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That Shrinking Feeling: How and Why General Motors Downsized for 1977

by Gary Witzenburg





By spring 1974, General Motors styling studios were well along with designs for full-sized cars that were leaner, lighter, and substantially smaller (*below*). A Chevrolet sedan proposal compared to a '74 production model (*inset*) dramatically showed how much smaller.

In the early Seventies, the biggest auto manufacturer in the USA began charting a new direction in the design of the full-size American car. The result marked a sea change that scuttled the big boats that had long plied the nation's mainstream.



July 1976. It's "Hell Week." That's what the automotive press colloquially calls the annual round of "long-lead" previews held by General Motors' five car divisions at the corporation's proving grounds in Milford, Michigan, to show magazine editors and writers what they will introduce in the fall.

The major newsmakers this Hell Week are all-new and significantly downsized "full-size" cars on the corporate B- and C-body platforms. The domestic industry's first such wide-ranging "clean-sheet" shrinkage (Ford had already scaled down the Mustang by borrowing liberally from the Pinto foundation), it is seen both inside and outside the business as an enormous gamble. Will Americans long accustomed to longer/lower/wider now accept shorter/taller/narrower?

Monday's Chevrolets surprise pleasantly, Tuesday's Pontiacs impress, and Wednesday's Oldsmobiles are better than expected. Now it's Thursday and Buick's turn. Riding the media bus out to the giant "black lake" asphalt skid pad, divisional chief engineer Lloyd Reuss poses a challenge: Predict the fuel economy that will be achieved by a V-6-powered "economy package" 1977 LeSabre then lapping Milford's 4.5-mile circular track at a steady 55 mph, the ridiculous "fuel-saving" national speed limit of the day.

When it finally sucks its tank dry, the trimmed-down big Buick has delivered a stunning level of efficiency—well more than 20 mpg. This young reporter, figuring it would be quite high at a steady 55-mph cruise, has guessed it right. More importantly, Reuss' point about the fuel-economy potential of full-sized cars is made.

Detroit had to do something. The U.S. auto industry had suffered mightily from the five-month Arab oil embargo and resulting fuel shortage that began in October 1973. Domestic auto sales—particularly for full-sized cars-plummeted. Plants were idled and thousands of workers were laid off. The country slid into recession. Suddenly, almost no one wanted a big American "gas-guzzler," while fuel-efficient small cars-most of them imported—were essentially selling out. On top of that came a growing set of federal safety and emissions standards, bumper-durability requirements, and the dreaded CAFE (corporate average fuel economy) law. Clearly, comfortable old ideas about how to make cars weren't going to work any more.

In February 1975, General Motors Chairman Thomas A. Murphy announced lower-priced versions of nine GM small cars in hopes of better competing with fast-selling imports. He also previewed the impending "small Cadillac"—the Seville (*CA*, June 2000)—and revealed that the corporation had embarked on an unprecedented comprehensive downsizing and efficiency improvement program that would affect virtually every automobile it made.

In the meantime, fuel prices and availability returned to normal. By spring 1976, the economy was in full recovery, auto sales were running 30 percent ahead of 1975, and 75 percent of GM's laid-off workers were back on their jobs.

In August, GM President Elliot Estes announced that the 1977 models would achieve a fleet average of 18.3 miles per gallon, a 10-percent improvement from 1976 and 50 percent better than in 1974. "This is an especially proud achievement for GM engineers," he said, "because it was accomplished despite the penalties resulting from the more stringent emissions limits"—though he added that cars sold in California would average two mpg less than cars sold elsewhere due to the Golden State's even tighter emissions limits

Murphy said GM would be well-positioned to meet the anticipated growth in demand for automobiles. "Each GM car division—Chevrolet, Pontiac, Oldsmobile, Buick, and Cadillac—will introduce completely new full-size . . . cars designed from the ground up for comfort, safety, and fuel efficiency," he said. "Never before has such a significant across-theboard change . . . occurred." However, he also announced price increases averaging 5.8 percent. How well would these new smaller, lighter GM big cars be received wearing stickers nearly six percent higher than those on the substantially larger cars they replaced?

