ROAD & TRACK

MAKE IT YOUR OWN VOL. 3 CUSTOM

THE 2021 JAGUAR F-TYPE

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THE CUSTOM CULTURE REVOLUTION

WHY DO AMERICANS RETHINK, REBUILD, AND RECRAFT PERFECTLY GOOD CARS? BECAUSE WE CAN.

AT THE HEART of car culture lurks a powerful strain of creative destruction. A certain species of enthusiast chases a rare machine to the far reaches of the Internet or rummages through barn chambers. He or she then buys the car, only to deplete all resources customizing it in ways that make other species of enthusiasts cringe.

In this Custom-themed double issue, we hack through the fascinating world of custom culture (and Kustom Kulture) and examine the impulse to not leave well enough alone, to transform a work of art into a new, more personal work of art.

Like a lot of great moments in art, the lunatic flamejob Von Dutch painted on this Mercedes 300SL Gullwing is a desecration of sorts (the car was eventually returned to its original paint scheme before being re-sold). But that's why we loved it. Not because it was beautiful (it was, arguably, not beautiful), but because it was a singular statement, a risky embrace of individualism at a time when corporations were defining what was acceptable. The Von Dutch Gullwing also tidily represents the collision of two worlds—that of the historically reverent *Road & Track* and the transgressive, expressive customizer.

It's that collision we aimed to capture on the cover when we got our hands on a $450,000 McLaren 765LT—the same model that contributing editor Matt Farah reviews in the Dossier on page 132—and gave it to custom-paint legend Dave Shuten. As reference point and inspiration, we tracked down photos of the most divisive custom paint job of all time. As it turns out, Shuten already knew all about the Von Dutch Gullwing and was eager to have a go at the McLaren. In a way, our hot-rod McLaren is not so different from the Canepa 959. There's nothing wrong with the original Porsche 959. After all, the 345 959s that Porsche built were among the most coveted limited-run factory-built sports cars ever made. Left unmolested, each 959 is worth more than a million dollars. As John Pearley Huffman writes in "King of America" (page 042), the 959 was meant to inherit the throne held by "the 917, 934, 935, 956, and dozens of other regal Porsches."

When the 959 was introduced in 1986, it was the most technologically ambitious car on the road. It was also demonically fast, producing 444 hp at a time when 250 was considered almost irresponsible. But Bruce Canepa, a maestro of creative destruction, looked at the 959 and saw something that required a complete re-imaging.

From painstakingly hand-modified 1/64 die-cast models to a frivolous small-block-based V-12 to an exploration of the galaxy of custom Porsche 911s, *Road & Track* salutes the bold, the beautiful, the transgressive, and the shocking. But, above all, we celebrate the individual automotive expression. Enjoy.

MIKE GUY
EDITOR IN CHIEF

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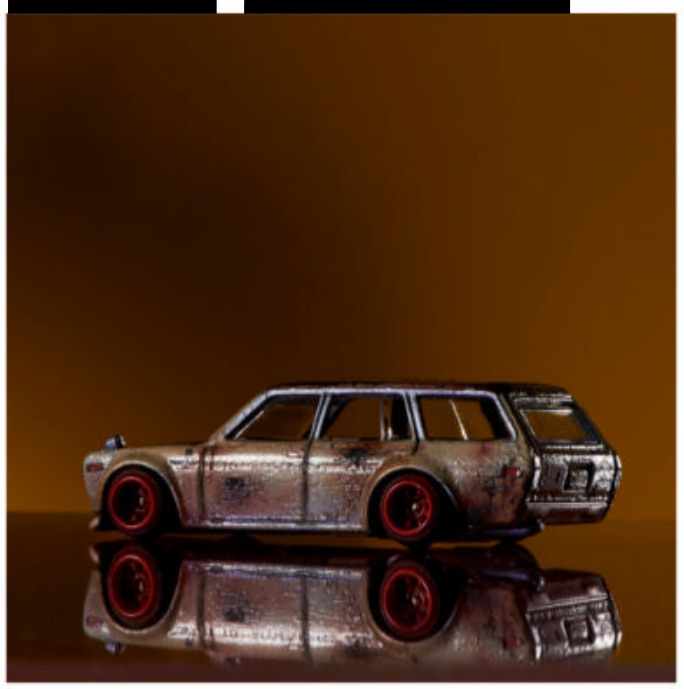

THE LIFE

THE WELL

COVER BY **SPENCER LOWELL**

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VOL. 3: CUSTOM

THE GRID

CONTRIBUTORS

Matt Farah

I'M THE HOST and producer of *The Smoking Tire* YouTube series and podcast and the owner of Westside Collector Car Storage in Playa Vista, California. I currently own four-, six-, eight-, and twelve-cylinder cars from 1986 to 1991. I selflessly agreed to a second loan of a McLaren 765LT so that I could help with photographing the car. I'm a giver. Also, I didn't get around to scaring everyone I know during my first drive of the LT.

Paul Kix

I'm a writer and entrepreneur whose best-selling book, *The Saboteur*, was optioned by DreamWorks. I keep a newsletter on my website about the creative types who inspire me. Currently, I'm at work on a second book for an imprint of Macmillan. For this issue, I wrote about how Lewis Hamilton, with guidance from his performance coach Angela Cullen, has built himself into an unbeatable force in F1. I've also written for the *New Yorker, GQ*, *New York*, ESPN, and the *Wall Street Journal*.

Ryan Melgar

I'm a visual artist from Manila, Philippines, and I mainly do semi-realistic illustrations for several publications from several countries. For this story on building the ideal racing driver, I was told that my portrait of Lewis Hamilton needs to show him shirtless. No problem; there are a lot of existing shirtless portraits for reference. The most challenging part was painting his beautifully detailed tattoos.

Lawrence Ulrich

I'm a New Yorker now. But every return to my hometown, Detroit, reminds me that muscle cars couldn't have been created anywhere else. Yes, the Motor City's malaise years did lasting harm to their reputations. But Mark Stielow's time-tripping, Pro Touring Camaros are the latest example of how vintage muscle cars are now loved and appreciated everywhere for their inimitable Detroit cool and troublemaking character—even as they continue to inspire a new Golden Age of muscle.

R&T

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THE LIFE

American Racing Torq Thrust Original
Ten minutes and a lug wrench can change your car's whole look. No wonder a wheel swap is one of the most common car customizations. The American Racing Torq Thrust has been one of the aftermarket's go-to wheels for about 60 years. Today's Torq Thrust Original brings the classic style to modern cars.

PHOTOGRAPH BY **KENJI AOKI**

BY **KYLE KINARD**

HOW ONE MICRO MODI

THE COPS JUST pulled up. The K-9 unit's here and the dog is out, sniffing around the trunk of a highly modified import. Pulses rise. A man with slicked-back hair relaxes against the powder-blue sedan, hands stuffed into his pockets. His posture is picture-perfect cool, but you can almost feel the man's sweat-soaked pits as a second officer pulls out a notepad and pen.

It's all fake, of course—a scene ripped straight off the Instagram page of Paul Brewer, 36, of East Rochester, New York. Brewer is a paint-and-body man who moonlights as a Hot Wheels die-cast customizer. His elaborate dioramas of 1/64th-scale die-cast vehicles and tiny figurines are filled with whimsy, rendering his passion for fast cars with the delicate idealism of a Cézanne still life.

While you'll find every shade of expression across Instagram's community of die-cast customizers—wacky candy-sparkle lowriders, stanced-out rust buckets, mud-soaked 4x4s—the dioramas on @pdubrewer stand apart. His scenes feel like they come from some collective memory, especially if you grew up like any restless American gearhead, gathering in oil-stained parking lots to raise hell under buzzing sodium lights.

Brewer has always been car-crazy. He started his adult life as a professional detailer, then progressed to body and paint work, eager to mend metal that stirred his imagination. His dad, a longtime

MAN BUILDS HIS DREAM CARS IN DIE-CAST.

FIED

PHOTOGRAPH BY **HANNAH WHITAKER**

Nissan mechanic, must've passed along the gene. But Brewer stumbled into the die-cast hobby by accident when a Hot Wheels Honda Civic caught his eye in the grocery store. Brett, his buddy from way back, owned a black '91 just like it.

"So I bought it for a buck as a joke and posted it on my Instagram page .... 'Brett, surprise, I just got a Civic.' And I hashtagged it #HotWheels. This was the end of 2014," Brewer said. Out of curiosity, he clicked the #HotWheels hashtag, swinging open the door to a whole new universe.

"There's a huge customization community. You get the guys doing JDM, and there's a lot of American muscle. I was blown away, like, 'Whoa, what is this?' There's guys customizing everything down to the tiny wheels. I thought, 'Oh, this is different.'"

The die-cast hook set deep. Brewer's early efforts were crude but plentiful. For the first couple years, he simply stripped and repainted the die-cast bodies, sharing his work with the modding community on Instagram. Rather than cocking a skeptical eye at the newcomer, the community offered help, advice, encouragement. Imagine that.

"It's actually crazy the bond that our little community has. I don't know that it's the same with other hobbies. But the die-cast community, they rally around each other," he explained. "Sixteen of us pitched in recently and did pink customs for breast cancer awareness. We raised like 1500 bucks. Maybe even more. There's a guy in the community who's losing his land, so [the community] started a GoFundMe to help."

Spurred on by his fellow customizers, Brewer kept at it. Seven years in, he's one of the more active and masterful practitioners on Instagram. The hobby filled most corners of his life, from the spare bedroom to a small workshop. Eventually it spilled into his living room: Brewer often tinkers with die-casts on the couch while his wife watches TV. His process has become more thorough, methodical, and organized with time. But it always starts with the same spark.

"I have to imagine myself driving the car. That was my taste from day one. No disrespect to the guys that do full crazy paint jobs and rainbow colors, but I stick to two tones at most. I'll throw racing details on certain ones, but I like to keep them clean," Brewer said. "I generally lean toward the import side, because that's how I grew up. I like them more, the old import boxy cars, the small JDM cars, the way they look."

Sometimes he'll spot a modified car on the street, then pick up its die-cast doppelgänger. The process begins by separating the body, held on by one or two posts, from its plastic underbelly. Brewer strips the paint with chemicals, then gets to work with a file, smoothing out casting seams in the metal, refining rough edges until the body is smooth.

To simulate a slammed stance, Brewer trims out the underside of the body, fitting custom 3-D printed wheels sourced from friends in the community and adjusting them for the perfect tuck and poke. He lowers the car's "suspension," raising the factory stick axle with custom axle tubes so the die-cast body sinks toward the ground. A set of "bolt-on" overfenders adds JDM cool, then it's off to paint. Tiny details—printed headlights, a bumper-mounted intercooler (or a full engine swap), spots of oxidation—complete the build.

On average, the process takes two days, but the timeline fits Brewer's mood.

"I've done a custom that takes just as long as a conversation, you know, 30 minutes start to finish, using paint that dries faster," he said. "But then I have customs that I've had in progress for probably the last two years that aren't done."

Brewer poses his die-casts against diorama backdrops and photographs them for display on Instagram. The small sets crackle with gearhead nostalgia. These tiny worlds feel lived-in, loved by the scale figurines that inhabit them, such is their level of detail. In some ways, the sets are an escape hatch from the tough realities of life.

"I did have to leave work for about a month in March, and that was my relief," Brewer said. "I'd wake up and say, 'Okay let's do a couple [die-casts] today. Let's build something.' That killed time for me."

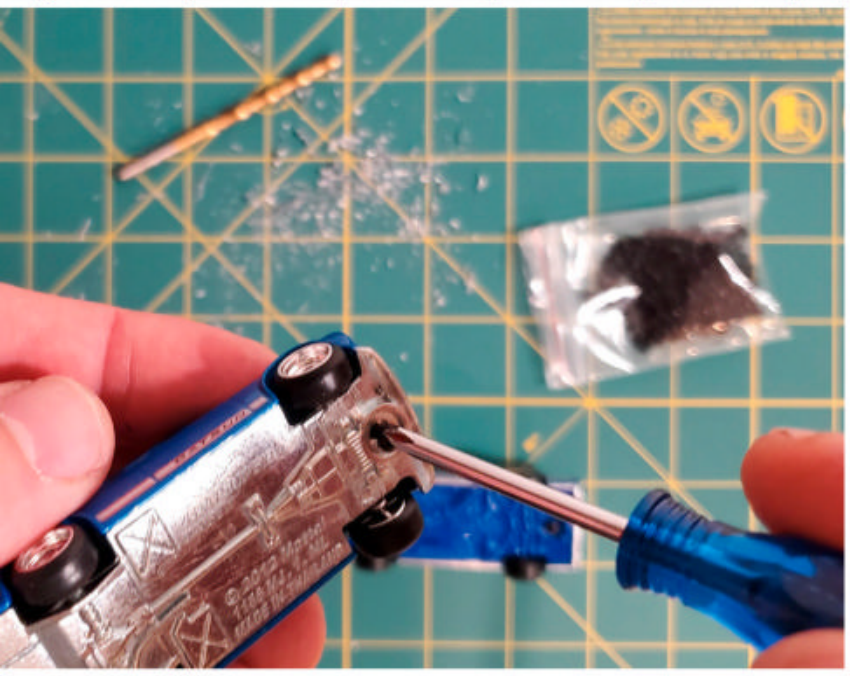
In other ways, the die-cast sets are aspirational.

"Half the reason I got into the little ones was not being able to afford doing the big ones," Brewer joked. But mostly, Paul Brewer's die-casts are passion writ large, in the smallest form.

A. Endless possibility, wrapped neatly in cellophane and available for just $1.
B. Step one: Liberating the body from the chassis by removing the mounting posts.
C. Like a real-life car, the factory Hot Wheels components are merely a jumping-off point for modification.
D. Common U.S. paint strippers have been shorn of strength in the last couple years. That often means two or more soaks to rid the diecast body of its stock paint.
E. An almost-bare body, ready for filing and refining, ahead of a custom paint job.
F. The market for 3-D printed custom wheels thrives among Instagram's die-cast modding community. Any wheel you want can be replicated.

COURTESY JENN BREWER


HOT WHEELS
EST. 1968
FAVORITES
'71 Datsun Bluebird 510 Wagon
Real Riders



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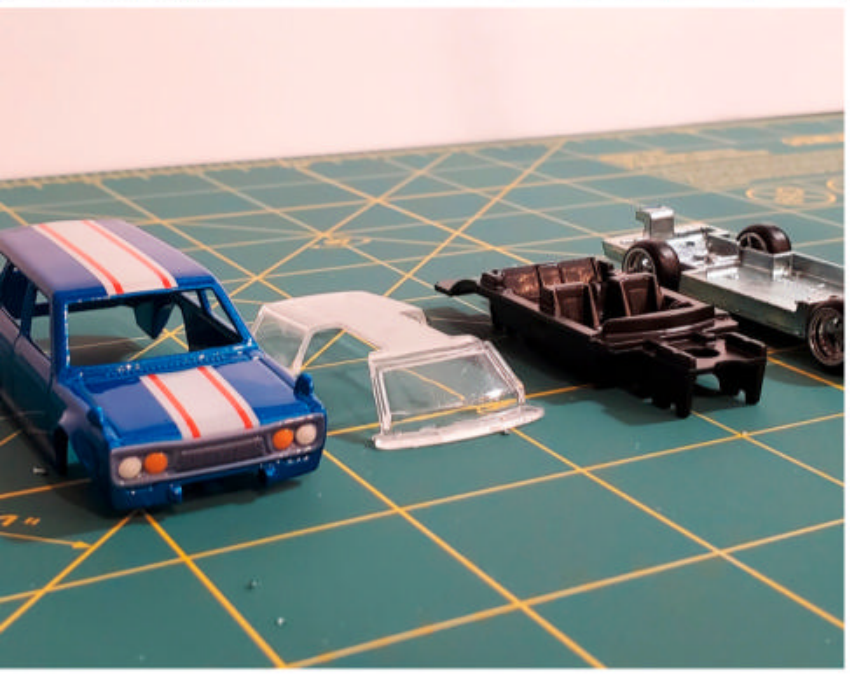

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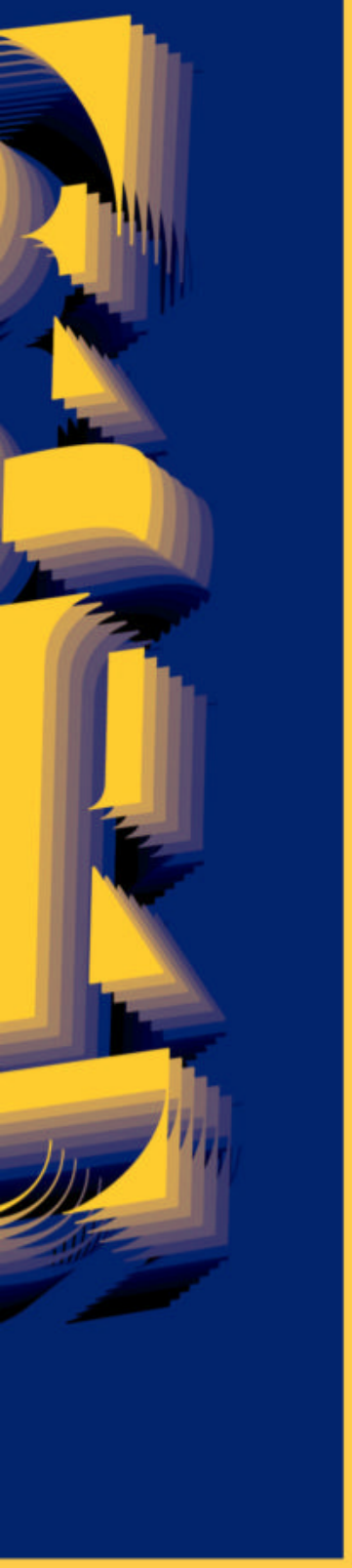
WHAT DOES IT EVEN MEAN?

THE WORD "CUSTOM" HAS BECOME THE WORST KIND OF OXYMORON.



IN THE BEGINNING, there was only custom. Shape your own stone ax. Weave your own basket. Everything was engineered to hazy eyeball standards and built out of whatever was lying around. That changed around 1450 in Hungary when the "carriage trade" was born, and all the rich people started trying to one-up each other with superfancy horse-drawn coaches. Mere carts and wagons were for farmers and tradesmen. The elite commissioned fine coaches. That's when "custom" was born—for the first time.

The industrial age brought standardization and mass production, and products that were once miraculous became ordinary. Anyone could have a Model T. Then, in 1919, George Riley of Los Angeles invented the "MultiLifts" that multiplied the valve lift on the Ford engine, increasing its power. This, the first known product intended to modify a car already in the hands of consumers, is the second birth of custom.

The auto industry abuses a lot of words. "Platinum" doesn't mean any metal, an adjective like "intrepid" becomes a noun when attached to a Dodge, and there's never been anything limited about the name "Limited." But "custom," is the most abused of them all. And now is the time to reclaim "custom" from the clutches of Detroit's meddling marketeers.

"Popular actor Tyrone Power knows what it takes to be a winner," went the 1939 ad copy. "That's why he drives DeSoto!" What separated the '39 DeSoto Custom from the plebeian Deluxe model were such luxuries as dual sun visors, dual horns, dual taillights, and "luxurious Blue or Tan Broadcloth" upholstery. Maybe DeSoto wasn't the first car company to use Custom so casually. Maybe it was.

The top all-new Ford for 1949 was the Custom. In 1950 the line-topper became the Custom Deluxe, and in '52 it became the Customline. When the '57 Fords appeared, the name Custom migrated to the bottom of the line. After more name jugglings, in 1976 the Custom 500 was a stripper sold to fleet customers.

Every American manufacturer has abused the term. The best Dodge in 1955 was the Custom Royal Lancer La Femme built for the ladies. In 1971 and 1972 the Custom Cruiser was Oldsmobile's big wagon. The toniest 1965 Chevy passenger van was the Custom Sportvan. Today, the Chevrolet Silverado pickup's base model is still "Custom."

Mass-produced customization is an oxymoron. But "custom" has transmogrified in the 21st century. Companies like Art Morrison Enterprises will build a custom chassis for practically any project. Write a big enough check and Chip Foose will craft a machine that will win car-show trophies the size of a fire truck.

Beyond that, the Internet has built a worldwide parts market, CNC machining is easy, 3-D printing makes instant prototypes, and off-the-shelf electronic modules replace complex wiring looms. GM, Ford, and FCA all ship brand-new engines and transmissions as complete units in crates. The parts and pieces needed for creative customization have never been easier (if not cheaper) to find.

During his lifetime, Tyrone Power owned at least two Duesenbergs, the epitome of automotive tailoring. Only the bare chassis, straight-eight engine, and drivetrain came from Duesenberg in Indiana. For Power's 1930 Model J Torpedo Berline convertible, the body was done by Walter Murphy in Pasadena, California, and there isn't another Duesenberg like it. Every Duesy was custom.

Many manufacturers have shown electric concept cars based on almost-flat chassis containing the battery packs and motors. These "skateboards" could have any sort of body built atop them. How regulators will view that is another subject.

The word "custom," brutalized and diminished by car makers for almost a century, is about to become meaningful again.

BY **JOHN PEARLEY HUFFMAN**

ILLUSTRATION BY **ALINE KAORI**

FOOT JUICY FANCY FREE

A BRIEF HISTORY OF F1'S MOST UNSAVORY PODIUM CUSTOM.

AS CELEBRATORY CUSTOMS GO, the "shoey" is revoltingly simple: Take a shoe—yours, or someone else's. Fill it with a beverage—traditionally beer, though champagne is an acceptable substitute. Then pour it into your mouth.

Yes, we're talking about Daniel Ricciardo's customary podium champagne shoey.

Ricciardo debuted the boot-chug at the 2016 German Grand Prix. Since then, he's done shoeys with then-teammate Max Verstappen, competitor Lance Stroll, and even his boss at the time, Red Bull chief Christian Horner. He's downed foot juice alongside Sir Patrick Stewart and fellow Aussie Mark Webber. A few months ago, seven-time champion Lewis Hamilton joined the act.

