report to provide a logical starting point for my successor.

6. CHRYSLER CORPORATION, 1985-2001

Many of my long-time fellow GM colleagues questioned my sanity when word got around that I was leaving for Chrysler, as those were the days when Chrysler was coming out of the Federal Loan Guarantees and didn't have the same comfort level as working for good old GM, which could (at least so far) survive anything and still make money, even if only from car and truck financing and home mortgages.

I had given it a great deal of thought myself, having no interest in going backwards personally or financially after twenty-one years with GM. In those days, people spent their entire career with GM, and were handsomely rewarded at their retirement for their

efforts, especially as a Senior bonus-level executive.

However, beyond being flattered by having them seek me out, I had seen something new and different in the Chrysler executives with whom I had interviewed during the recruiting process. These people were energized and motivated, most of them were real “car guys”, they came across as risk-takers who had survived Chrysler’s brush with bankruptcy, and they had a plan to bounce back and succeed. They were “scrappers” who did whatever needed to be done without forming committees or fighting multiple layers of bureaucracy to plead their case. I saw an opportunity to be part of something exciting and really contribute, so I decided to take the risk anyway and make the move. It certainly had more promise for personal and professional growth than the fumbling chaos I was leaving behind me.

I reported for work at Chrysler on February 18, 1985, and spent the next sixteen years in a series of challenging and rewarding assignments as Manufacturing Engineering Manager for Project Liberty and the “LH” cab-forward program (which defined the model for “Platform Engineering” for all future Chrysler car and truck programs), Chief Engineer – Advance Process Development, Director – Large Car Platform Advance Manufacturing Engineering (the “LH” cars), the same position for the Small Car Platform (Neon), and my last five years as Plant Manager of the Viper/Prowler assembly plant. The last sixteen years had nowhere near the “stories” as the first twenty-one, but had a LOT more successes and pride in accomplishment as part of a great team effort. That story will have to wait a few more years.
(John did not end up writing the Chrysler part of his story, our loss.)

Edited by Kurt Sonen