Though the timing of these cars' appearance on the market may have seemed reactionary, the high-risk decisions to create them actually preceded the 1973 fuel crisis by several months. Perhaps more than ever before, GM designers and engineers would have to work closely together to execute this historic product transformation that only began with the '77 full-sized cars.

"We knew it was coming," GM Design Vice President Bill Mitchell (*CA*, June 2004) told the author in a 1976 interview for the 1977 *Motor Trend* buyer's guide. "We could see what was happening in Europe. Before the crisis came, the mileage story was already coming out. We knew the days of the big engines were

numbered, and it was obvious that to get acceptable performance out of smaller engines, we would have to take a lot of weight out of the cars. And there was already a trend under way at GM to get future models as efficient as possible."

"You could see this coming," echoes Reuss, who headed Chevrolet Product Planning before his 1975 promotion to chief engineer for Buick. "When I went to Chevy Product Planning in 1973, we were already working on that, and resizing our engines as well. We were getting a lot of negative reaction on the sheer sizes [of our cars] because the market was shifting to smaller vehicles. We got lambasted by the media for that at Buick. For some reason, they focused on us instead of Cadillac.

"It was an extremely big decision and a total corporate effort, the first time that we made such a corporate-wide decision, with all the car divisions involved. There was a lot of hand wringing, we had a lot of meetings at the Design Dome, and every chief engineer and general manager had his day in court."

To maximize the corporation's newly mandated CAFE numbers—derived by grouping and testing each manufacturer's cars in specific weight classes—a push was begun to trim base weights to below 4000 pounds, which meant cutting weight out of virtually every part and component. "Every month, the chief engineers met with Estes himself to see how we were doing on the weights and weight classes," Reuss relates. "If we had to put an expensive aluminum hood on a car to get it into a better weight class, we did it."

All of GM's 1977 big cars boasted high-strength, low-alloy chrome-plated steel bumpers with aluminum reinforcements for a 120-pound weight reduction. Oldsmobile introduced the U.S. industry's first all-aluminum passenger-car hood for a 40-pound savings on a limited number of Delta 88s and Custom Cruiser wagons. The combination of downsizing, component redesigns, and material substitutions dropped Chevrolet's '77 full-sized coupes and sedans into the 4000-pound EPA weight class from the 5000-pound category in 1976.

Leadership of the critically important design development programs was divided between Mitchell's top two executives: Chuck Jordan (*CA*, December 1992) for Chevrolet and Pontiac; and Irv Rybicki for Oldsmobile, Buick, and Cadillac. "We knew that we had to make this car as

sheer-looking as possible," Mitchell said, "so it would not appear to be shortened up. There was no time for trial and error. We knew exactly where we were going and what we were going to do." He dubbed this new style the "sheer look."

Exterior designer Wayne Kady (CA, April 2001) worked on the '77 full-size Buick program before being promoted to chief designer at Cadillac. "We were asked to take 1000 pounds out of the cars to get the fuel economy up," he recalls. "I don't know if we reached that, but I think we were close. For years, there was a mentality to make luxury cars bigger, longer, lower, wider. So now we were to reduce the size yet keep the luxury and grandeur. I remember Mitchell saying that a Cadillac was the most formal of all GM offerings and should have creases like freshly pressed pants. It was a challenge, and when we first saw the cars on the road, they looked awfully small compared to what we had been offering."

Said Mitchell at the time: "As we made them dehydrated, more lean and sheer, we had to preserve the interior dimensions. It was a tough job for a designer. ... We knew that the buyer was not going to trade his old car in for a new one that he didn't like as well. We wanted to make sure it would look better than before. So we took the puffiness out and put in the sharp, razor-edged, sheer profile. But we were careful to keep enough curvature and sculptured, finely tailored lines so it didn't come out looking like a box.

"We brought the roof out and the sides in closer to the wheels [so we] lost a little hip room dimensionally, but you won't notice it because you can sit over further. The grilles have a machined look, and other details are carefully designed to fit the theme. You can see the beginning of this new look on the Seville."