The shoey's origins are obscure. Historians cite evidence of footwear as impromptu drinking vessels throughout antiquity, though mostly of necessity. An Ethiopian tale from the Middle Ages suggests the Virgin Mary filled her shoe with water to let a thirsty dog drink; the Prophet Muhammad is described performing similar acts of mercy.

Eventually, more-potent potables found their way into footwear. At the turn of the 20th century, in your classier brothels, a gentleman might swipe a dancer's slipper and fill it with champagne, an act of raunchy decadence first attributed to a member of Prince Henry of Prussia's entourage. (The prince himself is credited with more respectable innovations, including a version of the windshield wiper.)

German soldiers apparently had quite a taste for shoe beer. A World War I hazing ritual forced bottom-rank newbies to drink from a more senior soldier's boot, while after a battle victory, it was the general's boot that got filled, and everyone took a sip. Perhaps you're familiar with the bierstiefel, the tall boot-shaped glass mug found at German biergartens and Midwestern frat parties. Legend has it the novelty glass was invented when a Prussian general promised his men he'd quaff beer from his boot if they won a battle. He got squeamish, commissioning a glass boot to fulfill the letter, if not the spirit, of his vow—and creating a most German invention: sterile, nonporous footwear optimized for low-risk beer consumption.

But a bierstiefel does not a shoey make. In the postwar era, the real thing has been kept alive by the world's noisy downstairs neighbors, Australia. Long a staple of Aussie hardcore punk shows and party-centric running, fishing, and surfing clubs, the fetid festivity stayed mostly underground.

Until 2016, when Ricciardo ascended the podium at the German Grand Prix and filled his shoe with bubbly. Soon, shoeys were practically demanded of any touring musician playing a show Down Under. Even the *New York Times* wrote a bemused explanation of the act in 2019.

For us, the shoey will always be associated with Ricciardo, a man who embodies everything we love about Australians: a hyper-competitive athlete with a good-natured rowdy streak and a thirst for victory—and foot champagne.

BY **BOB SOROKANICH**

ILLUSTRATION BY **CHRISTIAN NORTHEAST**

E,

A VALLEY FORGED

PLAY WITH MOLTEN METAL TO CAST YOUR OWN V-12 ENGINE BLOCK?

BY **BRIAN SILVESTRO** PHOTOGRAPHS BY **JESSE MARLOW**

BECAUSE YOU CAN.

THERE'S A REASON Chevy's LS series small-block V-8s dominate the custom-car world. They're compact, lightweight, relatively cheap, and backed by seemingly infinite aftermarket support, making them an easy choice to replace a stock engine. So for decades, the LS served as a mainstay for backyard DIYers and professional builders alike. But easy isn't always right.

Race Cast Engineering's co-founder, Matt Corish, felt the ubiquity of LS crate engines was stagnating the tuning industry. The revelation came during a 2015 trip to SEMA, the Las Vegas expo dedicated to custom cars and aftermarket equipment. "The really high-horsepower builds would still be [powered by] variations of something you could get from a parts counter, so it would be a parts-counter engine with some bolt-ons: valve covers, really cool intake, a nice drive system on the front, et cetera," he says. That bland uniformity inspired Corish to create something to stand out in the sea of V-8s while promoting his Melbourne, Australia-based rapid prototyping business. The V-12 LS was conceived.

As the name suggests, the V-12 LS is a 12-cylinder engine that shares its basic design with Chevy's iconic small-block. The V-12 block is cast in either iron or aluminum according to buyer preference, at a foundry using 3D-printed molds, rather than grafting four more cylinders to an existing LS block. Because the V-12 uses the V-8's bore and stroke dimensions, the pistons, rods, and valvetrain can be mixed and matched from the LS's bevy of aftermarket parts, driving down build cost. To complete the package, the V-12's heads, head gaskets, crankshaft, and camshafts are custom-made by Race Cast.

A complete ready-to-install 580-cubic-inch V-12 LS starts at $41,588 and puts out 700 hp. An extra $3800 gets you an upgrade to 1000 hp. Race Cast has only sold 10 examples of the engine in the five years since it entered production, representing just a tiny fraction of the company's business each year. So why go through this much trouble casting a custom block from red-hot molten metal when you can practically buy an entire new Corvette for the same dough? The answer lies in intangibles. "Everyone in this hot-rod parts business is doing it because of the passion, and I think everyone could be doing something else, and doing better," Corish says. "We get to work with some of the best people in the world, some of the best engine builders in the world, some of the best car builders in the world. As car people, that's a dream job."

A

B

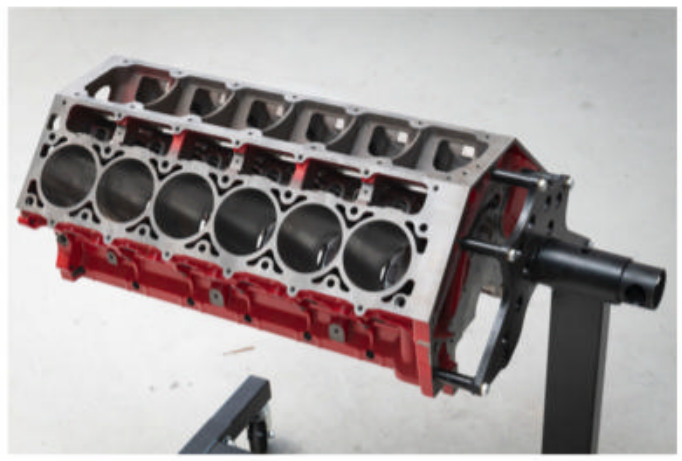
A. The engine block casting process begins exactly as you'd expect: flame and molten metal.
B. Metal pouring into a 3-D printed mold.
C. Race Cast Engineering builds these V-12 heads in-house.
D. Off-the-shelf LS valve gear fills this custom-built head.
E. The bare V-12 LS engine block looks familiar but oh so strange.
F. Complete V-12 LS engines ring in at more than $40,000.

F

C

D

E



A FINE LINE

VON DUTCH'S PINSTRIPE BRUSHES ILLUSTRATE THE BRILLIANCE—AND MADNESS—OF A COMPLICATED MAN.

TO LAY A GOOD STRIPE of 1-shot enamel paint takes a quiet mind and a steady hand. So how the hell did Kenny Howard—the wild, rowdy, drunken, obscene, hateful man known as Von Dutch—become synonymous with the meticulous art of pinstriping?

Maybe it's in his brushes. They don't look like much: little twigs that smell like machining oil and lettering paint. They weigh almost nothing, ironic for objects that carry so much history. You'd expect them to have more heft, bearing the weight of every chopped-down roof and leaded-in seam over which they drew a line. If influence and controversy soaked into squirrel hair, Von Dutch's brushes would weigh a ton.

There was a time in the mid-Fifties when hot-rodders would cross the country and risk Von Dutch's legendary temper for a single squiggle on the nose of their '32 Fords. Dutch might lay down a perfectly symmetrical spear on each side of your car, just like you asked for. Or he might paint a giant vagina on the roof, then tell you to fuck off when you objected. He might just be wasted on cheap wine and refuse to paint anything at all. He didn't even like hot rods, describing himself as a gunsmith first and an artist second. He preferred motorcycles and sports cars, happier lettering the Reventlow Scarab roadsters or shocking the tweedy crowd with a flamed-up Mercedes Gullwing than working on T-buckets or dragsters. Despite his reluctance, the dudes with deuces and shoebox Fords just wouldn't leave him alone; a hot rod wasn't hot until it was Dutched.

Stories about him go beyond apocryphal to impossible. Did he really need to flee Los Angeles after trying to shoot down a police helicopter? Did he really blow the top off a small mountain with a homemade cannon? Was he a Nazi sympathizer? Did he invent modern pinstriping?

Yes, at least to the last one. Maybe to the last two. Maybe to all of them. By most accounts, he was an asshole. But man, he could stripe. Von Dutch grew up in Los Angeles at the same time hot-rods and custom motorcycles began appearing in the dreams of American teenagers and the nightmares of their parents. He wasn't the first to lay down the decorative flourishes we associate with the modified cars of the Fifties, but he took them from garnish to main course. Dutch's work is complex and hypnotic, full panels of interlocking lines that should distract from the shapes they cover, but instead highlight them.

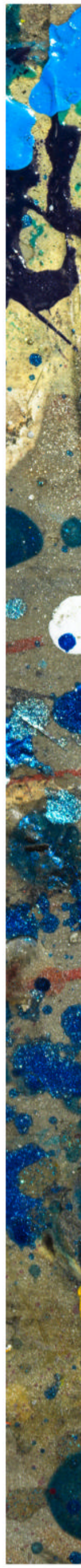
People who saw Dutch paint say he did it like a man possessed, never marking or measuring, just picking up a brush and letting the lines slide out, flowing like streams, opening like wildflowers. Sometimes he drew creatures in the lines, "weirdos," sharp-toothed rabbits and stringy Tiki gods, disembodied eyeballs. His was a messy mind; sometimes he made messy art. One customer, displeased by mismatched lines on the right and left sides of his car, confronted the artist. Dutch is said to have responded, "If you can see both sides of the car at once your eyes are too far apart."

The striping craze only lasted a few years in the mid-to-late Fifties, but Dutch's work inspired customizers well beyond his lifetime. Every lowrider, Eighties airbrush, custom Harley, and scrolled-and-scalloped phone case can trace an arrow-straight pinstripe back to Von Dutch. Ed Roth, George Barris, Dean Jeffries, Larry Watson, Bill Carter, Walt Prey, and anyone who's ever run a covetous eye along the forked tongue of a flame job has Dutch to thank. He was as twisted and complicated as his linework. But if you've only thought of Von Dutch as simply a signature on a trucker hat, spend a moment with a brush that signed the name.

A

BY **ELANA SCHERR**

PHOTOGRAPH BY **JUSTIN FANTL**



LEFT: COURTESY OF DAVE SHUTEN

B

A. A disembodied eyeball is the best known of Von Dutch's arsenal of "weirdos."
B. The artist's brushes. A size 00 squirrel-hair "Dagger" from Mack (right), the Jonesville, Michigan firm that invented pinstriping brushes. They're still hand-assembled in the U.S. today. At left, a Grumbacher, with wide flanks to collect and funnel paint to the brush's thin tip.


CALIFORNIA
RCC 432

BIRTH OF COOL

EXPLORING THE HIROHATA MERCURY, ONE OF HISTORY'S MOST FAMOUS CUSTOM CARS.

A

B

A. The Hirohata Merc would be a legend for that chopped top alone. An immense amount of sheet-metal surgery turned the factory's gawky lumps into the long, low, slinky silhouette seen here.

B. The Barris brothers removed all the heavy-handed factory chrome, leaving the "ice green" bodywork largely unadorned.

C. Bob Hirohata made these jewel-like plastic dash knobs by hand, a technique he later taught the world in the November 1953 issue of *Rod & Custom*.

D. The Barris Kustoms badge makes the Merc feel less like a hot rod, more like bespoke coachwork.

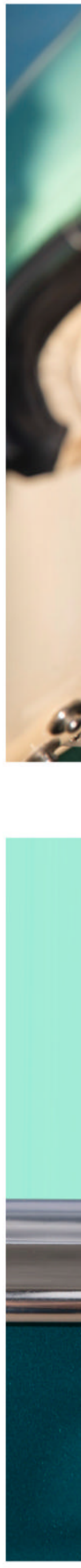
E. Every detail shows deep consideration, down to the discreet tailpipes peering through the rear bumper.

MASATO "BOB" HIROHATA was a kid in California in the Forties, one of more than 120,000 Japanese-Americans imprisoned in U.S. camps during World War II. He died in 1981. But his name lives on with one of the most influential custom cars in American hot-rod history: the Hirohata Mercury.

In 1952, after a stint in the U.S. Navy, Hirohata took a '51 Mercury Club Coupe and a blank check to Barris Kustoms. The Barris brothers massaged and smoothed every panel, chopping the top 4 inches in front, 7 in the back, completely altering the car's silhouette. They reshaped the body sides and elongated the fenders. The headlights were Ford, the taillights were Lincoln, the chrome trim was Buick. Chevrolet teeth sparkled in the fender vents.

The Hirohata Merc shocked the world at Motorama in 1952. It made Mercury's sensible family car into the custom canvas of choice. (Hence, James Dean's '49 in *Rebel Without a Cause*.) Shops have spent decades trying to recreate the Hirohata's graceful roofline alone. Most never got close.

The limelight was short. The Merc was repainted, sold, crashed, neglected. A teenager bought it in 1959 for $500. That kid, Jim McNiel, kept the car his whole life. His painstaking restoration took seven years, recreating what the Barris brothers completed in less than 40 days.



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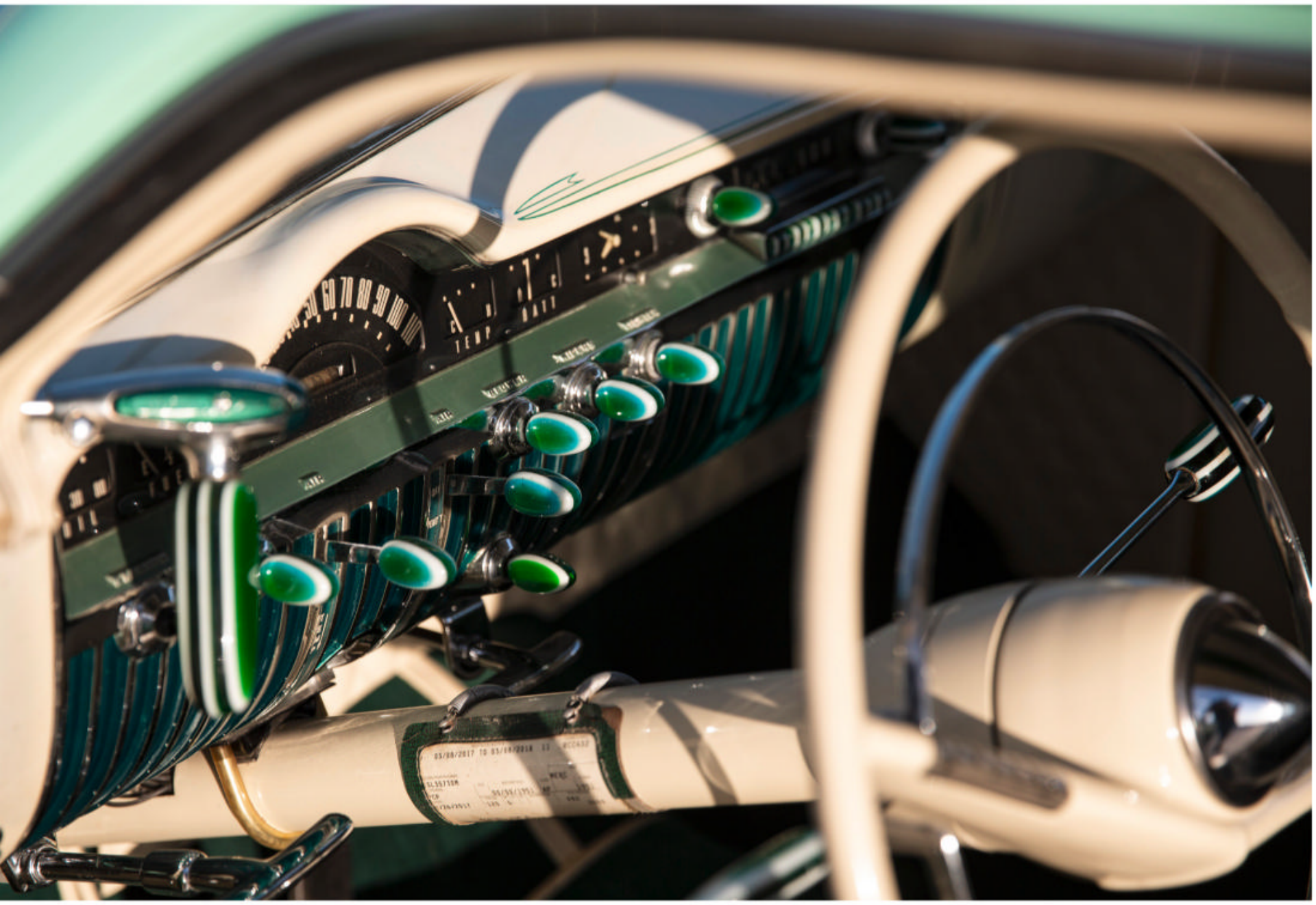
PHOTOGRAPHS BY **HUSEYIN ERTURK**

BY **BOB SOROKANICH**

C



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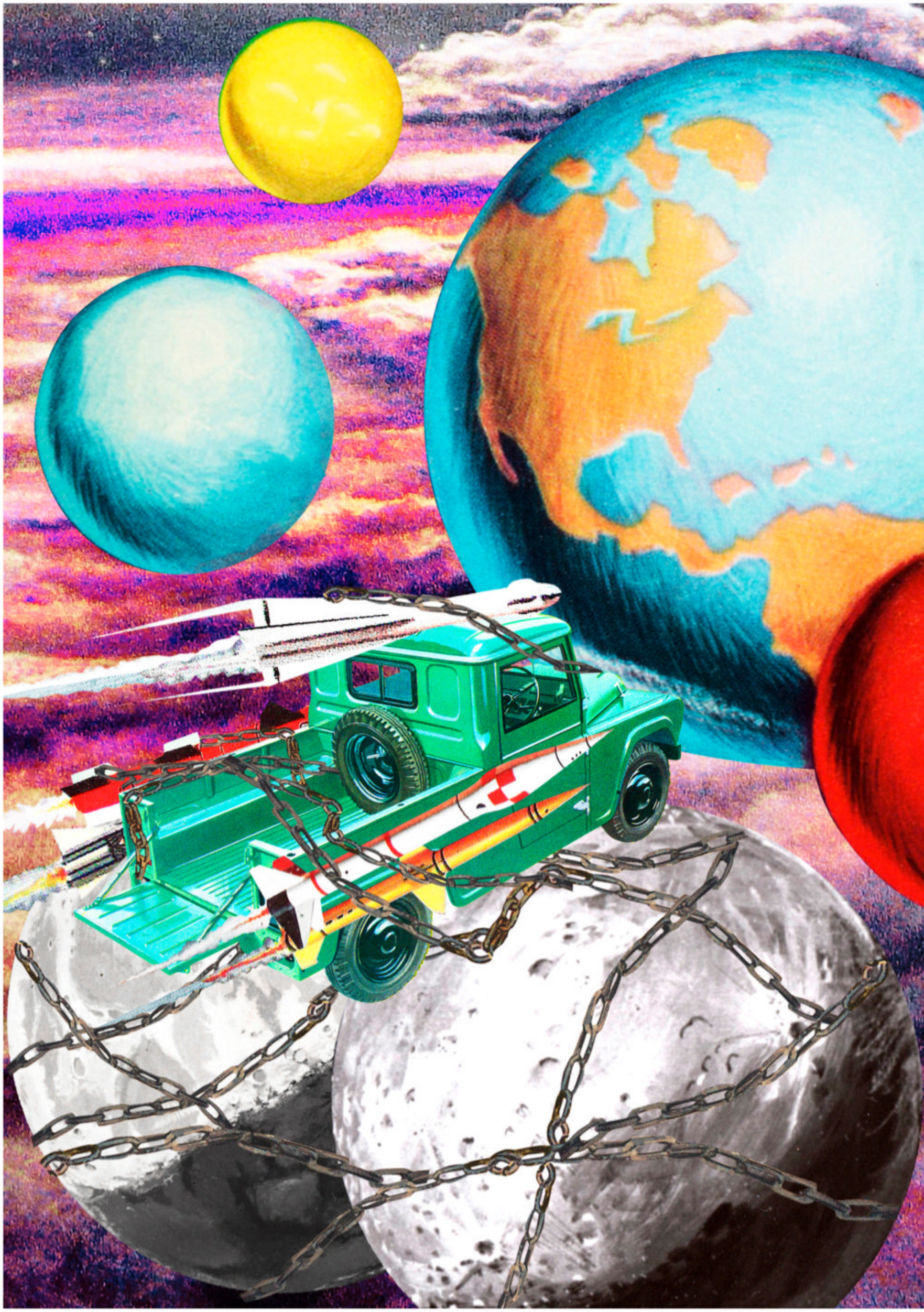

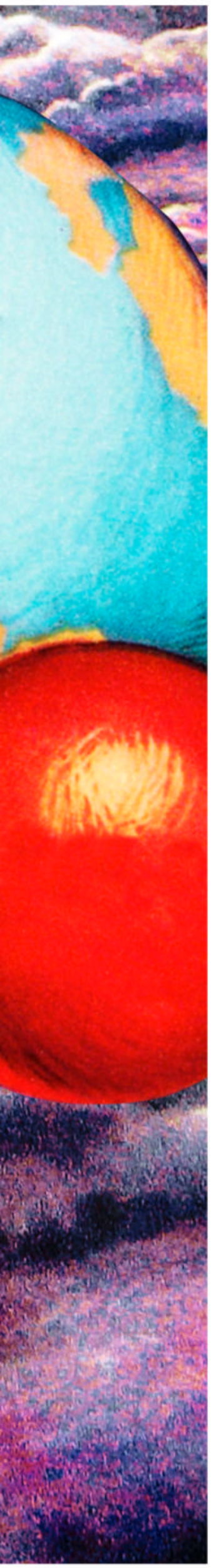

YES, WE CAN SEE YOU'RE NUTS

WHAT TO MAKE OF BUMPER-MOUNTED BUFFOONERY?

CAR CUSTOMIZATION TAKES many forms, from the sublime to the ridiculous. But of the myriad ways to customize a vehicle, truck nuts—those fake gonads you see dangling from the hitches of pickup trucks—are the laziest. Lazier than mounting a tennis ball on an antenna, lazier than having the dealer pinstripe your Cadillac. The only difference between these swaying plastic scrota and, say, a bumper sticker, is that bumper stickers are occasionally funny.

What, you may ask, is their purpose? The best response I got was, "To enhance my truck's truckiness," which issued from the mouth of a drunken neighbor. But what is "truckiness," after all? Isn't it a pose, a farce? If you're a cowherd or rancher, a truck is a necessity, and it functions honestly. For all others, it's cosplay, a Stetson Highpoint for the garden center. For anyone with real work to do, a full-size van is a far more useful thing. The carpet installer, the plumber, and the electrician all benefit from the van's low load floor and long, enclosed cargo hold. All the "things you really need a truck for" mostly concern ego and maybe some light recreation. Add a fake sack to the rear of all that, and it's a perineal bridge too far. It tain't right.

The jokes write themselves. You'd presume the creators of these things would've had a sense of humor about it, but that is evidently not the case. The two big swingers in the truck-nuts game are Your Nutz and Bulls Balls. The founders of these concerns fought bitterly over who really invented the novelty nutsack until 2014, when the guy behind Bulls Balls died. But not before getting immolated with such flaming online arrows as this one, from badreviews.site: "They steal your personal and financial information and use it to their gain... BE CAREFUL.... If you want some of these novelties check out allthenutz.com or your-nuts.com, the first company to sell these on the internet.... Stay away from the immitator [sic]...."

Two schoolboys slap-fight over balls. So manly.

Consider also: This product comes in a variety of sizes and styles, but even the largest nuts are comically out of proportion to the truck itself. You, at the wheel of your coal-rolling F-250, are hanging jewels roughly the scale of a squirrel's, relatively speaking. This may be the only honest thing about the entire enterprise.

And though testicles are symbols of virility and power, they are also the most sensitive part of the male anatomy. Truck nuts, so low to the ground, become vulnerable to a fusillade of kicked-up pebbles and stones. Is it really a display of masculinity to put the coin purse, even a plastic simulacrum of it, in a position that could, symbolically speaking, fell the giant? Are drivers taunting figurative discomfort to show they can withstand it? If they really want to telegraph how tough they are, they ought to hang out a plastic vagina.

BY **PROF. EDWARD ALTERMAN**

ILLUSTRATION BY **JOHN VINCENT ARANDA**

“YOU BETTER WIN”

RAIDING FORD’S ARCHIVES FOR AN INSIDE LOOK AT ITS LE MANS TRIUMPH.

24 LES VINGT-QUATRE HEURES DU MANS
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PRESS INFORMATION

CONFIDENTIAL

G T AND SP PROJEC

E J H I G F A R

K.L.M U O T C N W S P

Ford Motor Company
Executive Communication

July 26, 1963

To: Chairman of the Board
President
Executive Vice President
Vice Presidents
Staff Directors
Division General M

Persons designated

Subject: Organization and Pe

This is to announce
Vehicles Activity with responsi
implementation of special produc

Mr. F. E. Zimmerman i
Manager and will report directly
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The organization of th
shown on the attached chart. Addi
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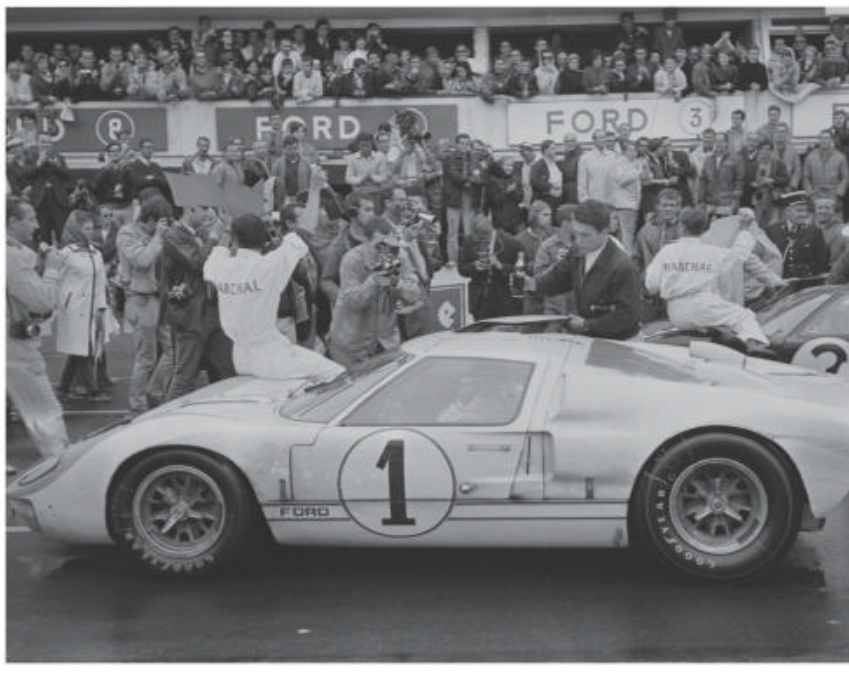

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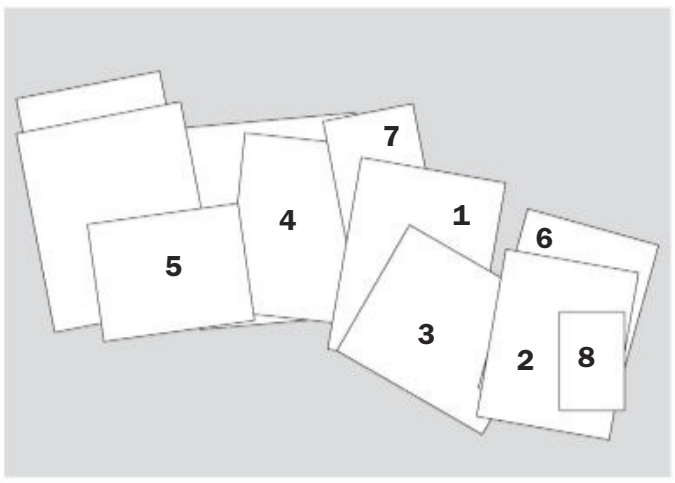


OF ALL THE HISTORIC events in motor racing, none trumps the moment three Ford GT40s took the checkered flag together at Le Mans on June 19, 1966. Arguably, of course. The story has been told often—in books, articles, and in 2019's Disney feature *Ford v Ferrari*. It was the first time an American manufacturer won the most important sports-car race in the world. And it made timeless heroes of Ken Miles, Bruce McLaren, and Carroll Shelby. So what new could we bring to the table now?

We raided Ford's archives, where we found rare and, in many cases, highly confidential (at the time) documents that tell the story of Ford's victory at Le Mans. Some of these items have never been published before. The staggering amount of money and coordination it took for Ford to build its first-ever custom sports racing car, the incredible power that Henry Ford II wielded at the height of the *Mad Men* Sixties—all of it is captured in these eight pieces of paper. Here's a look at Ford's 1966 Le Mans victory as you've never seen it before.

1. In June 1963, a confidential booklet circulated through high-level offices at Ford. It was entitled "GT and SPORTS CAR PROJECT: Program and Package Book Issue 1." The point of it all was spelled out clearly in the introduction: "To generate in the public's mind a desire to own a Ford product." The first project of this new program would be "a racing GT car that will have the potential to compete successfully in major road races such as Sebring and LeMans [sic]." On the face of it, this booklet was normal corporate "Hey, here's a new idea" correspondence. In history's eye, it launched an extraordinary chapter in sports history, car history, and American history. Over dozens of pages, the booklet went on to detail the first build plan for what would become the Ford GT40 racing car. It called for a 350-hp, 289-cubic inch V-8 to be mounted mid-rear. There were plans for suspension, fuel

BY **A.J. BAIME**

B

BERNARD CAHIER/GETTY IMAGES; REG LANCASTER/DAILY EXPRESS/HULTON ARCHIVE/GETTY IMAGES

and exhaust systems, wheels, and tires, as well as specifications for length, width, height, weight, and wheelbase. A chart showing horsepower, rolling resistance, and aerodynamic drag suggested a top speed of about 215 mph—which proved accurate once the GT40 was built.

2. Internally at Ford in the early 1960s, a "Blue Paper" was a confidential document that signaled to whomever received it to stop what they were doing and read this now! This one, dated July 26, 1963, signed by Lee Iacocca, Ford Division chief at the time, established a new "Special Vehicles Activity" team that would be in charge of "special product programs" from an executive level. Among those programs would be the campaign to beat Ferrari at Le Mans.

3. The build of the first GT40s required a massive effort of design and coordination. For the first year of competition in 1964, former Aston Martin racing chief John Wyer headed up the Le Mans team. His J.W. Automotive Engineering Limited created a "Ford GT40: Illustrated Parts List." The book-length study showed this diagram on page one. Each letter seen in this cutaway corresponded to more detailed diagrams further on, so every part of the new, custom-built GT40 was documented, down to each nut and bolt.

4. The first tests of Ford's Le Mans car occurred in April 1964. Each test was documented in detailed memos. This one, dated April 8, followed a test at the Motor Industry Research Association proving ground in England, with Briton Richard Attwood at the wheel. GT40 nerds will recognize some exciting names listed as personnel on hand, including Eric Broadley (founder of Lola) and Ford engineer Roy Lunn (played by actor JJ Feild in *Ford v Ferrari*).

5. At the beginning of the Sixties, Ford had no racing program, no Mustang… some might say, no guts. Five years later, the company was battling it out in sports cars, NASCAR, and IndyCar. Fueled by that excitement, the all-new Mustang became the most successful new-car launch in history. Meanwhile, Carroll Shelby had taken over Ford's Le Mans team. Company operatives put together booklets detailing the efforts to keep top executives in the loop on all the racing fronts. This photo of engineers putting together a GT40 comes from one of those booklets—Lee Iacocca's personal copy, in fact.

6. It was common knowledge that Henry Ford II was willing to spend anything to beat Enzo Ferrari. The actual amounts, however, were guarded like palace secrets. This document—"Revised Budget Proposal"—breaks down the major costs of the program for the 24 Hours of Daytona, the 12 Hours of Sebring, and Le Mans in 1966. Ten GT40 chassis: estimated $450,000. Sixty 427 engines: estimated $185,000. Driver contracts: estimated $130,000. As Carroll Shelby personally told me, years ago: "You wouldn't believe what happens when a man like [Henry Ford II] turns on the faucet."

7. Le Mans in 1966 was historic for many reasons, including its impact on media. The Ford vs. Ferrari rivalry ushered in the era of global televised racing. And the race was covered internationally across acres of newspaper copy, more than any other motor race to date by far. This shot shows the cover of a press kit given out to newspaper, magazine, and TV reporters.

8. Before Le Mans in 1966, with the climactic battle between Ford and Ferrari at hand, Henry Ford II gave handwritten notes to Carroll Shelby and Leo Beebe—his most faithful corporate employee, who was personally overseeing the effort for him. The scribbled note simply reads: "You better win, HF II." Henry himself was the honorary race steward that year, and he dropped the flag to start the 24-hour war. What happened next? We don't want to give away the ending.

A. To beat Ferrari at Le Mans, Ford had to custom build a vehicle unlike anything ever badged with the blue oval. Pictured: Fans and journalists swarming Ken Miles' No. 1 GT40 pre-race in 1966.

B. Bruce McLaren (holding flowers), Henry Ford II, and Chris Amon on the podium. "From there on," McLaren later recalled, "it was checkered flags, champagne, and chauffeur-driven cars."

PHOTOGRAPHS BY **WILLIAM MEBANE**

HANDS DOWN

A GEARHEAD WATCH REDEFINES THE ART OF TELLING TIME.

HOUR AND MINUTE hands have been anchored to the center of clock faces since Vermeer laid oil on canvas (this was the 17th century, before God blessed us with V-8s and the side-exit exhaust). After that framework was set, centrally placed hands became de-facto time tellers, from Big Ben to Grandpa's old pocket watch. The format became ubiquitous, then rigid, then staid. Ergo, the way we visualize the time rarely advances. If it ain't broke, don't mess.

Then Ressence struck lightning through all that. The Belgian company, founded by an industrial designer in 2010, proposed a fresh way to tell time. You'll recognize some landmarks, like hands pointing to hours and minutes. The rest of the watch looks Kubrickian, beamed in from some clean near-future.

But don't let the Type 5X's slick veneer fool you. That's no pixel-rich LED screen, but rather a rotating palette of subdials set atop a traditional Swiss automatic movement, making this very much an analog device. Rather than a pair of traditional central hands, a complex gear train rotates those subdials around the center point of the watch, while allowing the dials to remain oriented "north-south" across the watch's face (imagine each subdial as a spinning teacup on the Disney ride, but the teacups always face a cardinal direction as they orbit the ride's center).

That sounds complex, but the result is elegant, legible, intuitive—a singular take on telling time. So what makes this watch *R&T*-worthy? It's aimed at drivers, built in collaboration with Automobili Amos, purveyors of custom Lancia Delta Integrales. The Type 5X has a rotating outer bezel that doubles as a turbo timer (which tells you when to shut down your engine after cooldown) for the Integrale's blown four-cylinder, and pops of color borrowed from the Lancia's retro dash. *Ressence Type 5X - $36,500; ressencewatches.com*

BY **KYLE KINARD**

A. The Ressence Type 5X where it belongs: on the wrist of a racing driver. Ressence crafted it in collaboration with Italian restomodders Automobili Amos.
B. The Ressence trailblazes a futuristic way of telling time, via a rotating palette of subdials.
C. Automobili Amos's $360,000 Delta Futurista. The Type 5X takes cues from this beast, including a built-in turbo timer.

B

A

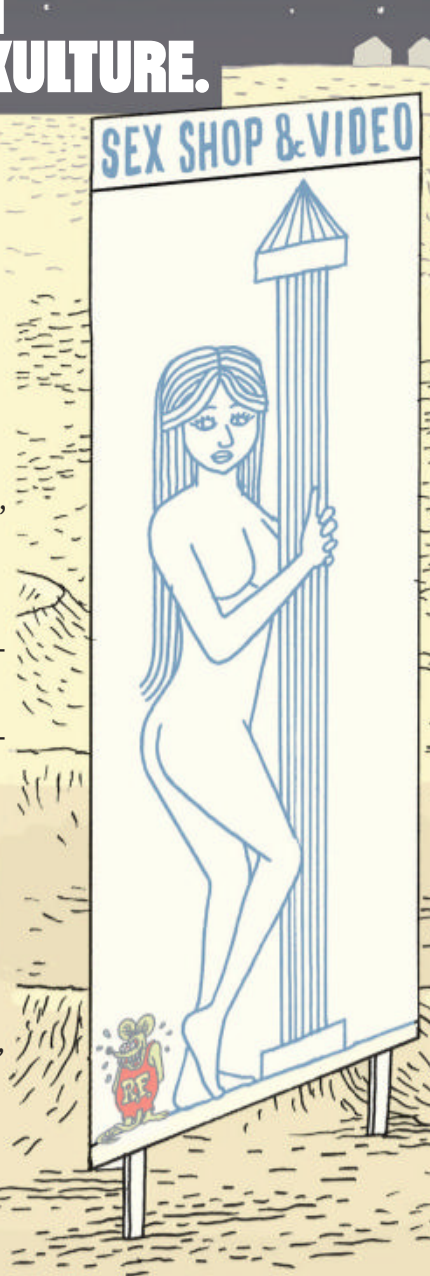
C

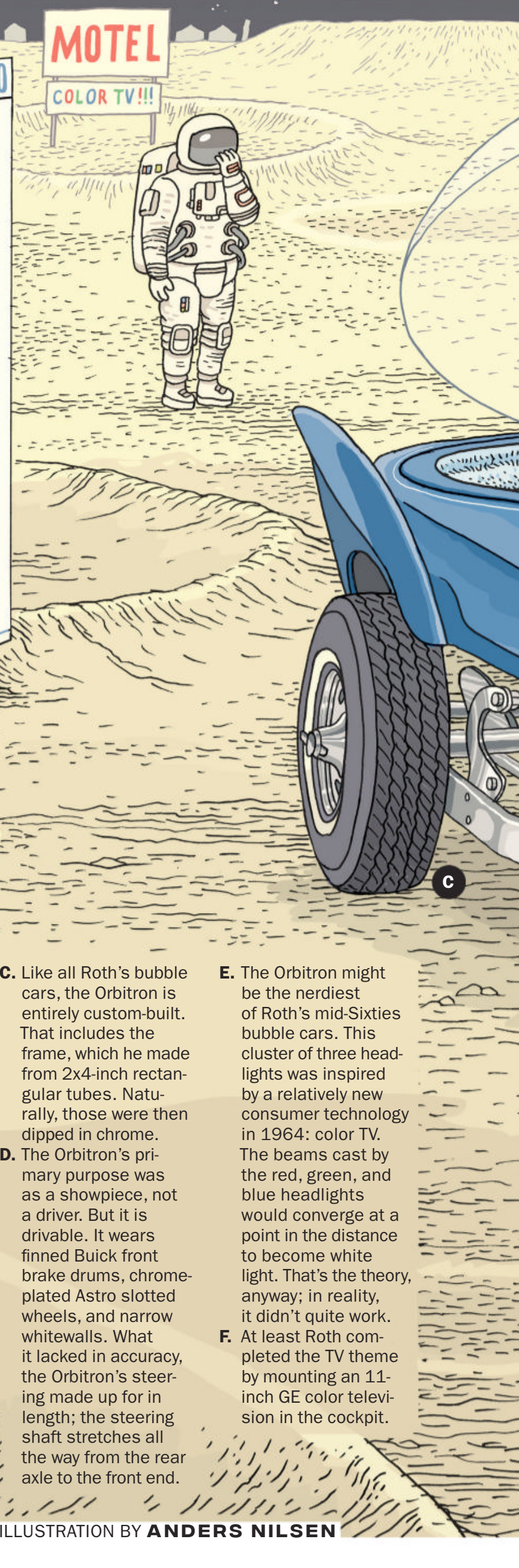
IMAGES COURTESY OF RESSENCE

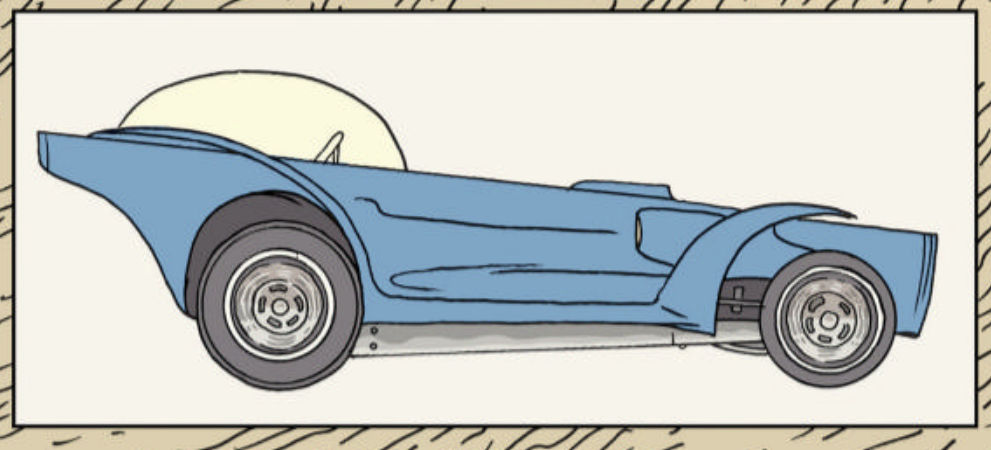
BUBBLE DREAMS

ED ROTH'S ORBITRON IS THE KOOKIEST CREATION OF CALIFORNIA'S KUSTOM KULTURE.

THE ORBITRON belongs to a series of mid-Sixties bubble-topped creations from the fevered mind of Ed "Big Daddy" Roth, marking his transition from personalized hot rods to full-on sculptures of fiberglass and chrome. In "The Kandy-Kolored Tangerine-Flake Streamline Baby," a famous 1963 *Esquire* piece, Tom Wolfe described Roth as "...the Salvador Dali of the movement—a surrealist in his designs, a showman by temperament, a prankster." The '64 Orbitron had all the hallmarks of Roth's golden era: outlandish hand-laid fiberglass, absurd proportions, and of course, that rear-hinged plexiglass dome. But Roth tired of his creation, selling it in 1967 for $750 to fellow customizer Darryl Starbird. The car went on to a collector in Texas, then to a carnival owner in Mexico. It disappeared for years before being discovered in 2006, parked in front of a sex shop in Juarez, Mexico. Its nosepiece and bubble top were gone, and it was painted primer black. The lurid detour has a happy ending: Beau Boeckmann of Galpin Auto Sports bought the heap, and a team led by Dave Shuten (see his handiwork on the cover) restored it to its former glory.







A. Naturally, the entire cockpit was covered in powder-blue faux fur.

B. Far behind its cock-eyed aardvark nosepiece, way back in the middle of the Orbitron's frame, sits a chrome-slathered small-block Chevy V-8 with three Stromberg carbs. It wears Corvette valve covers, but the engine was actually borrowed from Roth's daily-driven '55 Chevy coupe. Roth later considered it a mistake to have covered the engine with the fiberglass bodywork.

C. Like all Roth's bubble cars, the Orbitron is entirely custom-built. That includes the frame, which he made from 2x4-inch rectangular tubes. Naturally, those were then dipped in chrome.