GM's '77 full-sizers retained body-onframe construction, but there was more rationalization of wheelbases. Where there had been eight ranging from 121.5 to 151.5 inches in 1976, there were essentially now four: 116 inches for B-body Chevrolets, Pontiacs, Oldsmobile Eighty-Eights, Buick LeSabres, and related station wagons; 119 inches for C-body Olds Ninety-Eights and Buick Electras; 121.5 for C-body Cadillacs; and 144.5 for Cadillac's eight-passenger sedan and limousine that replaced the previous D-body formal cars. (To be strictly accurate, Pontiac and Buick listed their wheelbase lengths as 115.9 and 118.9 inches.) The new B-bodies had the same wheelbase as the carryover A-body intermediate four-door sedans and wagons, and exterior dimensions were quite similar; in a few instances, the intermediates actually were fractionally larger than their full-sized stablemates.

With two- and four-door hardtops now retired, GM's new breed of big cars was restricted to three body styles—coupe, four-door sedan, and station wagon—all with fixed B-pillars and fully framed door glass. The C-body cars shared the same two- and four-door rooflines, and the B-body four-door sedans and wagons had common appearances. B-body coupes, however, showed a bit more individuality. Two-door Chevys (CA, December 1990) featured a sloping C-pillar with a wraparound backlight that was sharply creased at the corners. Oldsmobile Eighty-Eights sported a wide sail panel with a vertical forward edge. Pontiac and Buick LeSabre coupes used the same slender canted C-pillars with a choice of B-pillar widths: wide for deluxe models or narrow for base versions. Station wagons surrendered the gimmicky "Glide Away" disappearing tailgate of 1971-76. A three-way tailgate that could pivot from the side or bottom and operate with the window open or closed was standard.

Designers strove to maintain familiar brand-identity markers in these drastically remade cars. Chevrolets continued to sport triple taillight groupings, Pontiacs had divided grilles, and Buicks were adorned with "portholes." Cadillacs, of course, kept up at least a hint of having tailfins. "One of the biggest challenges on the Cadillacs," Kady recalls, "was the taillamp treatment. If you look at the evolution of the fin, it started in 1948 [CA, December 1992] and evolved to 1959 with the biggest fin ever [CA, August 1988]. Then it was reduced until they took the fins off for '65 [CA, February 2008] but started again in '67 [CA, October 2003] with a different bumper profile and the taillight full height in the bumper end. That evolved until we started getting into offsets for the 1974 five-mph bumpers with 'enersorbers' and soft quarterpanel extensions. . . . For '77, we ended up with a taillight fastened at the top that 'stroked' with the bumper. We spent a lot of time on the corners of the car, the details and the 'jewelry,' which we thought helped make a difference."

Chevrolet Chief Engineer Tom Zimmer confidently predicted that "the new Chevrolet design will prove to be one

of the most remarkable successes in our history," adding that when Chevy consumer-tested its new Impalas and Caprices, the result was "one of the most positive clinics we have conducted." For the first time in several years, a 250-cid inline six-cylinder engine came standard in full-sized Chevys, though a 305-cube two-barrel-carburetor V-8 that was standard in wagons was the volume choice. Also available was a 350 four-barrel V-8 with an economy rear axle. Zimmer said fuel economy of the average '77 Chevy would be about two mpg better than the equivalent '76, yet he touted the 350's 0to-60-mph performance as 10.8 seconds, basically the same as the '76 400-cid V-8.

Pontiac's '77 Catalina, Bonneville, Bonneville Brougham, and Safari and Grand Safari wagons were roughly a foot shorter and 3.5 inches narrower than their 1976 counterparts, yet their front and rear headroom and rear legroom and knee clearance were significantly improved. Base Catalina power now came from Buick's 3.8-liter (231-cid) V-6, with a new 301-cid V-8 that was standard in Bonnevilles and Safaris as an option. Extra-cost V-8 engines available across the board included 350s provided by various GM divisions and a 400—or, for California-bound cars, an Olds-built 403.

Oldsmobile Delta 88s, base and plusher Royale, also switched to the 105-bhp Buick V-6 but offered a different trio of available "light-weight" V-8s: a 260, a 350, and the 403. Custom Cruiser wagons and Ninety-Eight Luxury and Regency models started out with the 350-cube V-8.