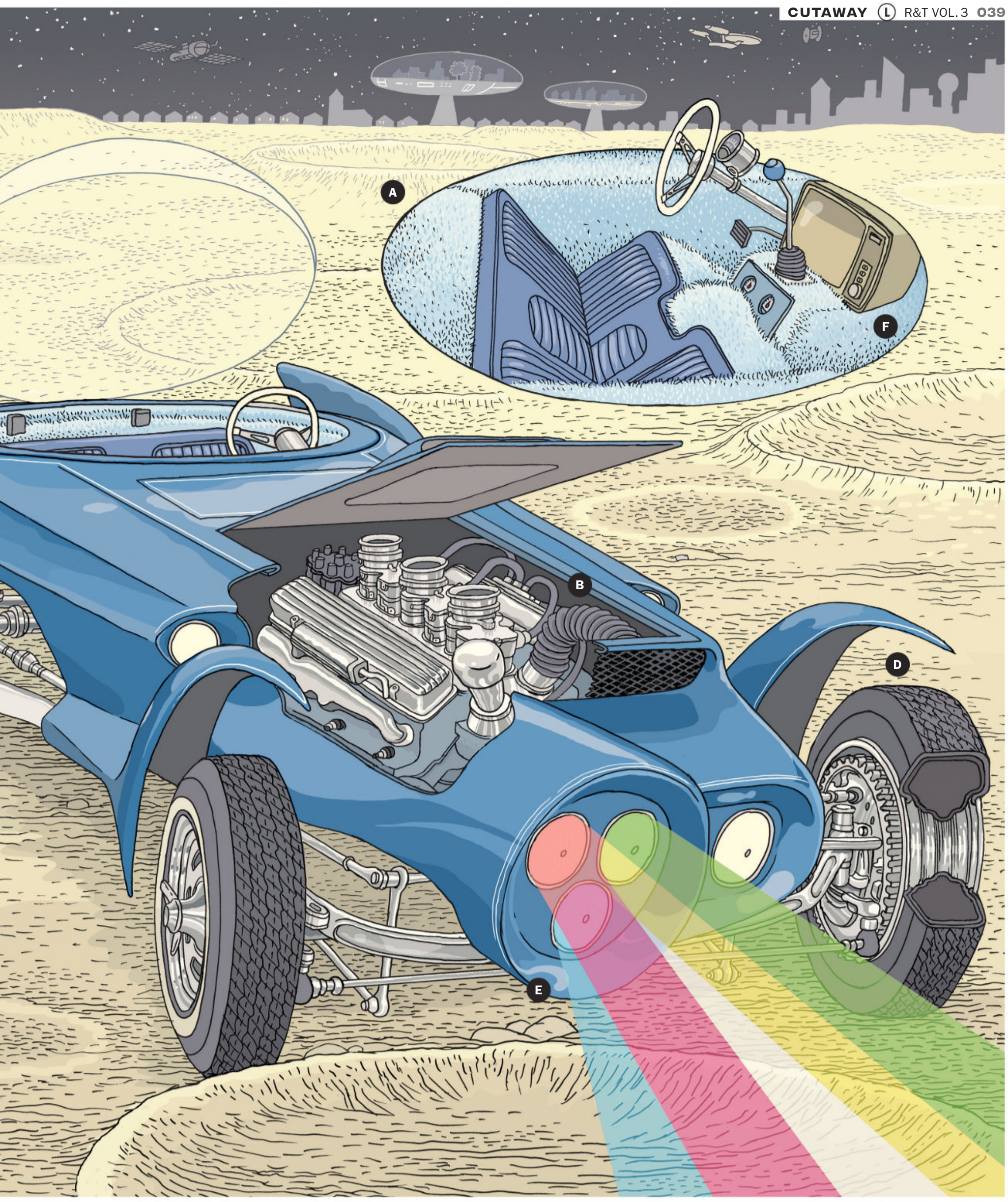
D. The Orbitron's primary purpose was as a showpiece, not a driver. But it is drivable. It wears finned Buick front brake drums, chrome-plated Astro slotted wheels, and narrow whitewalls. What it lacked in accuracy, the Orbitron's steering made up for in length; the steering shaft stretches all the way from the rear axle to the front end.

E. The Orbitron might be the nerdiest of Roth's mid-Sixties bubble cars. This cluster of three headlights was inspired by a relatively new consumer technology in 1964: color TV. The beams cast by the red, green, and blue headlights would converge at a point in the distance to become white light. That's the theory, anyway; in reality, it didn't quite work.

F. At least Roth completed the TV theme by mounting an 11-inch GE color television in the cockpit.

BY **DANIEL PUND**

ILLUSTRATION BY **ANDERS NILSEN**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Trucks haven't changed much in the past one hundred and twenty years. Sure, they come wrapped in an assortment of rugged-looking sheet metal and stuffed full of features to keep your mind off the harsh ride, but if you were to strip all of that away, you would be left with the same basic structure. So, when Honda decided to build a truck for the 21st century, we used a lightweight unibody frame instead of the harsh-riding body-on-frame design needed only for heavy-duty towing. We also scrapped the live rear axle—a design that's been around since horses actually powered your ride. This makes the Ridgeline the only truck in the segment that powers over rough and uneven terrain with an independent rear suspension, which reduces how much the occupants inside get bounced around by allowing both sides of the suspension to operate on their own. Both of these features give the Ridgeline a composed driving experience no other truck can come close to. After all, who said rugged had to be rough?

We then took another giant leap away from truck tradition with the development of our available intelligent Variable Torque Management™ (i-VTM4®) all-wheel-drive system. You read that right: The Ridgeline is the only truck available with all-wheel drive rather than four-wheel drive. We didn't do this for the sake of simply being different. We wanted drivers to trust that each tire was performing exactly how it should be, given the kind of terrain it was driving over at all times. So instead of pulling a lever or pressing a button to engage all four tires, we designed the i-VTM4 with a system of wet clutches that constantly split torque between the wheels, sending up to seventy percent of the engine's power to the rear axle and then sending up to one hundred percent of that power to the left or right wheel, so it's available where it can be used best—instantly and seamlessly. All this makes the Ridgeline the greatest advancement in truck design since it all began, and it shows in every mile of every journey. This is how Honda does rugged.

HONDA

THE WHEEL

BBS Super RS
BBS brought racetrack style to the streets in 1983 when it introduced the woven-spoke RS. Inspired by the company's race wheels (which were inspired by the wheels of the Chaparral Can Am cars), the RS was a massive hit with customizers and OEMs. The new Super RS is available in sizes up to 21 inches.

PHOTOGRAPH BY **KENJI AOKI**

KING OF AMERICA

PHOTOGRAPHS BY **ZACH JAMES TODD**

BRUCE CANEPA DARES TO SCREW WITH PORSCHE'S GREATEST 911 WITHOUT SCREWING UP.

IT'S

THERE BY DIVINE RIGHT, heir to the 917, 934, 935, 956, and dozens of other regal Porsches. The 959 was born to be king. It made the ascension with ease, clearly the most technologically advanced car of 1986. And 1987. And 1988. And every year until the 345th and final one was built from spare parts in 1992. It was twin-turbocharged, all-wheel drive when that was a novelty, and rode on magnesium wheels with hollow spokes. The body was aluminum, Kevlar, and uncompromising audacity. In 1987, we reached 198 mph in one. It's more than 30 years later, and many remain its loyal subjects.

"It's not a Canepa," explains Bruce Canepa about the series of hopped-up machines he's building from real 959s. "It's a 959. My goal was always to have the image the same." So far Canepa has massaged 11 959s into 800-hp 959SCs, for "Sport Canepa." He currently has four in the process of being born at his Scotts Valley, California, shop, and one more on order. The 959SC doesn't look like anything from Singer, or RUF, or any other Porsche 911 customizer. It is unmistakably a 959.

BY **JOHN PEARLEY HUFFMAN**

In 1986, the 959's 444-hp rating was astonishing, the sort of mind-boggling number reserved for pure racing machines. Back then the 5.7-liter V-8 in the most powerful new Corvette only made 230 hp. After a six-year absence from the North American market, Porsche finally brought the mighty 911 Turbo (aka 930) back to our fair highways for '86. Its turbocharged and intercooled 3.3-liter flat-six was rated at 282 hp.

A mystique exploded around the 959. It wasn't legal for sale in the United States, but Bill Gates brought one in anyhow. It reportedly sat in Customs impound for more than a decade while he (and Canepa) lobbied the government to adopt a "show and display" exemption for low-production vehicles of exceptional technological merit. He got his wish. The 959 was so awesome, the government literally rewrote the law.

Today, however, the 959 is an antique. The modern 911 Carrera S, turbocharged but not called a Turbo, is rated at 443 hp. The mightiest current 911, the Turbo S, is engorged with 640 hp. Hell, Porsche sells the Taycan Turbo S, a 750-hp, all-electric four-door sedan that will blitz to 60 mph in 2.4 seconds. The original 959 needed 3.6 seconds to perform that feat—an eternity. The 959, imperial and truly iconic as it is, can't keep up with today's best machinery.

"For me, I want a road car and not a track car," Canepa explains. "Most track cars don't make good road cars. And most road cars that are designed for the track don't make good road cars."

The 959 was designed to meet the requirements of the FIA's World Rally Championship Group B class. The herd of fantastic Group B creations—Lancia Delta S4, Ford RS200, Audi Sport Quattro S1, a half-dozen others, and the 959's natural archrival, the Ferrari 288 GTO—were often raw and nasty machines. In contrast, the 959 was under-stressed and almost easygoing. Porsche built it to race but kept the street-bound version reined in, with potential in reserve.

By the time the 959 and 288 GTO were ready for civilian consumption, Group B was dead. There were no great rally battles between the two. Damn!

"When I'm in the 959, after driving it for four hours, I'm just hungry, not tired," enthuses Canepa. "What we learned early on, and what we confirmed later on when we began adding performance to the car, [is that]when that car was designed the engineering spec was 825 horsepower on the drive system. We're right there. We're not going to try and make 1000 horsepower or 1100. I want a car that turns and stops and rotates and does everything else well. If I'm buying it just to go fast in a straight line, I'll buy a Top Fuel car."

To transmogrify the 959 into a 959SC, Canepa begins by completely disassembling the original. Every nut, every wire, every saline remnant from where Porsche's mechanics dripped sweat onto it, is carefully pulled off. It's a painstaking process. Though the 959 looks like a 911, it's actually built of materials that could be damaged by chemical strippers or anything as crude as media blasting. This isn't an episode of *Overhaulin'*.

While most 959s were built as "Komfort" models, the virtual baseline for the Canepa revisions is the more focused 959 S, or "Sport." And one of the most prominent revisions of the SC package is the excision of the Komfort's complex and heavy hydraulic suspension system in favor of the S's straightforward setup. "What we do now is identical to that but with modern shocks," explains Canepa. "And it brings the weight way, way down." So there are six new titanium springs with slightly higher rates and new, specially developed Penske shock absorbers.

The new suspension lowers the 959 about an inch. Canepa replaces the standard five-spoke 17-inch wheels with new 18-inchers that at first glance don't look much different. Like the original wheels, Canepa's 18s are magnesium and have hollow spokes that open into the air cavity of the tire.

The big advantage of the 18s is that they can accommodate modern tires. In this case, that means the Michelin Pilot Sport 4S, 245/40R-18 front and 275/35R-18 rear. By 21st-century stan-

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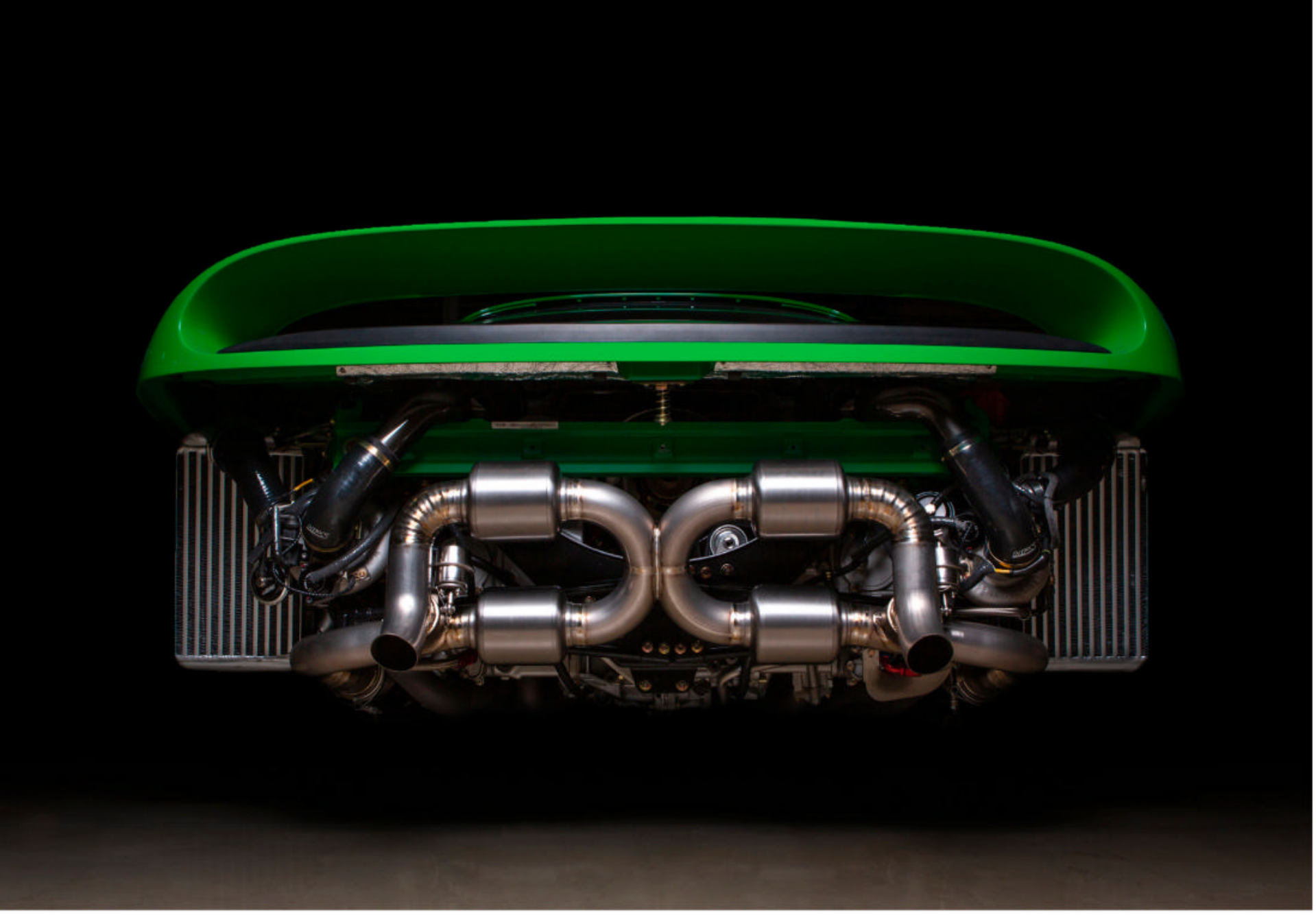


B

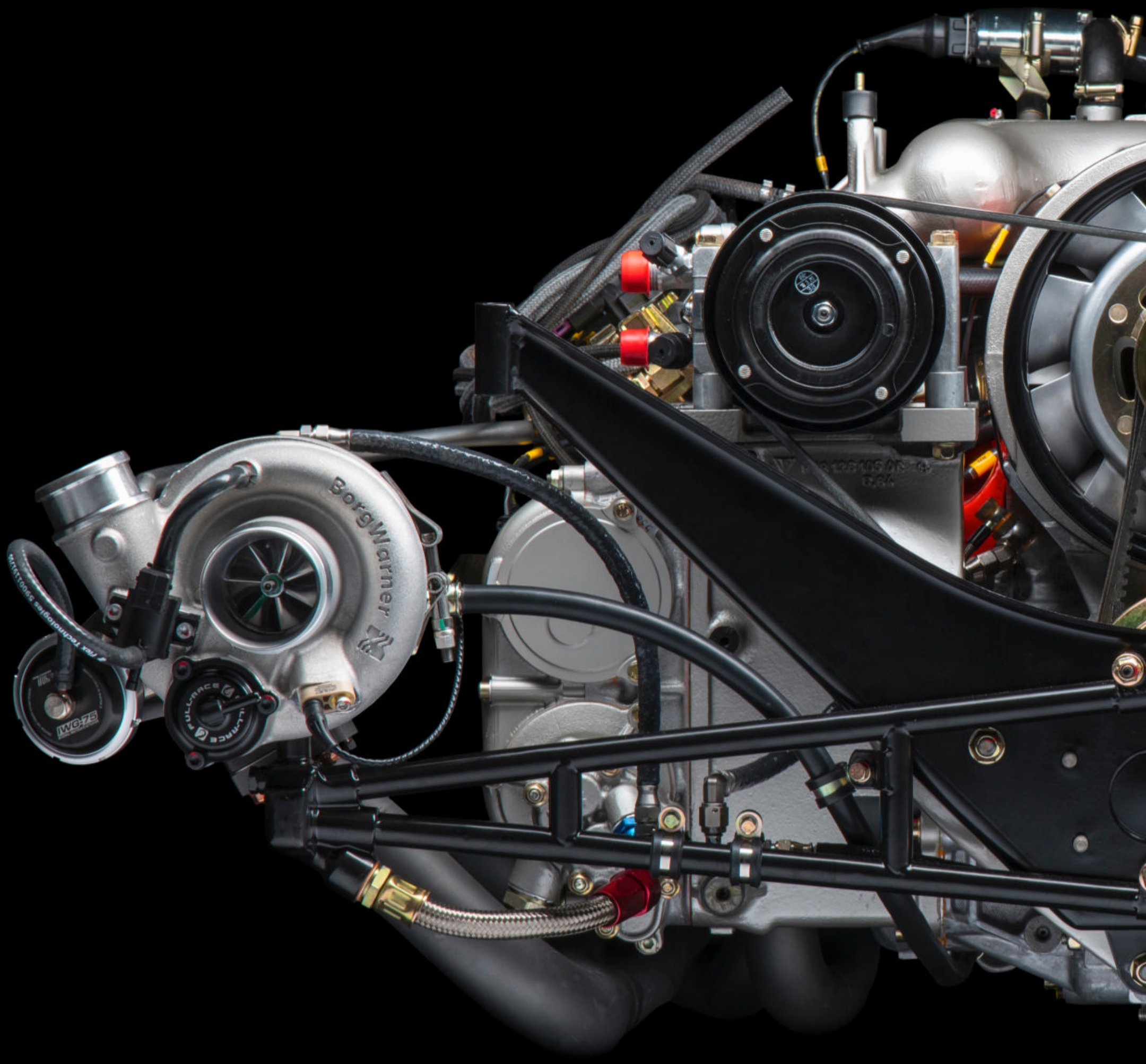
A. Such is the beauty of the powerplant and its subsystems that one could be forgiven for leaving the rear fascia off their 959SC.

B. These wheels are dead ringers for the factory 17-inchers. But they're 18s, custom made for Canepa. The dark finish is one of the SC's few aesthetic changes from the original car.

C. Most 959s were Komfort models, with a sophisticated (and heavy) height-adjustable hydraulic suspension. Canepa tears all that out in favor of a Sport-style static-height system with titanium springs and custom-tuned Penske shocks.

D. (Next page) The breathed-on 2.85-liter twin-turbo flat-six makes 800 hp, nearly double what it made stock. Lighter, stronger internals, a custom Motec engine computer, new cams, and two big BorgWarner turbos exploit the full potential of this built-to-race engine.

C



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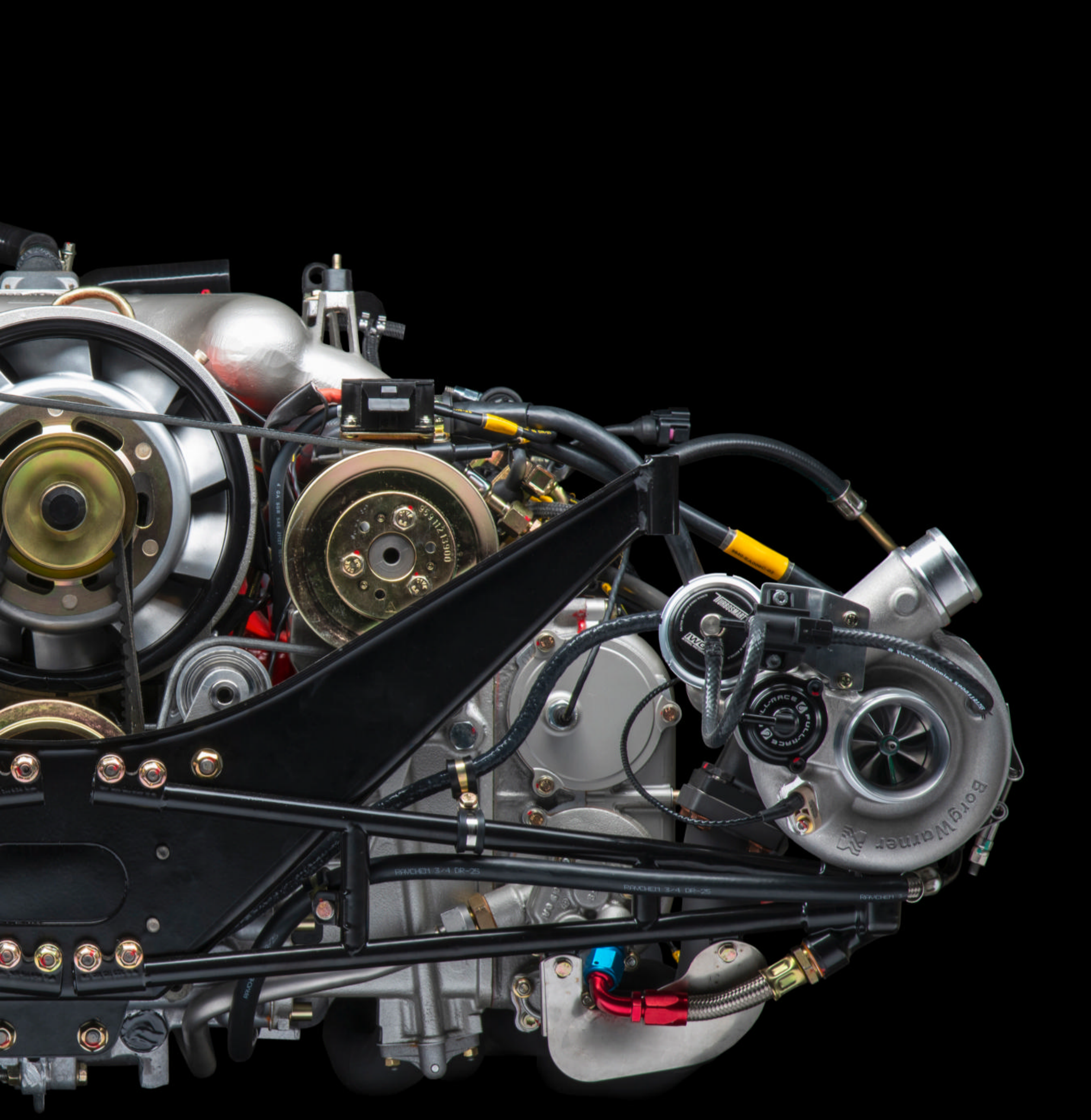
Borg Warner


1000 KM
PHARAONEN RALLYE
PORSCHE
69 6 Hours of Brands Hatch
1 Siffert
Redman
2 Elford
Attwood
3 Mitter
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80
PORSCHE

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A. Bruce Canepa's shop near Santa Cruz, California, is spotless, highly organized, and one of the few places on earth ever to host more than one Porsche 959 at any given time. Canepa has been the go-to 959 man since the car was allowed into the country.