Having revived production of its Sixties-vintage V-6 (CA, December 1995) for some 1975 models, Buick next put it in a few '76 LeSabres (CA, December 2007). Come 1977, it was the base engine for all LeSabre and LeSabre Custom offerings. "Our volume was down in the mid Seventies," Reuss relates, "partly because we had this image as gas guzzlers. Buick had become the symbol of inefficiency, thanks to The New York Times and other articles about 'Buick gas guzzlers.' So we worked hard [on these cars] because they were an opportunity to change that image. We thought we might be hurt the worst, but it ended up being a great opportunity and a blessing in disguise, probably more for Buick than any other division. The styling was crisp, with sharp edges, not soft, and a few years later we set an all-time sales record."

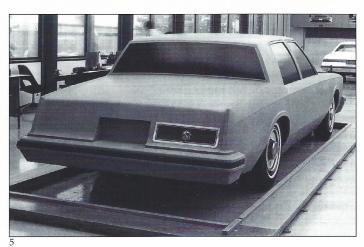
For buyers who still preferred a V-8, options began with the Pontiac 301 (which











1. In 1976, Buick station wagons and C-body Electras were 127-inch-wheelbase cars that weighed 4500-5000 pounds. (Owner: Jimmy Wilfong) 2-5. A Cadillac-like grille was seen on clay models of the 1977 LeSabre coupe (2, 3) and Electra four-door sedan (4, 5) in progress on May 17, 1974. 6, 7. The emerging Electra design as seen about a month later. 8, 9. By August '74, headlights had picked up a cutback look that would be adopted, but the lens covers, lower-body sculpting, and "BMW notch" in the roof pillar wouldn't last. 10, 11. This Electra clay lacks the grille and straight-edged rear quarters found on the final product. 12. The 1977 Estate Wagon was pared back to a 115.9-inch B-body wheelbase.

was standard in a new LeSabre Sport Coupe that featured a stouter suspension and "blackout" exterior trim). A 350—the base powerplant in Estate Wagons and the Electra 225/Limited lineup—and the 403 engine could also be had.

There was one more member on the ros-















ter of downsized Buicks: the Riviera personal-luxury coupe. Previously built from the corporate E-body that still served the Oldsmobile Toronado and Cadillac Eldorado, the '77 "Riv" (CA, December 1987) emphasized Buick's commitment to slimming down by switching—if only briefly—to the new B-body. That meant chops of 6.1 inches of wheelbase and about 750 pounds. A blunt front fascia, rear-quarter fenderline "kick-up," opera-window roof, rectangular taillights with hints of Rivieras past, and unique interior details

differed from LeSabre coupes. However, things like the instrument panel, doors, and chassis made clear their common ancestry. A standard 350-cube engine could be upgraded to the 403 V-8.

The average weight reduction for Cadillacs was 950 pounds, just shy of the 1000-pound target. "This substantial downsizing has been achieved with virtually no loss of driver and passenger comfort or security," said then-General Manager Edward C. Kennard. "The only way you'll know they're smaller . . . is when you

park one in the garage and you can walk around it," said design chief Mitchell. The plush Fleetwood Brougham, which had for years ridden a unique wheelbase, now shared its chassis with the "lesser" De Villes, but a tapered B-pillar was a distinctive appearance touch that tipped its cap to the Fleetwood sedan's long history. A new 180-bhp four-barrel 425-cid V-8 powered all the downsized Caddys, with a 195-horse fuel-injected version optional for all but the long-wheelbase formal cars.















Auto reviewers generally praised GM's slimmed-down big cars, including some who were not often kind to domestic products, especially large ones. *Car and Driver's* Don Sherman wrote a fairly glowing report for the October 1976 newcar issue:

"The five divisions of General Motors will grab all the thunder—and, we predict, the lion's share of sales as well—in the big car segment. What [they] have going for them is modern thinking. Their heightened efficiency will make them

sure winners. . . . The 1976 model year demonstrated a strong resurgence of big-car interest that the new wave from GM will surely sustain. But 1977 will be remembered as the year full-size sedans faced up to the inevitable trauma of getting smaller."