B. Because it was based on a standard 911 of the day, the 959 made do with a pretty basic interior. The full Canepa 959SC treatment includes a top-notch leather interior in the color of the customer's choosing.

C. Canepa says that every 959SC takes 4000 hours to build. It's not about just bolting higher-performance parts to a donor 959. Each car that comes in is taken apart completely and then rebuilt with refinished or new pieces. It is, in that sense, a full restoration, followed by a comprehensive program of performance upgrades.

B

C

A. Unlike many so-called restomods, the Canepa 959SC looks pretty much exactly like the car on which it's based. But there are some subtle tweaks. The SC's ride height is an inch lower, sitting on larger 18-inch wheels and modern tires. Most 959s wore silver, white, or red paint when they left the factory. Canepa offers a choice of 150-plus Porsche colors, including this vibrant Viper green.

dards, that's modest rubber, but unlike the exotic bead-lock tires originally used by Porsche, they'll be easily replaceable.

"The original concept car was on 18s," Canepa says. "That was a race wheel, and they grooved a race tire. The car was supposed to have an 18-inch wheel. By the time they were entering production, there were no 18-inch tires available." Canepa's change to 18s is barely perceptible except to the most discerning connoisseur.

Hanging out back is the great glory of the 959SC. The 959's flat-six only displaced 2.85 liters to fit the Group B rules for turbocharged engines, but with its air-cooled cylinder barrels and water-cooled cylinder heads, it was able to sustain monstrous levels of boost. This was essentially the same engine used in the 956 and 962 endurance racers. But at 444 hp, it was loafing.

With new titanium connecting rods reducing the reciprocating mass, a blueprinted valvetrain to handle higher engine speeds, re-profiled cams that increase low-end torque, new BorgWarner turbos, a new Motec engine-control computer, and loads of subtle fortifications to keep the assembly from grenading, the engine, says Canepa, makes more than 800 hp and 650 lb-ft of torque. It's almost like having a 959 with another 959 stuffed inside.

"How's your relationship with the local law enforcement community?" I ask Canepa as we get into the Viper green 959SC featured here. "Very good," he says as he twists the key and the torrent behind us barks to life. "We get along great."

Inside, the 959SC is a mix of archaic and leading edge. The interior bits are mostly shared with the regular 911 of the era. That means an intimate cockpit, real analog gauges, and a windshield so close, you can rap your knuckles on it without letting go of the steering wheel. The six-speed manual transmission counts as throwback tech now, but it's vastly preferable to some computerized dual-clutch nanny-box, and has been rebuilt by Canepa to withstand the punishment.

The Green Mamba moves out making that distinctive Porsche flat-six sound. It exhales into the turbos through custom equal-length headers and then out a stainless-and-titanium exhaust system so luscious it should be displayed as sculpture. There's enough pure grunt that just pulling out of Canepa's palace of a shop, the torque seems to have me in a bear hug.

Canepa steers the 959SC toward the on-ramp to the 17 freeway and aims its nose at the tight apex of the slightly banked right turn into the flow of traffic. It may as well be Indianapolis Corner at Le Mans as the Porsche bites into the curve, half of which is asphalt and the other concrete. Canepa doesn't need to brake, so he doesn't. With the apex behind the car, it shoots forward with all the reserve power.

The 959, despite its state-of-the-art-for-1986 all-wheel drive, is built using very lightweight body panels. The weight it does carry is low in the car, which puts the center of gravity almost in my lap. It doesn't corner flatly because of some whiz-bang computerization, but because Porsche leveraged the reality of physics in its favor. This isn't just an old "analog" car; it's perfect chassis dynamics in service of automotive entertainment.

What old Porsches offer—and what the new, larger ones have muted—is that sense of immediacy. Of reacting to driver intent almost before it's been communicated through the pedals or steering wheel. The 959 has always been an order better at that than regular 911s. The 959SC is better still, with the addition of enough power to propel it into hyperspace. It doesn't distort reality, it uses it.

For a car this brilliantly quick—the 0–60 time is, guesstimating here, somewhere around 2.8 seconds—the ride is compliant and settled. It's not uncomfortably loud, the beautifully rebuilt and reupholstered seats are comfortable, and it's easy to imagine a trip across eastern Washington state at a near-triple-digit cruise, building up some additional velocity across northern Idaho, and then really letting it rip in Montana. It's still a Porsche, still a 959, but the 959SC feels somehow American. Screw divine rights and inherited merit. After 4000 hours under Canepa's knife, this is better.

And it's only $950,000. Plus a 959.

Building the Perfect Race-Car Driver

ILLUSTRATION BY **RYAN MELGAR**

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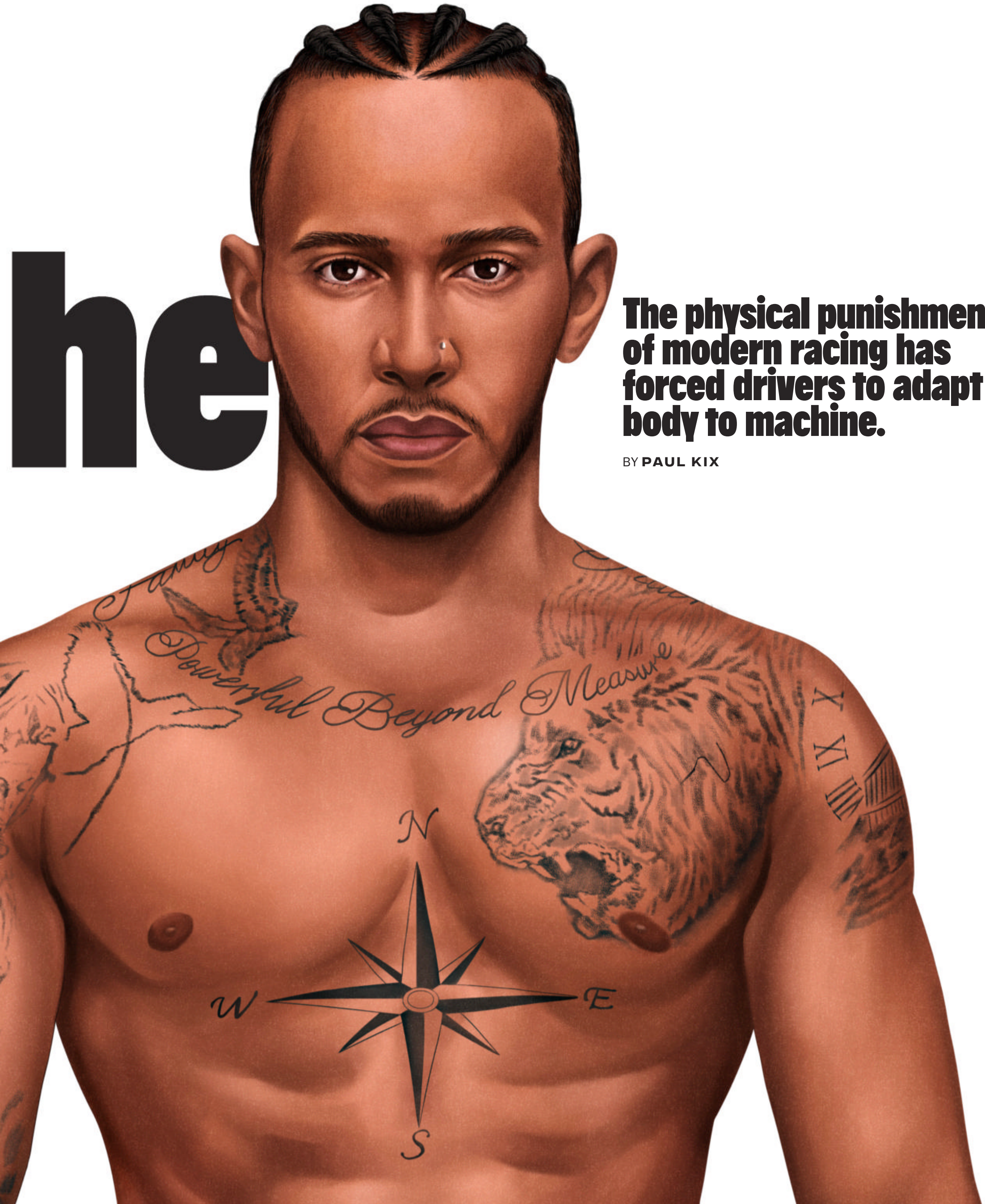
The physical punishment of modern racing has forced drivers to adapt body to machine.

BY **PAUL KIX**



THERE IS A THRILL to F1 racing, sure, but above all there is self-inflicted cruelty. The cars are so fast that some corners on grand prix tracks generate g-forces greater than a space shuttle re-entering earth's atmosphere. To withstand them, drivers must be in a otherworldly shape. This surprises people outside F1, but fitness becomes more central to the sport with each passing year: To put up with the g's, much less win, drivers must have the neck, shoulder, and back strength of a power lifter and the stamina of a marathon runner. Drivers' hearts thump at 160 beats per minute on average—up to 200 when the racing is close. Jenson Button, the 2009 world champion, found the best way to decompress from an F1 race was to take up triathlons. Drivers sweat so much on race day that they lose around five pounds, 10 if it's hot, which it often is, because the F1 series chases summer and Instagram-perfect locales.

It is no surprise, then, that the average F1 driver's age is 26. Who but the young, the strong, the astute, can withstand all this?

The generational aberration named Lewis Hamilton can. That's the strange thing. He's 36 now. And in November he won the Turkish Grand Prix, claiming his seventh world championship and tying Michael Schumacher, one of his heroes and, until Hamilton, the sport's undisputed greatest driver ever. Hamilton is fearless, brilliant, instinctive and, on that rainy race day in Istanbul, he saw angles and opportunities where other drivers only saw mist and fog. But superior depth perception doesn't begin to capture the forces that have led to Hamilton's decade-plus reign over F1. In an era of $500-million racing teams and pit crews with PhDs, where cars are not so much vehicles as computer-guided missiles, where advantages are measured in millimeters and thousandths of seconds, Hamilton succeeds in no small part because his training regimen is as finely tuned as his car.

How did he become the fittest driver on the circuit, which might make him the fittest athlete in the world? Well, the secret to his fitness, as the best among these new, biometrically calibrated drivers, opens a window to the secret of his success.

IN THE SEVENTIES the British F1 champ James Hunt got by on a lurid blend of talent, cigarettes, vodka, and sex. He also died of a heart attack at 45. Michael Schumacher set a new, and frankly militant, training standard in the Nineties, and soon the James Hunts of F1 laced up their sneakers, did their road work, and hit the gym. As the cars have grown more complex and advanced, so have the training regimens. When Hamilton broke out in F1 in 2008, he said in an interview at that time, "I was training ridiculous amounts of hours a week—which I hated."

What snapped him out of that toxic mindset and into the tapered-V champion of today was a five-foot-nothing blonde named Angela Cullen. She was, tellingly, the first person Hamilton

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How Hamilton Works Out

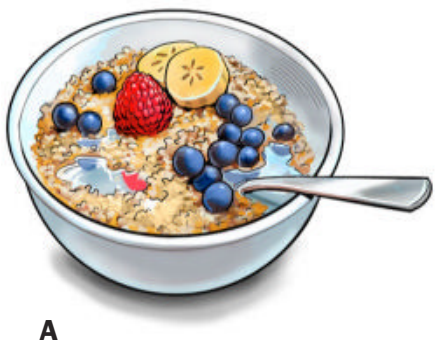
Hamilton spends at least six hours a day doing cardio. To keep himself focused, he varies the routine and includes mountain biking, hiking, skiing, and time in the gym. A two-hour race means a lot of time at a heart rate of 180 bpm or more. Windsprints are a part of every workout.

F1 rules require the driver and seat to weigh at least 176 pounds. The lighter the driver, the better. As Lewis told *Men's Health*, "More muscle means more kilos. It's also disadvantageous to put too much muscle on your shoulders and arms, because you need to have a low center of gravity in the car."

As he gets older, Hamilton focuses on suppleness: "These days I do lots of Pilates, focusing on the core—the muscles beneath the muscles." —MIKE GUY

A. Angela Cullen, the 46-year-old trainer, advisor, therapist and confidant to the winningest driver in F1 history.
B. Lewis Hamilton spends six hours a day working out some aspect of his body. It's no coincidence that he's also the best driver ever to have raced.


1985



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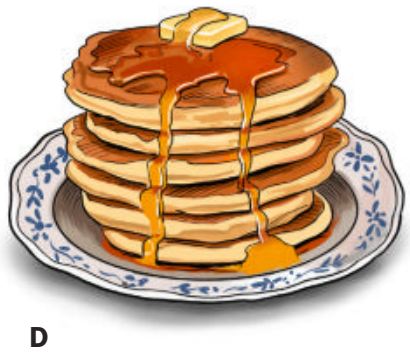

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hugged in Istanbul when he tied Schumacher's record for world championships.

Cullen is his performance coach. It's a vague phrase because it's an amorphous job. She is his driver, his valet, sometimes his bodyguard, but strictly speaking his physiotherapist and trainer. She kneads out the muscle kinks and keeps Hamilton in the gym when he's not on the track. He loves to work out now, which is mostly Cullen's doing. Hamilton lifts weights and, to the envy of middle-aged men everywhere, poses on Instagram with his six-pack abs. Through his arms and legs Hamilton is more ripped at 36 than he was at 27. He does some form of short-burst sprinting in every workout these days, mixing it up with boxing, skiing, and jogging. He also incorporates Pilates, shaping "the muscles beneath the muscles," as he said in one recent interview.

Hamilton said this about Cullen after a 2020 race: "She has been one of the greatest things that's happened to me in my life." He wasn't just talking about the physical training.

To understand why, we need to understand something about Cullen—how she arrived at her worldview, and by extension, how she helped Hamilton arrive at his.

Cullen grew up in New Zealand loving field hockey and math, and graduated from university with a degree that combined those interests: health science and physiotherapy. She wanted to travel the globe, and got as far as London, where she found a job "working near Crystal Palace, the U.K.'s hive of track and field athletes," she said in an interview. Among others, she trained the British Olympic team's 100- and 200-meter sprinters. "My role was like the engineer or mechanic working closely with the athlete, fine-tuning their bodies to optimize their performance in terms of speed, power, mobility, and control," she said. "This was an amazing opportunity to learn about achieving ultimate body performance."

She spent 2006 cycling through South America, from Colombia to the southernmost tip of the

A Racing Driver's Menu

Hamilton credits a carefully planned vegan diet for the consistency of his performance. Here's what he eats every day.

Breakfast:

A. Oatmeal—Packed with carbs and sprinkled with nuts, berries, and fruit, this is an F1 paddock staple.

B. Avocados on toast—For a boost in healthy fats, this fashionable dish is often eaten with eggs for extra protein.

C. Beans on toast—A most British dish, this plain fare is loaded with fiber.

D. Pancakes—A stack at breakfast is a go-to treat for down time in summer and winter.

Lunch:

E. Plant-based burger—Hamilton is part-owner of Neat Burger, a vegan chain based in London. He also once had fresh vegan burgers flown every day from Hong Kong while he was in Japan for the Grand Prix.

F. Quinoa power bowl—The supergrain supplemented with mushrooms and spinach.

Dinner:

G. Pizza—Vegan pizza is Lewis's go-to cheat day treat.

H. Couscous and vegetables—Whole grains, steamed or slow-cooked vegetables, and raw salads.

I. Pasta—Unafraid of carbs, Hamilton uses pasta as the basis for multiple dishes, from orzo to ravioli.

Race Day

According to Alex Wanee of PitFit Training, the ideal racer's meal should be eaten 90 to 120 minutes before the race. It should consist of 80 to 100g of carbohydrates, from rice or pasta, with a small amount of proteins and greens. Non-vegans should eat no more than a palm-sized serving of lean meat, and fat content should be nearly zero, which means no fatty sauces. Depending on heat at the track, a driver should also drink up to 24 ounces of water.

—BRENDAN MCALEER

ILLUSTRATIONS BY **STEVE SANFORD**

continent, in Ushuaia. "We crossed the Andes 14 times, cycling at heights of 5000 meters, traversed the Atacama desert and the salt flats of Bolivia."

It was humbling but clarifying. She got a sense of her life's purpose there. She wanted to train so much more than an athlete's body, because she had to rely on so much more than her own to survive South America. When she left the continent, she went in search of this broader mandate: training the whole self. In 2014, in the French Alps, she learned about the practice of Finnish doctor Aki Hintsa, who had worked with Ethiopian long-distance runners and who believed "performance is a by-product of well-being." Dr. Hintsa's holistic approach goes beyond monitoring an athlete's training, extending to diet and sleep patterns and, above all, posing some of life's hardest questions: "Do you know who you are? Do you know what you want? Are you in control of your life?" The philosophy appealed to Cullen as much as it did to the world-class athletes Hintsa trained.

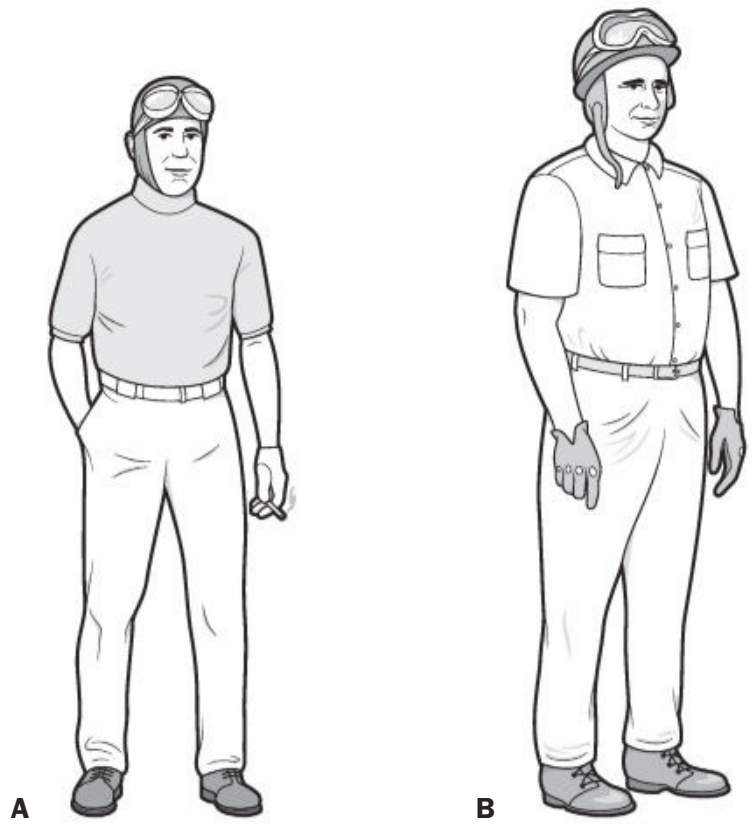
Hintsa himself had found F1 drivers to be "the most fascinating laboratory" for his philosophy, and by 2016 Cullen was working directly with Lewis Hamilton, then a three-time F1 champion who'd moved from McLaren to Mercedes.

The two clicked immediately. Hamilton was as restless as she was, curious about life outside the cloistered contours of an F1 track. He became a public figure, as legendary in his jet-setting milieu as James Hunt had been for his drinking and shagging. But Hamilton maintained a disciplined professionalism. He was obsessed with improving on track. Cullen funneled Hamilton's wandering interests into performance, turning an already fit professional athlete into a world-class, world-dominating one.

Hitting the gym wouldn't get them there. She talked with him about nutrition. Soon, Hamilton considered a vegan diet. "Your gut is your second brain," he told the British newspaper *The Independent* in 2017. "We're taught to drink milk and eat meat for protein and I started looking into other areas of research around this." He saw numerous benefits and, with Cullen's help—with Cullen even planning his meals—he went vegan. "That's a free advantage I'm going to take. If no one else wants it, well, that's their loss."

And it was. He won the world championship in 2017 and again in 2018. Along the way he and Cullen got matching tattoos, a single word just above their wrists: "Loyalty." She understood that his veganism was a chance to address animal cruelty and climate change, part of the broader worldview that never made its way onto the track but influenced Hamilton all the same. "I want my life to mean something," Hamilton wrote on Instagram. "Being part of the issue is not meaningful. Being part of the solution is...."

The change in diet gave Hamilton a high but consistent level of energy throughout the day and more focus on race days. Well-being really



The Evolution of the Species

Over time, simple physics forced the physical transformation of race-car drivers.

A. Tazio Nuvolari
Standing just 5'2" on the podium at the 1935 German Grand Prix, Nuvolari was dwarfed by a wreath intended for the Nazi-backed drivers of the Mercedes Silver Arrow team. It wasn't size or strength that made Nuvolari great—it was bravery and his ability to soak up inhuman abuse. He once raced in a full body cast the day after being thrown from his Alfa Romeo at 125 mph.

B. Juan Manuel Fangio
Nicknamed both El Maestro (the master) and El Chueco (bandy-legs), the five-time F1 champion is not often thought of as a prime physical specimen. However, he was actually a thoughtful athlete, sleeping a minimum of twelve hours a night and eating small, healthy meals of fresh fruit and vegetables. He also frequently played soccer and largely abstained from alcohol.

C. James Hunt
Born into relative privilege, Hunt was a boisterous bon vivant who defined F1's wildest era and was eventually consumed by his vices. He was initially physically fit from tennis and skiing, but alcohol and cigarettes caught up with him, and he died of a heart attack in 1993, aged just 45.

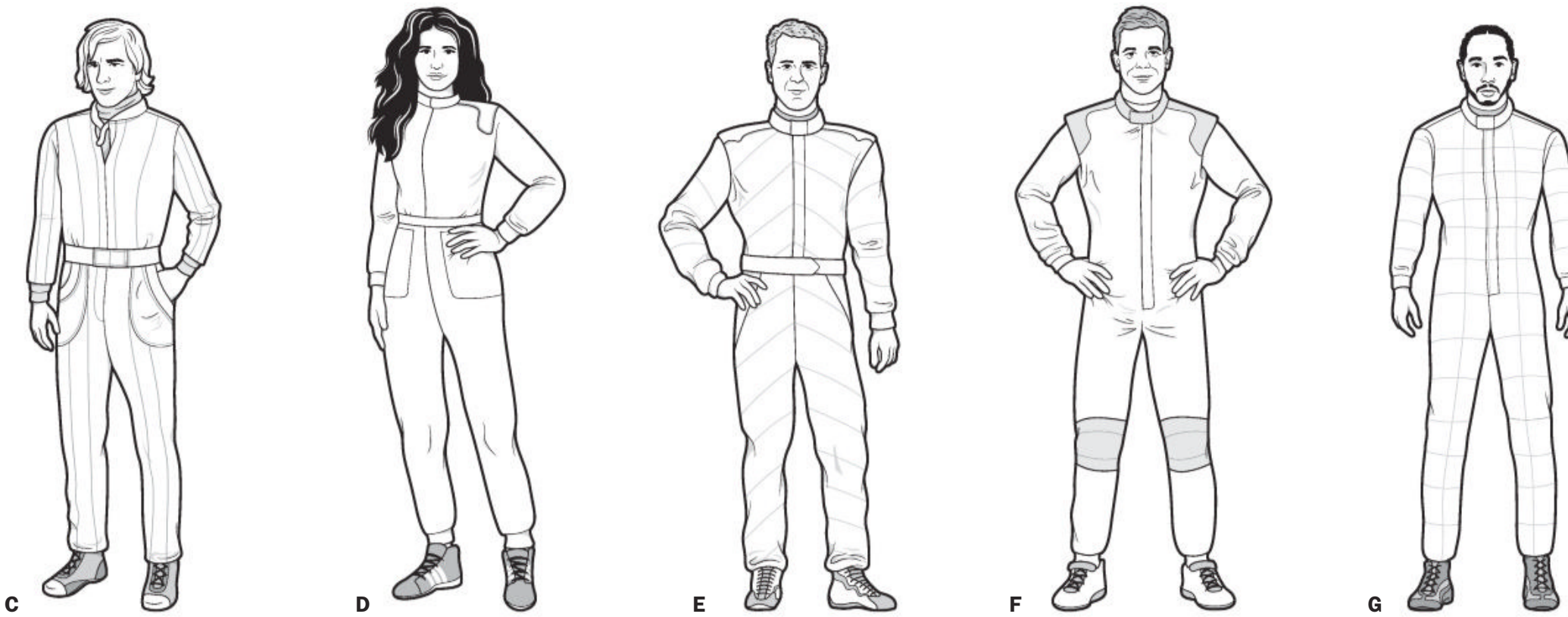
D. Michèle Mouton
Like her Audi Sport teammate Walter Röhrl, Mouton was an accomplished downhill skier. She was also a skilled dancer from an early age. Quick reflexes and finesse proved more important than raw muscularity as she shattered the record at the 1985 Pikes Peak hillclimb at the wheel of her 500-hp Quattro S1.

E. Michael Schumacher
Ruthlessly effective on the track, the seven-time F1 champ figured out that physical fitness equals speed. His fastest laps were often at the end of the race, as other drivers felt their endurance fading. Schumacher trained for a minimum of six hours a day and, during testing, would have blood samples taken at pit stops.

F. Sébastien Loeb
The most successful World Rally Championship driver, Loeb was first a French national champion gymnast. Rather than training at the gym, he relies on adventure sports to stay fit: skiing, mountain biking, and climbing.

G. Lewis Hamilton
As he ages, F1's reigning champion has made strategic training a focus: cardio, sprinting, and core strength. Compact, lean, but not over-muscled, Hamilton engineers his body with the same razor precision he uses for car setup.

—BM



did equal superior performance. Hamilton cut hip-hop tracks with Drake and opened a plant-based burger joint in London. The McLaren team had once tried to keep Hamilton focused on the next race, and Hamilton had bristled. Cullen saw that his artistry in the F1 world was based on his *joie de vivre* outside it.

Hamilton in turn relied on Cullen more. She became his de facto therapist, escorting him to the paddock, from qualifying to the interview room, grabbing a headset in the garage on Sunday and, alongside the Mercedes team, jawing in his ear in the middle of the race. And he kept winning, with two more world championships in 2019 and 2020.

In August, at the 2020 Spanish Grand Prix, where he was one of the oldest drivers in the field but also the most jacked, Hamilton ran a race so smooth he called it perfect. "Today I felt like I was in the most—it was a clear zone, the clarity I had today," he told the waiting press after his time atop the podium. It wasn't a fugue state, "not an out-of-body experience," but instead something made possible when his racing became his training became his nutrition became the books he read and the ventures he launched. It was Lewis Hamilton, harmonized. "I was just in my highest form," he said.

Weeks later, after he'd won the race in Istanbul and his seventh world championship, Hamilton appeared via satellite on *The Late Show with Stephen Colbert*. The host asked how Hamilton had celebrated.

He hadn't. Not really.

The rainy and challenging conditions of the track, the tears of joy that followed the checkered flag—"I've slept most of today just trying to recover," he said.

There is next year to consider, after all. And 36-year-old Hamilton knows how important sleep is to The Harmonized Man.

IT'S OBSCENE, the advancements in engineering in F1 racing. The crudest gauge is the longest: Compare Alfa Romeo's F1 car of the Fifties to its counterpart today. In the early days, cars made 350 hp; today, they make 1000-plus, from an engine with just 100 cc more displacement.

The whole game is about efficiency. Sure, the car Michael Andretti drove in the Eighties had 1500 hp, but it was as loud as it was wasteful. Today's engines—excuse me, "power units"—are hybrid, gas and electric, and around 50 percent more efficient than they were just seven years ago. "Compared to 2014, the power unit is 109 horsepower greater using the same amount of fuel," Lewis's Mercedes team said in a proud statement of their own engineering feats last year.

Everything is high tech. Drivers' gloves have biometric sensors. The steering wheel looks like NASA's launch control, the driver overseeing fuel flow and battery storage and finessing the deployment of all that energy. It's no wonder that the greatest driver in the sport has gone beyond memorizing racetracks and adjusting his vehicle, tuning his own body for ultimate performance at the pinnacle of motorsports.

ILLUSTRATIONS BY BROWN BIRD DESIGN

RIDE LOW, SWEET CHARIOT

GREETINGS FROM THE LOWRIDER CAPITAL

OF THE WORLD

WEDGED BETWEEN two national forests and split by the Rio Grande sits Española, New Mexico. With a population just over 10,000, and an economic relevance that peaked when the railroad rolled through in 1880, you wouldn't expect much more than Southwestern small-town tourist fare here. All the more surprising, then, that it's become the Lowrider Capital of the World. ¶ It started small, 60 years ago. The lowrider scene had already taken root in Los Angeles, a new car culture born of rebellion. Its brash, flashy, low-and-slow mantra served as an act of defiance by Chicanos who had long been told to keep their heads down, work hard, and assimilate into the white American mainstream. Lowriders were an outward statement that they weren't content to blend in. They had arrived, they had a culture all their own, and they wanted people to know it. ¶ That resonated in Española. The town, sometimes called "Little L.A.," has deep ties to the Hispanic and Chicano communities of Southern California. Families that had been in New Mexico for generations would head west seeking opportunity and return with money and a taste of California culture. Lowriders were a natural fit for Española, a continuation of the artistic tendencies that had defined Northern New Mexico for hundreds of years. ¶ "Back in the days of horses and buggies, Spanish settlers in Northern New Mexico used to adorn their horses. You know, the saddles, they'd make them very ornate and put a CONTINUED ON PAGE 068

“I HAD ALWAYS WANTED A 1960 IMPALA BECAUSE

A

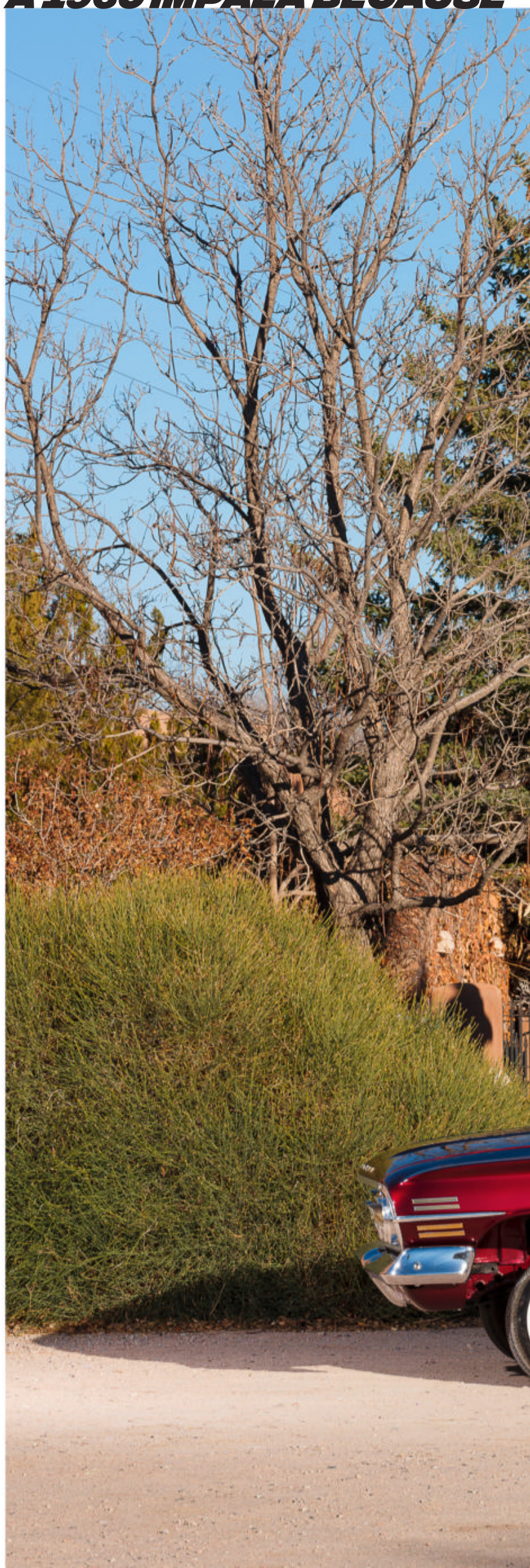
B

A. Even the taillights on Jeff Quintana’s 1960 Chevy Impala have lowrider flair, with delicate gold detailing. He’s spent more than 25 years customizing this car.

B. By day, Quintana, 51, is a road maintenance foreman. But his real art is building cars and *viclas*—lowrider motorcycles.

C. Hydraulic suspension allows a car to go as low as possible, but the Impala looks just as good when it’s riding high.

C



MY DAD HAD ONE WHEN I WAS GROWING UP." *JEFF QUINTANA*

"I LIKE THE IMPALAS, BUT FOR ME, THE SQUARE BIG BODY OF A CADDY IS

A. You may recognize this 1982 Cadillac Fleetwood Brougham lowrider from the 2006 music video for T.I.'s "Top Back (Remix)."

B. Today the Caddy is owned by James Leyba, 35, a quality-control inspector at Los Alamos National Lab, seen here with his wife, Stefani Martinez-Leyba.

C. Detail of the paint-work and boxy body. Leyba is in the process of overhauling and modernizing all of this Caddy's guts, but the sweet paint job is here to stay.

B

C

A

JUST SOMETHING I'VE ALWAYS LOVED." ***JAMES LEYBA***

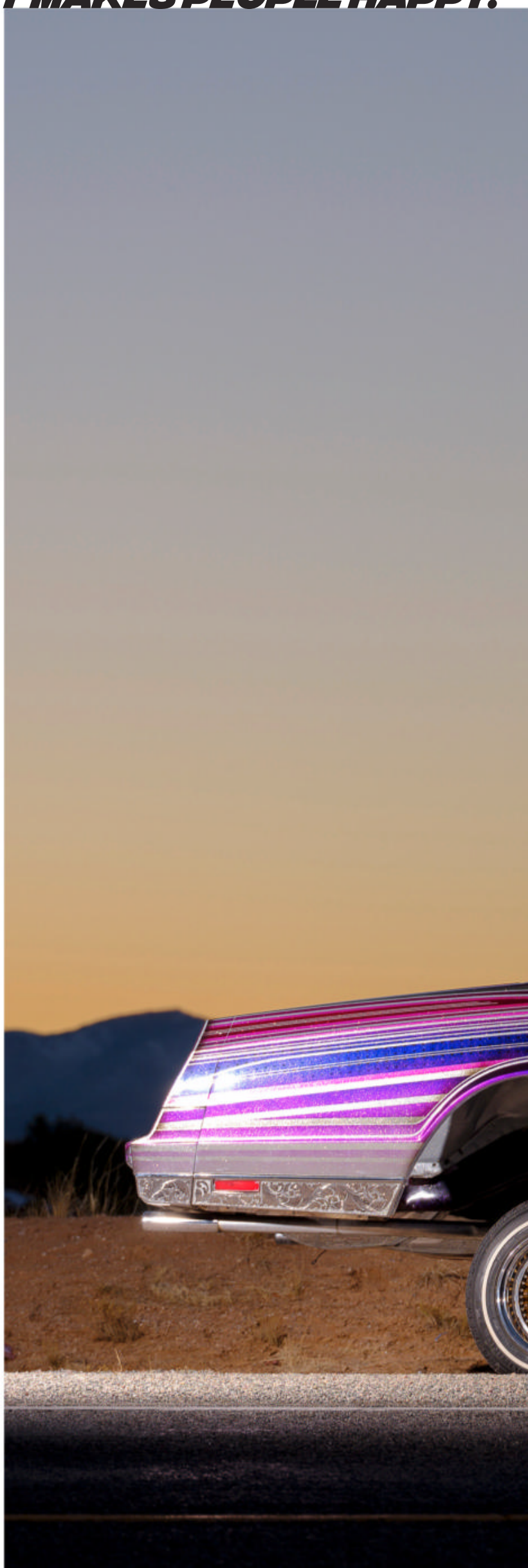
"I LIKE THE WAY IT MAKES PEOPLE HAPPY.

A

B

A. Orlando Martinez Jr., 41, with his nephew Gabe in his 1983 Chevy Monte Carlo. Martinez works for a tourism company giving tours of Santa Fe—in a lowrider.
B. Martinez named this car after his hometown, Española. The paintwork was done by lowrider legend Rob Vanderslice. Notice the engraving on the mirror.
C. Martinez has been perfecting this car since he was 16.

C



IT BRINGS OUT A POSITIVE ENERGY, YOU KNOW?" ***ORLANDO MARTINEZ JR.***

lot of work into them so they could show off," says Fred Rael, chairman of the board of directors for the Española Lowrider Museum, currently under construction in downtown Española. They'd ride into town for church, dressed in their Sunday best, flexing with jewels and shiny trim.

The slow car cruises that clogged Española streets on Sundays throughout the Seventies and Eighties were the same kind of flex. The destination wasn't the key; it was about showing up with your community and demonstrating your pride through spoked rims, whitewall tires, custom upholstery, gold and chrome plating, and lots and lots of artwork—pinstripes, murals, etching, engraving.

These countercultural movements are always met with backlash. Every form of automotive modification has sent enthusiasts home with warnings, tickets, and occasionally impound fees. Showing off on the street is a surefire way to draw police attention, and lowriders were no exception. Hydraulic suspension, the defining feature of a modern lowrider, was invented in response to harassment from law enforcement. California authorities made it illegal for any part of a car's bodywork to sit lower than the bottom of the wheel. With hydraulics, you could raise the car to dodge a ticket and slam it back down when the cops were gone.

In Española, lowrider builders we interviewed tell stories from decades past of being stopped for no reason and ticketed for minor offenses. Those bad vibes are gone. In 2018, the city council officially declared Española as a "cruise-friendly municipality" and formally adopted the town's long-standing nickname, Lowrider Capital of the World.

Today, in backyards and garages all over town, enthusiasts are at work building lowriders of their own or pitching in on someone else's project. "People here help each other out," says Jeff Quintana, an Española lowrider builder. "It is part of the culture, because so many people are building these cars. There's not any competition between us. We do our own work, but when we get stuck there's always a friend to call. One buddy is a great welder, another is an engine guy. My friend Leroy recently helped me put in a new windshield."

Every spring, there's a lowrider pilgrimage to an Española church believed to have special healing powers. All the cars come out. They come from Colorado, from Albuquerque," says Quintana. "It's very intense." And in July, the town celebrates Lowrider Day with a huge parade of hundreds of vehicles.

On either of those occasions, and at any cruise spot throughout the year, you're likely to find the three exquisite lowriders you see here, along with their owners—all of them from Española, all carrying on the legend of the Lowrider Capital of the World.

BY **MACK HOGAN**

THE CLASSIC, PERFECTED

1960 CHEVY IMPALA

IMPALAS HAVE LONG been the go-to lowrider. Sold in massive numbers, cheap to buy—or at least they used to be—easy to fix, and extensively supported in the aftermarket, they're the ideal blank canvas. When Jeff Quintana stumbled upon the remains of a 1960 Impala while dropping off a load of building materials for work, he recognized the potential in the bare shell. It had no engine, no interior, and was a cosmetic wreck. The owner was using it as storage, but Quintana saw what it could become.

"I had always wanted a 1960 Impala because my dad had one when I was growing up," Quintana recalls. He bought the car for $2000. "I put it on a trailer, got it back behind my house, and started working on the thing." Quintana had a vision for what he wanted to build. That vision took him 25 years to perfect.

He installed a gold-and-chrome-plated Chevy 350 V-8, fitted hydraulics (and reinforced the frame for hopping), and painted it cherry red over bright white. It's a classic beauty made even more beautiful, no detail left untouched: Every inch of the car is painted or plated, every surface textured and polished to perfection. From its massive JBL subwoofers to its pristine gold wheels, Quintana's car is the quintessential image of a lowrider realized in metal and leather.

Quintana also builds *viclas*, customized motorcycles that share the baroque aesthetic of lowrider cars. He calls them "Chicano-style bikes." His 1997 Harley-Davidson Heritage Springer and 1992 Electra Glide look more like Chicano-style spaceships.

But his real love is the Impala. "I can't even imagine how much time I've put into it over the past 25 years," he says. "It's a labor of love, the car I have always wanted to build."

PHOTOGRAPHS BY **TAG CHRISTOF**

THE TWO-SIDED STORY
1982 CADILLAC FLEETWOOD BROUGHAM

IF QUINTANA'S Impala is the embodiment of classic lowrider style, James Leyba's 1982 Cadillac Fleetwood Brougham represents the cross-cultural appeal of these machines. The Brougham was originally built as a lowrider in Compton, California, the epicenter of early West Coast hip-hop culture. The intricate paintwork layered over the baby-blue base coat was done by legendary custom painter Kenneth "Doc" Stewart. The result was attention-grabbing enough to earn a spot in T.I.'s "Top Back (Remix)" music video in 2006, where you can see the Caddy cruising body-up on its hydraulics and getting lathered up by dancers. Near the high point of the hip-hop lowrider revolution, this was one of the cars that repped the scene on a national stage.

But that was 15 years ago. Earlier this year, the car turned up on Facebook Marketplace in Albuquerque, New Mexico, just as Leyba was looking to take on a new project. He had sold his last build—a "hopper" Volkswagen built for hydraulics competitions—in 2018, when his mom was diagnosed with cancer. But he had finally found the time to get back into the game. The Brougham was perfect.

"I like the Impalas, but for me, the square big body of a Caddy is just something I've always loved," Leyba says. "I saw the movie *The Wash* with Dr. Dre. They have that seafoam-green Cadillac with a peanut-butter top and interior. I've loved it since that day."

Finding a car with such a rich history also gave Leyba the chance to rescue something special. Its music video days may be behind it, but the Caddy is getting a full overhaul from Leyba and his friend Leroy "China" Martinez. They're reinforcing the frame, chrome plating the underbody, and tidying up all the details that were skipped on the initial build. All of the major components are getting overhauled—the 4.1-liter V-8 engine included. Everything will be updated to modern standards, cleaned up, and strengthened. The lone exception is the paint job. Leyba will retouch obvious flaws, but a car painted by Doc himself is too special to respray.

"It had its first story in Compton, in the video," Leyba says. "I want to give it its second story."

THE LOVE LETTER
1983 CHEVY MONTE CARLO

ORLANDO MARTINEZ Jr. doesn't just love lowriders. He loves the scene, he loves the way these cars bring people together, and he loves his town. His build—a 1983 Monte Carlo he named "Española"—is a rolling testament to that passion. It's not the result of one grand vision, but a constantly changing creation that he started when he was 16.

"I'd save money and buy the wheels, then save more the next summer to get a paint job. And, you know, I added a little bit at a time to it," Martinez says. "Then I took the car completely apart in 2000 or 2001, did a whole frame-off reinforcement, and got it all ready for hydraulics and chrome plating."

For decades, the Monte Carlo has been not just a project, but a teacher. Martinez learned body work, fabrication, and hydraulic assembly working on the car. The one thing he won't take credit for is the paintwork, which was done by local legend Rob Vanderslice. He gave Vanderslice no direction, no design brief. Just handed over the car and asked him to work his magic. "Rob's an artist, you know. He does the renders in his head," Martinez says. "I was just fortunate enough to get one of his works."

Martinez's philosophy is not about building the perfect car or stopping at the completion of a single vision. It's about putting in the work, experimenting, changing, and learning from the community.

"I like the way it makes people happy. It brings out a positive energy, you know?" he says. "When people see your car and then they start asking you questions. Or you see how it makes little kids happy, you think maybe one day they'll want to do something like that. That's what makes me happy."

Lowriders may have started as a way to carve out a corner of Southern California car culture, but in Española, they rule the town. And that seems to make everyone happy in the Lowrider Capital of the World.

THE REAR-ENGINE CANVAS THAT SPAWNED A UNIVERSE OF GAL

CUSTOM SPORTS CARS.

AXY 911

THE PORSCHE 911 probably isn't the first car that comes to mind when you think "custom"—not in a world of rumbling Mustangs, jacked pickups and ground-scraping imports. But in the past half century, Stuttgart's backward sports car has become a jumping-off point for personalized performance machines. What's really remarkable about the world of 911 customs is the sheer breadth of it, the disparate—and downright bizarre—styles branching off in every direction from this one model.