C/D's review of a '77 Chevy Caprice Classic called it a "great bright hope of sunshine...smaller and better all at once" and "one new car with its priorities right. Function is foremost, and within that context, it's light, efficient and plain, old-

fashioned fun to drive," especially with the optional F41 suspension and GR70-15 GM-spec radial tires on seven-inch-wide wheels. "Turn down toward the apex on the racing line and you'll feel like you're riding a Camaro with a usable backseat," the magazine said.

Motor Trend was as impressed—if not more. It bestowed its annual Car of the Year Award on the new Caprice. "When it all was analyzed, Chevrolet had simply put the act together in a harmonious whole that combined performance, econ-













omy, looks, comfort and handling in one outstanding package," wrote John Christy, later concluding, "On balance, the new Chevrolet Caprice is the most car you can get for your dollar in the American idiom today."

continued on page 34

1. Cadillac's best-selling De Ville series concluded the 1971-76 generation on a 130-inch wheelbase. 2-5. Early small-scale theme models (2, 3) led to a full-size clay (4, 5) as seen on March 21, 1973. 6. Squared-off wheel openings survived into production, but a low, wide grille would not. 7. This Caddy clay showed off something of a Seville-inspired look. 8-10. A Coupe de Ville concept from July 11, 1974, with fender skirts, triangular rear-quarter window, and rectangular taillights that would be rejected. 11, 12. Designers eventually opted to give the rear of the C-body Cadillacs a suggestion of a tailfin. 13. Cars like this Coupe de Ville that reached Cadillac showrooms in '77 shed an average of 950 pounds.



















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1. Chevrolet built its final pillarless hardtops in 1976 on a 121.5-inch wheelbase. 2-7. Clays from fall 1973 showed varied approaches to a '77 design. 8, 9. An Italianate coupe was reviewed the following March. 10. The same design as a hatchback. 11-13. The upright roofline on models photographed in April (11, 12) and May (13) '74 predicted Chevy styling for 1980. 14-17. Grille and bodyside features were nearer to final form by June, but roofs were still unsettled. 18. The Caprice Classic, its grille more ornate than that of the Impala, was Motor Trend Car of the Year.



















That wasn't the only high-profile attention the new GM cars received. In May, a specially prepared Oldsmobile Delta 88 Royale coupe served as the pace car for what turned out to be A. J. Foyt's record fourth career Indianapolis 500 victory.

America was definitely ready for somewhat slimmer, more efficient family and luxury cars that did not require them to sacrifice big-car roominess and ride. All five divisions' full-sized cars improved on the sales momentum that had begun the previous year. Pontiac, which had been the corporation's weakest big-car producer in '76 (CA, October 2006), hiked model-year production by 51.5 percent. Chevrolet increased Caprice and Impala assemblies by 56.1 percent—to

661,661—regaining honors as America's most popular car line in the process. In a robust year for the industry overall, the reconstituted big cars helped General Motors realize model- and calendar-year vehicle sales records, performance that "fulfilled all but the most optimistic forecasts," said the company's 1977 annual report. "It was the second consecutive







1. The Ninety-Eight, Oldsmobile's long-running luxury series, was on a 127-inch wheelbase in '76. 2, 3. Strong hints of the '76 grille styling showed up on this clay for the B-body '77 Delta 88 from May 1974. 4, 5. A different roof treatment on the other side of the same model was closer to what was ultimately chosen for Delta 88 coupes. 6, 7. The blunt hood and lower-body character line on this June '74 clay approximated production details, too. The roof was akin to that used on Pontiacs and Buick LeSabres, however. 8, 9. A Cutlassinspired grille and taillights were rejected. 10, 11. The Olds B-body sedan as of August 15. 12. The C-body '77 Ninety-Eight was 11.8 inches shorter than its immediate predecessor.

year of new GM highs in dollar sales, net income, earnings per share, dividends, and payrolls."

The downsizing of the big family cars in 1977 was only a beginning. Over the next few years, GM's intermediates, personal-luxury coupes, and sporty "ponycars" would shed size and weight. Rivals Ford and Chrysler would also get in line

to shrink their full-size models by the end of the decade.