In every corner of the car community, there's likely a 911 on hand to represent. Cool, weird, tough, cute, vintage, postmodern, ugly, fast, faster—it doesn't matter. There is a 911 custom for every purpose, if not exactly for every purse.

Why should this be? Part of the 911's appeal is its longevity. Porsche has sold more than a million of these weird rear-engine four-seat sports cars over the last 50-plus years. And during all those years, the 911 has been buffeted by the winds of changing fashions, regulation, and technology. The 911's unique versatility makes it a broad platform for different styles. It's able to conquer a back road with ease, then commute through traffic in relative comfort the very next minute.

Countless people have become famous, infamous, or at least made their mark with their own expressions of the 911. Alois Ruf, Akira Nakai, Uwe Gemballa, the members of R Gruppe. People who have taken Porsche's creation and made it their own. Careers made, industries shifted.

And it's not just outsiders who have created their own takes on the rear-engine legend. The 911 has been the mainstay of the Porsche lineup for most of its existence, and the company itself has also tested the limits of its basic framework by conjuring a wide variety of one-off 911s, from lifted and girded desert racers to show-stand frivolity. And what are Porsche's 911-based race cars but customs designed around narrow guidelines?

You can imagine how difficult it is to choose a shortlist of modified 911s. We make no claim to covering every permutation. But we hope we've taken a broad enough view to present the rough boundaries of the known custom 911 universe. No matter where your allegiance in the car world lies, we bet there's one here that will appeal to you. Or perhaps this will inspire you to create a unique 911 of your own. —BRIAN SILVESTRO

ILLUSTRATION BY **KEVIN HAND**

THE OBSESSIVE RESTOMODS

A

Singer-Williams DLS

Singer Vehicle Design is defined by its ongoing quest to create the most beautifully detailed air-cooled 911 restorations in the world. Nothing is forgotten in that mission, the company painstakingly reimagining 964-generation donor cars to become the Platonic ideal of the sporting 911. But the vibe has always been vintage. With its newest project, the Dynamics and Lightweighting Study, or DLS, the company is pursuing a slightly different take on the ultimate 911. And it's enlisted some heavy engineering talent in the pursuit of weight reduction.

The study itself, at the request of a client with a 1990 964, was a collaboration with Williams Advanced Engineering. It drew on the extensive lightweighting and aerodynamic expertise of the legendary Formula 1 constructor in order to trim every bit of fat possible from the 911. The top line stuff is obvious: To increase strength and decrease weight, Singer uses magnesium, carbon fiber, titanium, and every other exotic material you can imagine, save for adamantium. That doesn't just mean lightweight carbon body panels; it also includes a magnesium Hewland six-speed manual transmission.

But when the big weight-saving gains were exhausted, Singer cut a hole sideways through the shifter and installed a carbon-fiber Momo steering wheel with circular cutouts to drop grams without sacrificing integrity. In fact, everywhere you look—from the seats to the hood struts—it appears some maniac hacked into a 911 with a hole punch. The result of all the relentless trimming, drilling, and reimagining is a car with a curb weight of just 2180 pounds, a half-ton lighter than a stock 964 Carrera.

Extensive computational fluid dynamics work informed subtle massaging of the bodywork and underbody. These millimeter adjustments led to better overall aerodynamics, adding downforce without adding much drag. The aero tweaks work in conjunction with special, Singer-specific Michelin Pilot Sport Cup 2s and bespoke EXE-TC manually adjustable suspension components to massively improve cornering performance compared to stock. Featherweight Brembo calipers with carbon composite rotors slow the whole thing down. Supercar braking, suspension, aero and lightweighting tech, in a car that weighs about as much as a first-generation Miata.

With the 247-hp engine from a 964, you'd get modern sports car speed in an unmistakably beautiful retro 911.

But there's no stock powertrain here. With the help of Williams and the late Porsche powertrain guru Hans Mezger, Singer modified the Porsche flat-six to make 500 air-cooled horses. That puts the DLS's power-to-weight ratio in Bugatti territory. You'll have to cut a hypercar-level check to get one, though, as pricing for the DLS upgrades starts at $1.8 million. When you chase the best possible incarnation of the air-cooled 911, every detail is important and nothing is cheap. —MACK HOGAN

COURTESY OF SINGER VEHICLE DESIGN; COURTESY OF RUF AUTOMOBILE

A. Singer founder Rob Dickinson sang and played guitar in rock band Catherine Wheel. His cousin is Iron Maiden vocalist Bruce Dickinson.

RUF SCR

At what point does a Porsche 911 restomod go so far that it ceases to be a restored Porsche or a modified Porsche or, indeed, a Porsche at all? Wherever that point is, the RUF SCR has blown past it. And what a glorious thing it is. The SCR might look like the best 964-generation 911 ever built, but its body is made of carbon fiber. Its structure and suspension are not Porsche pieces either. The only big chunk of genuine Porsche in this RUF is the 503-hp 4.0-liter flat-six engine, which is basically a version of the Hans Mezger-designed water-cooled engine that powered the 997-era GT3. It's bolted exclusively to a six-speed manual transmission. That powertrain in a car that weighs about 2800 pounds makes the SCR the Porsche purist's non-Porsche, a digitally remastered Porsche Greatest Hits album. We'll have ours in Irish Green. At around $800,000, it's a bargain. —DANIEL PUND

B. The Irish green of this RUF SCR is a favorite color of both the Ruf and Porsche families.

RAUH-Welt BEGRIFF

The Porsche world can be a pretty rigid, insular place. Even 911 customs are often just recreations of past legends. This is part of what makes the creations of Japanese tuner RAUH-Welt BEGRIFF so startling. Well, that and the absurdly tall, sometimes three-tier wings and exaggerated over-fenders. Love them or hate them, there is no mistaking an RWB custom 911 for anything else.

Popular with the underground tuner crowd and comically easy to spot, the cartoonish RWB-modified 911s are destined to steal the show wherever they appear. They represent the most ridiculous end of the custom 911 world. They've become the default internet-famous Porsches.

RAUH-Welt BEGRIFF, translates to "rough world concept" in German, was born in the Nineties in Japan. It's the brainchild of master bodywork artist Akira Nakai.

The chain-smoking Nakai has attained quasi-mystic status. Essentially a one-man operation, Nakai hand-cuts each fender and applies his own kits—shipped from Japan—to each car, flying out to wherever his clients are located.

Like the best tuner specials, RWB Porsches take many different forms. Many are built to stun at meets, while others are assembled to carve through canyons. Some even go endurance racing. RAUH-Welt BEGRIFF's 911s are still 911s. —BS

A

B

COURTESY OF RWB; COURTESY OF DP MOTORSPORT

A. The name comes from Akira Nakai's old drift team, "Rough World."
B. The signature piece of any DP935 is that slanted nose, a drastic departure from the typical 911 silhouette.

DP Motorsport DP935

They say if you listen to enough Steely Dan on vinyl, you can actually *hear* the sound of cocaine. They also say if you spent enough time in Miami dealing with one-off Porsche 911s, you would eventually become a walking brick of the white stuff. The DP Motorsport DP935, with the dramatic, swooping slant of its nose and preposterous speed, is an automotive personification of coke.

Every DP Motorsport 911 began its life as a 930 Turbo. German engineer and DP founder Ekkehard Zimmermann and his crew would dismantle a customer's car in their garage in Overath, Germany, outside Cologne. Then they brought the beast to life: Each one had a radical slantnose with pop-up headlights, a ducted front apron, a monster spoiler, and flared-out fenders connected by aero-smooth running boards. From the outside, it's a bizarre car to behold, but the famous DP lollipop warned other aficionados of the menace within.

It was fast in any context, but for a mid-Eighties road car, it was lightning on rails. Zimmermann generally kitted the DP935 with a 3.3-liter engine, capable of doing 0-60 in around 4 seconds. In the late Eighties, our sister publication *Car and Driver* named the DP 911 one of the five fastest production cars of the decade.

Zimmermann founded DP Motorsport in 1973 after producing lightweight fiberglass bodywork for the Kremer Racing Porsche 911 RSR. That 911, with its black-and-orange Samson livery, dominated the European GT Series, a significant humiliation for the Porsche factory team. A couple years later, the Kremer brothers commissioned DP to develop a whole new 911-based chassis for their Le Mans campaign, and over the course of the Seventies would continue to refine the Kremer RSR until it would finally win the 1979 24 Hours of Le Mans. Joining lead driver Klaus Ludwig were Bill and Don Whittington, a couple of life-on-the-edge Americans who would—as close readers of *Road & Track* know—end up in the pokey after a series of drug-smuggling and tax busts in the Eighties.

The Kremer win at Le Mans humiliated the factory Porsche teams and cemented Zimmermann's legacy. It would also transform DP Motorsport from a somewhat obscure tuner shop to one of the world's most sought-after builders.

Which brings us to the Eighties, when DP Motorsport started turning out custom 911 road cars for all sorts of shady customers (in addition to some not-so-shady customers like Mario Andretti and Olympic skier Bode Miller). The fun side of the Eighties would be much less fun if not for the slantnose, wide-bodied Porsches cruising Ocean Drive. The cars sold for well over $100,000 apiece—real money in the Porsche world of 40 years ago.

As for Zimmermann, he turned in his wrenches, retiring in 2020 with a final 930 build that was unveiled at last year's Essen Motor Show. This one doesn't have a slantnose. –MIKE GUY

Troutman-Barnes Four-Door 911 S

Long before the Panamera was even a twinkle in Porsche's eye, William J. Dick Jr. thought a four-door Porsche was a good idea. Such a thing did not exist in 1967, so Dick—a Texas Porsche distributor—commissioned race-car builders Dick Troutman and Tom Barnes to create one. A Christmas gift for his wife, the Troutman-Barnes four-door 911S was first shown on the March 1968 cover of this magazine. Troutman and Barnes cut the donor 911 in half and lengthened the car by 21 inches. The rear doors were factory front doors flipped to opposite sides, and B-pillars and window frames were fabricated from scratch. To turn the 911 into a true luxury sedan, Troutman and Barnes added leather seats, a sunroof, air conditioning, walnut trim, and Porsche's "Sportomatic" semi-automatic transmission. They ditched the standard Fuchs alloys in favor of wider steel wheels with hubcaps, to cope with the added weight and give a more elegant appearance. We never reported an exact price, but apparently, it was only a little more than a Rolls-Royce Silver Shadow. The Dick car was the only four-door 911 Troutman and Barnes ever built. Porsche only began seriously considering the idea 20 years later with the 989 prototype, which, despite its front-mounted V-8, looked very much like a four-door 911. It never made it to production. We had to wait until 2009 to get a proper Porsche sedan. —CHRIS PERKINS

A

RALPH POOLE; RANDY WELLS

THE R GRUPPE

A. The Troutman-Barnes four-door 911 predated the Panamera by decades, but no one knows the whereabouts of the custom-built car today.
B. Door handles? Fiberglass, like the original 911 R.

B

Rolly Resos's R Gruppe 1966 911

Rolly Resos fell under the spell of the 1967 911 R, the most extreme interpretation of what an early 911 could be. The factory only built 24 of the 210-horse, lightweight model for racing (see page 082), but it has had an outsized influence on Porsche enthusiasts ever since. It's been the template for more 911 hot rods than any other single model. Resos found this 1966 911 at European Collectibles in Costa Mesa, California, back in the Nineties, and some interesting parts caught his eye.

"I was looking at it and I noticed the curvature of a factory roll bar," Resos recalls. "So I walked over and the car had deep six [Fuchs alloys] on it with long studs, early Recaro elephant-foot seats, and I popped the hood and it had a 100-liter fuel tank." The '66 was somewhat neglected, but solid and interesting, so Resos bought it. "It was a good car, and I modified it a little bit," he says. That's an understatement. Resos installed a fiberglass hood, fenders, and rear decklid, plus louvered plexiglass quarter windows and lightweight taillights, all inspired by the original R—the perfect complement to some choice engine modifications done by a previous owner.

Around the same time he found this car, Resos linked up with fellow R obsessives, Cris Huergas, Ernie Wilberg, and Freeman Thomas (designer of the Audi TT and Volkswagen New Beetle), to form the R Gruppe, a club with the 911 R as its deity and the factory's Sport Purposes Manual as its holy scripture. Porsche first published the manual in 1968, covering everything a person might want to know about upfitting a 911 for racing. Early 911s were relatively inexpensive when the group started. And, purists be damned, the R Gruppe set about defining its own scruffy, influential aesthetic. The group's membership is worldwide, but there's a distinctly California vibe. Resos's car has that SoCal sprezzatura—carefully considered aesthetics that give off the nonchalant air of a workhorse race car.

Resos has worked in the art world his whole life, so this attention to detail is no surprise. He didn't bother to repaint the fiberglass body panels, giving the '66 a simple, elegant livery. Resos added decals to complete the look. There's no such thing as a definitive R Gruppe car, but Resos's is a great example of a style that's attracted many imitators. There's a bit of mystery around this car, too. No one is quite sure who modified it in the first place, though Resos said it lived at Porsche's Weissach test facility for a few months. And no, you can't apply to join the R Gruppe. If your 911 is cool, you might get invited to join the strictly limited 300-member club. –CP

THE ENGINE SWAP:

A

Lanzante 930 with TAG F1 V-6

During the golden age of turbocharged Formula 1—the Eighties—Porsche was contracted to supply V-6 engines to McLaren under the TAG brand name. To test the motor, Porsche assembled a single 930 with the turbocharged 1.5-liter V-6 in full F1 spec out back.

The car remained a one-off museum curiosity until 2018, when Lanzante—a U.K. firm best known for converting McLaren F1 GTRs to road-legal spec—announced it would build 11 more, each with an original TAG-branded, race-used F1 engine from 30-plus years ago.

Turns out, McLaren still had nearly a dozen of the engines stashed away and sold them to Lanzante. Each car comes with a plaque detailing race history, drivers, and even finishing positions.

The engines are detuned to 503 hp for streetability, but they still rev to a stratospheric 9000 rpm while pushing 44 psi of boost. The manual transaxle gets custom ratios, allowing for a top speed of 200 mph.

The Lanzante doesn't look much different from a stock 930 on the outside. In fact, there's little indication how special this 911 is unless you peer beyond the front bumper, which now houses radiators for the water-cooled V-6. Or you take a close look at the engorged whale tail. But there will be no mistaking its performance, its sound, or its $1.4 million price tag. –BS

A. Porsche engine guru Hans Mezger considered the TAG Turbo one of his greatest achievements.
B. Alois Ruf nearly painted the original CTR red. We're glad he didn't.

COURTESY OF LANZANTE; RICHARD PARDON

1987 RUF CTR "Yellowbird"

There was a time when Porsche leadership lost interest in the 911. By the mid-Seventies, the heads of the company found the froglike sports car outdated. The future was in the front-engine, water-cooled, V-8-powered 928, an on-trend car to rocket Porsche into the gleaming Eighties. Development on the 911 dragged to a halt.

That was an opportunity for Alois Ruf. In 1974, he took over his father's repair shop in Pfaffenhausen, creating a specialty operation focused on 911s. It became an external engineering department, evolving and refining the model that Porsche had all but abandoned.

When Stuttgart refused to upgrade the 911 Turbo's ancient four-speed transmission, Ruf made his own five-speed. As Porsche slimmed down the 911 lineup to just the naturally aspirated SC and the Turbo, RUF Automobile GmbH turned them into faster, more powerful machines.

In 1981, newly appointed Porsche CEO Peter Schutz singlehandedly reversed the decision to kill the 911. Five years later, Porsche began building the 959, the most radically advanced 911 variant to date. But Alois had a hell of a head start.

In 1987, *Road & Track* invited the 959 to its second "World's Fastest Car" competition. It was a natural fit: a twin-turbo, all-wheel-drive world-beater with height-adjustable suspension and 444 hp. But we also asked Alois Ruf to bring his latest. The car he drove to our shootout at Volkswagen's Ehra-Lessien test track had been completed just a week before; a fresh set of high-speed tires sat off-gassing in the passenger seats. In the article in the July 1987 issue, we referred to it as "the RUF Twin-Turbo." The official name is RUF CTR, for Group C turbo RUF. But you know it as the Yellowbird.

Next to the technology-packed 959, the Yellowbird seemed rudimentary. It was screwed together so hastily, the radio antenna was taped to the inside of the windshield. But those twin turbos fed RUF's 3.4-liter engine to the tune of 470 horses, conservatively. Nine cars showed up to our top-speed shootout—including two Ferraris, a Lamborghini, and an AMG Hammer. The RUF trounced them all, blasting to 211 mph with none other than Phil Hill at the wheel. The next fastest car, a Koenig-tuned 911, was 10 mph slower. The Porsche 959 topped out at a mere 198.

The Yellowbird became an instant legend. The top-speed story introduced RUF Automobile to the world. Not long after, Alois set up some cameras and had his pal, Stefan Roser, fling the Yellowbird around the Nürburgring. Titled "Faszination on the Nürburgring," his oversteering, tire-smoking, edge-of-control lap became the first automotive viral video, passed around on VHS bootlegs and racking up YouTube views to this day.

Just as it's impossible to imagine Porsche without the 911, it's hard to envision today's galaxy of Porsche tuners, hot-rodders, and bastardizers without Alois Ruf. Porsche's flirtation with a front-engine future inspired him to build the car that launched his legend. In doing so, he blazed the trail for anyone who's ever looked at a flat-six sports car and thought, "I can make that better."

—BOB SOROKANICH

A

1974 Porsche 911 IROC

Porsche's legendarily thick book of options allows buyers an unusual degree of customization—for a cost, of course. If the buyer is Roger Penske and the order is for 15 identically altered cars, well, he can populate an entire race series with some of the most coveted 911-based customs to ever turn a wheel. That's precisely what Penske did in 1973 when he ordered a batch of 911s in an M&M's-assortment of colors for the inaugural season of the International Race of Champions, which bridged the late fall and winter months of 1973-74. The cars were the perfect mix of RS and RSR race models, with the upsized 3.0-liter engine of the '74 Carrera RSR but the more modest fender flares and Fuchs alloys of the 3.0 RS model. They were shipped to America with the familiar ducktail spoilers but were later fitted with the whale tails that would arrive for '74 and come to define 911 style in the Seventies and Eighties. How would one make such cars even more appealing? Allow only the world's 12 best drivers to race them in front of television cameras. It's no wonder road-going IROC tributes are still a hot commodity. —DP

B

Chris Banning's Mulholland "RSR"

From about 1960 to roughly 1983, a 1.8-mile stretch of Mulholland Drive between Los Angeles and the San Fernando Valley was Southern California's center of speed. On that undulating stretch of pavement, Porsches, Corvettes, Datsuns, Mini Coopers, Mustangs, and Camaros met to chase one another for late-night glory. This is the greatest glory hog of them all: Chris Banning's 1973 Porsche 911 "RSR" with a 3-inch chopped top. It never lost on Mulholland.

"It's a bunch of Porsche components," Banning explains. "Three feet of the front and 3 feet of the back are from a 1975 Porsche. The floorpan, roof and dash assembly come from a 1972. The front bulkhead is from a 1967. Arnie Verbiesen had been racing it in SCCA A-Sedan, but when he laid back the windshield they booted him out of the class. I bought it as a shell for $1300."

Seam-welded and reinforced with an aluminum roll cage, Banning built the 2260-pound mutant with a stiff structure and compliant suspension to handle the divots and tight turns on Mulholland. The engine, assembled by the long-gone Bozzani Porsche dealership, started as a 911 S 2.4 with 2.8-liter barrels and pistons, RSR cams, ported heads, and mechanical fuel injection for instant acceleration. "It feels like 300 horsepower to me," says Banning. "It's beaten 930s."

Banning's 911 survives—on Fuchs wheels from one of the original IROC Porsches and Goodyear Blue Streak racing tires—in the garage at his house just off Mulholland Drive. Right now, the car is in pieces. He swears it will roar again.

—JOHN PEARLEY HUFFMAN

COURTESY OF PORSCHE; MICHAEL EDWARDS/HERALD EXAMINER; COURTESY OF PORSCHE

C

A. Mark Donohue tamed the 1500-hp Porsche 917/30 to win the 1973 Can-Am title, then took the inaugural IROC championship in the "off-season."
B. *King of the Mountain,* a 1981 movie, was based on the Mulholland street-racing scene.
C. Today, Louise Piëch's 911 Turbo number 001 lives at the Porsche museum.

Louise Piëch's 911 Turbo

The best factory-custom Porsches went to the very well connected. Louise Piëch, daughter of founder Ferdinand Porsche and mother of eventual VW Group CEO Ferdinand Piëch, enjoyed a number of custom 911s, including the very first 911 Turbo, a gift for her 70th birthday in 1974. Her car was subtle, eschewing the wide bodywork that distinguished the Turbo along with any Turbo badging. If you didn't know, you'd assume this was just another Carrera. Piëch seems to have preferred fabric upholstery, and her Turbo is trimmed with a lovely red-and-blue tartan on the seats and door cards that's echoed in the "Porsche" door decals. She also requested a windshield with no tint. Apparently, she liked to drive to the Alps and paint landscapes from inside the car, and didn't want tinted glass to color her view. —CP

1967 911 R

The hot-rod 911 story starts here, in 1967, with a clenched fist of noise and fiberglass called the 911 R. According to Porsche lore, race chief Rico Steinemann and his colleague Dieter Spoerry were eying the winter months between race seasons, musing over empty pint glasses, as you do, when the topic of breaking endurance records came up.

Months later, at Italy's Monza circuit, Steinemann's team set out to cover 20,000 kilometers at pace to snatch a glut of average-speed records back from Toyota. Porsche brought in its swoopy, mid-engined 906 for the job. But Monza's brutal, high-banked curves made mincemeat of the 906; the Porsche prototype's delicate frame and spindly struts were walloped by the circuit's moonscape asphalt.