But who could have predicted a second painful fuel crisis (which some contend was artificially manufactured) in 1979? Or that GM would soon embark on a second round of full-sized-car downsizing, accompanied by a sweeping conversion to space-efficient front-wheel drive? Or that

1976 vs. 1977 Full-Sized Oldsmobiles: A Comparison

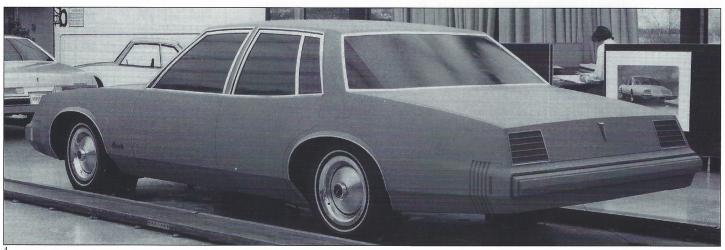
specification	1976	1977
wheelbase (in.)		
Ninety-Eight	127.0	119.0
Eighty-Eight	124.0	116.0
Custom Cruiser	127.0	116.0
length (in.)		
Ninety-Eight	232.2	220.4
Eighty-Eight	226.7	217.5
Custom Cruiser	231.0	217.1
height (in.)		
Ninety-Eight	54.7^{1}	56.6^{2}
Eighty-Eight	54.5^{3}	55.7^4
Custom Cruiser	57.1	58.0
width (in.)		
Ninety-Eight	80.0	76.8
Eighty-Eight	80.0	76.8
Custom Cruiser	80.0	79.8
tread, front (in.)		
Ninety-Eight	63.7	61.7
Eighty-Eight	63.7	61.7
Custom Cruiser	63.3	62.1
tread, rear (in.)		
Ninety-Eight	64.0	60.7
Eighty-Eight	64.0	60.7
Custom Cruiser	63.7	64.1
weight, average (1)	bs)	
Ninety-Eight	4,586	3 <i>,</i> 792
Eighty-Eight	4,297	3,525
Custom Cruiser	5,032	4,080
fuel capacity (gals	s.)	
Ninety-Eight	26.0	24.5
Eighty-Eight	26.0	21.0
Custom Cruiser	22.0	22.0
engine, std. (type/cid)		
Ninety-Eight	V-8/455	V-8/350
Eighty-Eight	V-8/350	V-6/231
Custom Cruiser	V-8/455	V-8/350
engine, opt. (type	/cid)	
Ninety-Eight	_	V-8/403
Eighty-Eight	V-8/455	$V-8/403^5$
Custom Cruiser	_	V-8/403
base price, averag	e (\$)	
Ninety-Eight	6,481	6,869
Eighty-Eight	5,062	5,287
Custom Cruiser	5,712	6,011
production, model year		
Ninety-Eight	104,479	139,423
Eighty-Eight	152,813	213,581
Custom Cruiser	22,316	32,827

¹Four-door hardtop; coupe 54.2. ²Four-door sedan; coupe 55.5. ³Four-door models; two-door hardtop 53.4. ⁴Four-door sedan; coupe 54.5. ⁵Top option; 260- and 350-cid V-8s also available.













this time it would badly underperform and overreach with fleets of too-small, too-bland, and poorly built front-drive boxes that would spin America's automaking giant to the brink of bankruptcy by the early Nineties? That's a long, sad story for another time.

1. A 1976 Pontiac Bonneville (with Landau top option) aboard a 123.4-inch wheelbase. 2, 3. As it stood on May 16, 1974, this '77 Catalina coupe clay looked a bit like an overgrown version of what would be the 1978 LeMans intermediate. 4. A Bonneville sedan mock-up from the same date. 5-8. A week later, the coupe model (5, 6) with minor trim changes and an alternate four-door sedan (7, 8) concept were seen in the General Motors Technical Center styling-review courtyard. 9, 10. The hood, grille, and decklid on this July 1974 model were nearing final form, but its creased rear glass would appear on Chevy coupes. 11. The '77 Bonneville deftly carried on its forebear's look in a smaller size.









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