Steinemann phoned for backup. Two 911 Rs were dispatched overnight from Germany: one car to rewrite the record books, another as organ donor. The Rs were flyweight 911s built the year before, motivated by a 210-horse, 2.0-liter flat-six borrowed from the 906 itself. Extensive use of fiberglass allowed for an 1800-pound curb weight, making the R the lightest production 911 to ever leave the factory. The door handles were even made from epoxy plastic. They might have been only grams lighter than their steel counterparts, but Porsche was making a point: No detail is too small in the pursuit of glory.

Swiss ace Jo Siffert (and his mustache) led a group of drivers on the record push. They wrestled the 911 R against driving rain, the brutal track, and red-eyed fatigue, but the Porsche and its pilots held firm. Four days later, the 911 R had covered 20,000 km at an average speed of 130 mph.

While just 24 examples of the R were ever built, that blast through the Italian rain set the blueprint for every Porsche hot rod that came after. A modded 911 should be lighter, louder, stronger, and meaner than the rest.

—KYLE KINARD

A

B

A. A 911 R took victory at the Marathon de la Route, a fearsome 84-hour race at the Nürburgring.
B. The 953 was a testbed for the mighty 959's all-wheel-drive system.
C. The Safari spirit lives on. In 2012, Porsche built the 911 Vision Safari concept, which was inspired by the SC.

COURTESY OF PORSCHE

THE DIRTY

C

1978 SC Safari/1984 Rally Dakar

Porsche has long been a glutton for punishment. It has publicly pushed its cars to the limits at the world's most difficult and grueling events: the 24 Hours of Le Mans, Carrera Panamericana, Targa Florio, and Rallye Monte Carlo.

The Safari Rally and the Paris-Dakar Rally are something else entirely, though. The Safari ran for 3000 miles through the inhospitable terrain of East Africa. And the Paris-Dakar was a three-week-long epic that saw hundreds of competitors in cars, SUVs, trucks, and on motorcycles crossing continents in a true test of durability, speed, and endurance.

For the 1978 running of the Safari Rally, Porsche prepared two Martini-sponsored 911 SC 3.0s by raising the ride height, fitting underbody protection, and mounting a row of Cibié lights behind a tubular brush guard. A submerged rock damaged one of the Porches while it was leading the race, and the team finished a respectable second and fourth place.

Six years later, Porsche would present another ground-breaking dirt racer at the 1984 Paris-Dakar race. What appeared to be a jacked-up 911 was actually a heavily modified car, built specifically for the event, called the 953. It had a manually controlled four-wheel-drive system and upgraded suspension, yet weight savings from a stripped interior kept it below 2700 pounds. And it put out 225 hp from its 3.2-liter flat-six.

It dominated, taking first place overall. It also started a trend. The 953 was the first sports car to win Paris-Dakar, and other manufacturers started entering modified sports cars soon after. Even Porsche saw more opportunity, replacing the 953 in 1985 with the ultra-advanced 959.

For a car that only raced once, the 953 had an outsized impact on the 911. Many of the parts developed for the 953 were further refined for the 959. It was a Carrera 4 years before Porsche ever considered adding an all-wheel-drive model to the 911 lineup. And it made people want to take the 911 off road.

Every modified 911 with rally lights, knobby tires, and off-roading pretensions can trace its roots to the SC Safari and the 953. Like sports-car racer Leh Keen's side hustle, the Keen Project. While Keen doesn't add all-wheel drive to older 911s, he creates cars that are as happy off-road as on. They revive some of the most unusual, and dirtiest, custom 911s. As an added benefit, they also turn speed bumps into opportunities to get a little air on a daily basis. —TRAVIS OKULSKI

THE GODFATHER

OF PRO TOURING

HOT ROD

CAMAROS AND

A SENIOR GM

ENGINEER WALK

INTO A BAR.

THEY'RE BOTH MARK STIELOW.

A

BY **LAWRENCE ULRICH**

PHOTOGRAPHS BY **MARK URBANO**

MUSCLE-CAR loyalty runs bone deep. Throughout the industrial Midwest, it's forged early, in families whose livelihoods depend on a healthy domestic car industry. Before the squalling infant knows it, his umbilical cord is in a neat Chevy bowtie. Or Pops may hover over the crib, repeating, "Say Mopar. MO-paar." The factory die has been cast. Matchboxes and Revell models follow. Dinner-table discussions leave little room for dissent: Brand X will win the race and rescue the planet. Brand Y is shit, best left to perverts or junkies. Now take out the garbage, and grab me a beer.

Mark Stielow knows this. The Missouri product and engineer—now director of GM Motorsports Competition Engineering—built his reputation by creating some of the world's fastest, most fantastical muscle cars. But there's a skeleton in his Chevy-wardrobed closet: The GM lifer, the Obi-Wan of the fabled '69 Camaro and the Pro Touring movement, was once a Ford man.

Stielow confesses this in a shop called Sled Alley Hot Rods located in Detroit's east-side suburbs. That's where his latest, decidedly bitchin' Camaro has been taking shape over two years.

"I grew up in a Ford family, and that's all I had until I went to GM: '69 and '70 Mustang Boss 302s, '71 Mach 1, just a ton of 'em," Stielow says. That included the '66 Mustang fastback he drove to his first day as a GM intern 33 years ago.

Here at Sled Alley, just a few stoplight races from the Tech Center where Stielow started his GM career, the man resembles a technical drawing of a Detroit engineer. He's got a problem-solver's manner, frameless specs, and brown hair just a few millimeters beyond buzzcut. The self-described "punk kid from Missouri" says he dreamed of working for Ford and didn't particularly like Camaros. But only Caterpillar and GM offered jobs to the University of Missouri-Rolla student.

"I decided I needed to get a Chevrolet," he says, and he let a buyer drive off with his Mustang and a garage full of Ford parts. But Corvettes were too expensive, Chevelles too big. "Just-right" was a white, rust-free '69 Camaro RS with 50,000 miles, for which Stielow paid $3800. Cue the lightning bolt, with small-block Chevy thunder.

"Suddenly I got it: This is why everyone hopped-up old, crappy Camaros," he said. "Everything just worked better than the Fords: easier to work on, the engines made big power easier."

The rest is muscle-car history that's still unfolding, from Chevy showrooms to grassroots shops like Sled Alley, where owner and fabricator extraordinaire Matt Gurjack is one of Stielow's many friends and colleagues in Pro Touring. Another is Detroit Speed—in Mooresville, North Carolina—where Kyle Tucker, Stielow's former college classmate and fellow GM engineer, builds slick components to time-warp vintage Camaros, Firebirds and other models into 1-g-cornering marvels.

So what's a Pro Touring car? In the tangled genealogy of hot rods, with more subgenres than EDM, a Pro Touring car is a restomod's high-net-worth cousin. Both masquerade as vintage beauties, tucking modern parts below half-century-old skins. But a PT car has enough mechanical massaging—engine, chassis, suspension, brakes, tires—to hang with or humble late-model sports and muscle cars. Stielow himself coined the term Pro Touring in 1999 and it stuck.

Like many youngsters before him, Stielow learned the Camaro's limitations the hard way, wrecking two while balancing college with supporting GM's showroom-stock racing. Between GM blueprints of the prized "tri-year" Camaros, built from 1967 to 1969—from the Summer of Love to Altamont—and his own engineering skills, he cobbled together the first PT car in his Royal Oak, Michigan, garage. This triple-threat (track, strip, and street) was later dubbed "Tri-Tip." He and Tucker drove that '69 Camaro in the 1993 One Lap of America, the *Car and Driver* event that combined road courses, autocross, drag runs, and sleep-deprived interstate miles, the latter spawning the pragmatic overdrive gears found on all 17 first-gen Camaros he's built. This first Frankenstein monster—or Mr. Potato Head, as Stielow dubs his cars' assortment of parts—coaxed 475 horses from Chevy's biggest small-block, a 400-cubic-incher with fuel injection.

"You have to remember, in 1993 even a Corvette had 300 horsepower and was pretty anemic," Stielow says. "You show up with a 475-hp Camaro, with full performance mods, and it was pretty revolutionary."

That first One Lap ended with an uncooperative fuel line and engine-bay fire at Michigan International Speedway. Undaunted, Stielow returned to score One Lap class wins in 1994 and 1995. The Frigidaire-white Chevy took a remarkable fourth overall in '95, behind ringers like pro racer David Murray in the winning Porsche 911 Turbo.

"SUDDENLY I GOT IT: THIS IS WHY EVERYONE HOPPED UP OLD CAMAROS. EVERYTHING JUST WORKED BETTER THAN THE FORDS."

RIGHT: ROBERT MCGAFFIN/MCGAFFIN PHOTOGRAPHY

B

C

D

A. (Previous page) Apex, a beast of a Camaro that wraps a 950-hp supercharged small-block V-8 in a white 1969 body.

B. Mark Stielow became director of GM Motorsports Competition Engineering in 2020. A trailblazing builder of extreme performance classic Camaros, Stielow grew up a Ford guy.

C. This CNC-machined engine-code badge is a dead ringer for the old-school Chevrolet displacement emblems.

D. Each Stielow build is entirely unique, but they all share a common ethos and aesthetic. Here are five of his earlier projects.

IT SOUNDS

LIKE A

HIBERNATING

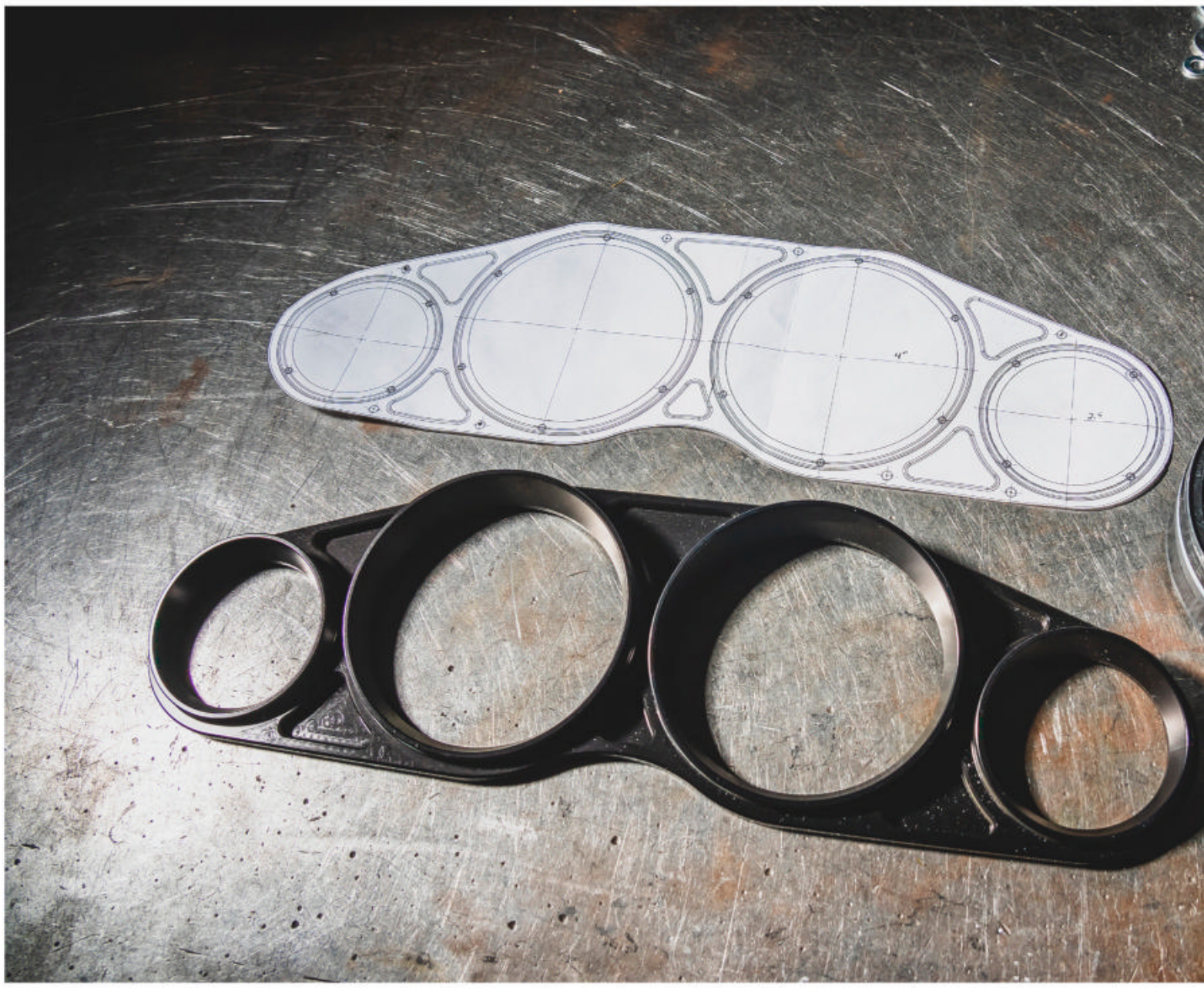
BEAR THAT

DREAMS

SOMEONE WILL

POKE IT,

SO IT CAN BITE THEIR ARM OFF.



A

B

A. Stielow ditches the '69 Camaro's weird square instrument binnacles in favor of a flat dash insert, a custom gauge surround, and Dakota Digital instruments.
B. This supercharged, dry-sump V-8 is similar to a Corvette ZR1's LT5 engine, except Apex's version is hot-rodded nearly 1000-hp. Big Brembo brakes are often part of a Stielow build.

The word was out. Stielow's dream machines began hogging the covers of hot-rod mags like Cindy Crawford on *Vogue*. Power and capability kept growing, lap times shrinking. His '69 Camaro, Red Devil, had a 760-hp supercharged 7.0-liter V-8 that was a mashup of LS7 and LS9 parts, plus Corvette-based ABS, a first in a Stielow car. Red Devil cemented his legacy, winning the Optima Ultimate Street Car Invitational in 2010 and becoming immortalized in *Gran Turismo 6*.

"You can crash my car, hit 'reset' and not have to rebuild it," Stielow says.

Disciples began building their own PT cars, inspired to climb toward Stielow's Olympian standards. His trailblazing advice is collected in the how-to book, Pro Touring Engineered Performance. That blue-ribbon goal is not for the backyard mechanic on a Pabst budget. Farm it out, and Gurjack figures a good 1500 hours of labor. At $60 an hour, that's $90,000, before the first race-built engine or catalog wish list is tallied. Compatible donor cars are scarce and expensive, despite Chevy having built 243,085 Camaros in '69 alone. These were throwaway cars, often disposed of by rust, abuse, or the first telephone pole a teenager could wrap one around. Stielow does a quick phone search of '69s for sale, which range from $26,000—"for a pretty roach-y car," he cautions—to $132,000 for a primo Z/28.

One completed specimen rests here at Sled Alley: a '67 Camaro built by Stielow's friend Gordon Rojewski, its patinaed, Marina Blue surface disguising a 680-hp Chevy LS7.

BUT THE STAR is Stielow's latest ingenue, set to debut at the COVID-delayed Barrett-Jackson extravaganza in Scottsdale, Arizona. It's called Apex, a fitting name for a curve predator that should corner at about 1.15 g's. The museum-level '69 body is white, again, a color that barely enters the flame-licked hellscapes of most hot-rod fans. Stielow just likes white cars.

Apex is propelled by an upgraded version of the Corvette ZR1's already absurdly powerful supercharged LT5 V-8. An unmodified crate version will set you back about $19,000. Obviously, the standard 755 horses were not enough.

"Being hot-rod guys, you've got to stand on the motor a little," Stielow says, a twinkle in his eye.

Accordingly, the dry-sump V-8 makes 915 hp today, en route to 950. Stielow upgraded virtually every part in the engine, including a Katech CNC-machined head and dry-sump oil pump, a five-percent overdrive pulley, COMP camshaft, forged pistons, Carrillo connecting rods, and tri-metal Clevite bearings replacing the ZR1's polymer units. A Tremec six-speed manual, modified to withstand 850 lb-ft of torque, connects to a carbon-fiber driveshaft (another Stielow first) and a 9-inch Ford rear axle. Detroit Speed supplied the hydroformed chassis subframes and the quad-link rear suspension, as well as the rack-and-pinion steering that replaced a recirculating-ball unit whose basic design dates to 1940 in GM cars. Adjustable QA1 coil-overs replace equally antiquated rear leaf springs.

The body is mini-tubbed to allow fattened, 18-inch Finspeed wheels and BF Goodrich g-Force Rival S tires, whose 200 treadwear rating meets spec for SCCA and PT competitions. A bespoke carbon-fiber hood makes room for the tall engine while maintaining the factory hoodline, but adds heat-extracting louvers.

Stielow figures Apex is 80-percent complete, and he and Gurjack rushed to prep for this morning's inaugural start-up. Stielow leans through the driver's window and twists the ignition. The ultimate sleeper Camaro springs to life, its V-8—already 107-hp stronger than a Dodge Demon's—echoing off cinder-block walls before settling into a docile idle. It sounds like a hibernating bear that dreams someone will poke it so it can bite their arm off.

And oh, will it bite: Stielow's calculations show Apex barreling to 60 mph in about 2.9 seconds and a quarter-mile in roughly 10.5 at nearly 140 mph, with a 203-mph top speed. He's been talking with Toyota about testing Apex at its Ohio test track to crack the 200-mph barrier. Power, suspension, steering: check. But how about aero, downforce, stability?

"Hang on," he says with a hearty laugh. "These cars start getting really dancey above 170 mph." Fortunately, Stielow can handle it. He's a notorious hot shoe, known to beat even top pros in the myriad Chevys and other GM models he's developed.

AMONG THE CAR'S wonders of ingenuity and craftsmanship, a simple one stands out: A beautifully CNC-machined "LT5" fender badge that's a dead ringer for the vintage Chevy's engine-displacement logo. It's the kind of attention to

detail that characterizes a certain Porsche restoration shop in California.

"I wouldn't mind being known as the Singer of the '69 Camaro," he says of his obsessive, single-model pursuits. "I don't watch sports; this is the only hobby I've got,"—aside from racing, including in Miatas that helped break some bad habits developed in superpowered rides.

Singer may work with fancier German clay, but consider this: Singer's Rob Dickinson is a former rock star, but he has never worked for Porsche. He's neither an engineer nor a development driver. And Porsche views Singer's work with an icy glare. In contrast, Stielow is the ultimate inside man, with his own in-house transporter to bounce between today's GM and that of yesteryear. He has direct access to modern GM performance secrets and technology—hell, he helped develop them—and he's run hundreds of Nürburgring laps. He can cite several cross-pollinations where his PT learnings have gone into today's Camaros, and vice versa.

It's hard to think of any direct industry parallels. Imagine Zora Arkus-Duntov, the godfather of the Corvette, building one-off Vettes to his tastes? Unlike many peers, Stielow has built precious few cars for customers, though five of his builds reside in a vast muscle-car collection in Des Moines. For these deeply personal projects, Stielow sees valuations as largely missing the point, though his cars have fetched up to $180,000 at auction.

Also remarkable is how Stielow helped rehabilitate the image and performance of not just vintage Camaros, but current models, cars that helped light the fuse of today's celebrated (and sometimes criticized) horsepower wars and usher in a second Golden Age of performance. Several gratuitously powered showroom models that bear Stielow's fingerprints have thrown down a classic Woodward Avenue challenge to rivals foreign and domestic.

During the reborn Camaro's long streak of outselling the Mustang, Stielow and Co. (including former Camaro boss, Al Oppenheiser, who is now working on EVs now) added the track-monster, 505-hp track monster Z/28 for 2014. Ford didn't have anything like it. The 526-hp Mustang Shelby GT350 was the direct response. Chevy one-upped again with the 650-hp ZL1 and ZL1 1LE, the latter with its supercar-baiting 'Ring times. Ford's riposte was the 760-hp Shelby GT500, the most powerful street Ford in history. It's the Sixties all over again. These Chevys and Fords have taken the PT ethos mainstream, transforming the very definition of muscle cars. And while Mopar and road courses remain a queasy mix (Viper aside), Dodge's Hellcats and Demon made deja-vu statements of dominance on the strip.

MOST OF THE Stielow-fettled factory GM monsters sound suspiciously like PT cars, mixing-and-matching GM's finest off-the-shelf technologies—Corvette engines, magnetic suspensions, fancy e-diffs—to achieve objective performance that silences the scoffers. In skilled hands, and with hot-rod names like Mayhem and Jackass, Stielow's PT builds will do the same.

"I was out with a guy in a new 911 GT3, and I was all over him like a cheap suit," Stielow says of a YouTube-famous track day at GingerMan, the rough-hewn circuit in Michigan where he often tests. The GT3 driver refused to point Stielow by and so finally got chopped and passed in return. Carrera cuckolded, as its driver headed off to whine to track officials.

"Some people get irritated, other people think it's really cool," Stielow says of his giant-slayers.

These links between grassroots and showroom muscle are bigger than one man. The burnt-rubber lines connect hundreds of engineers and executives who think and dream like Stielow. They toil for the Detroit Three, scheming to get higher-ups to greenlight their nutty ideas. The lines extend to every Sled Alley-style shop and home garage from the Midwest to the NASCAR belt to California.

Those Chevys, muscle Caddys, Mustangs, and Mopars—yes, even the mid-engine Corvette—have something else in common. They're American underdogs. They'll remain underdogs no matter how much horsepower they amass, how many fancy-pants imports they beat, or how costly they become. It's their lot in life, their part of the story, the David-Rocky-Rudy myth that made *Ford v Ferrari* so recognizable and relatable, even to audiences who'd barely heard of Le Mans. Those blue-collar cars, and their creators, wouldn't have it any other way. And that's what's so awesome about Stielow and Pro Touring: It's the continuation of an old, beloved story.

"Growing up, I always dreamed of writing some small chapter of auto history," Stielow says. "Now I've done that, personally and professionally. And that's pretty cool."

STIELOW SEES VALUATIONS AS LARGELY MISSING THE POINT, THOUGH HIS CARS HAVE FETCHED UP TO $180,000 AT AUCTION.

A

B

A. The trusty Tremec six-speed manual is stout, but still needs upgrades to handle Stielow's 950 hp.
B. In order to accommodate a new four-link rear suspension and wide 18-inch wheels, Stielow sacrifices some of the trunk space an owner would rarely use.

Forward to the Past

In one golden moment, the right designer joined the right automaker in the right economic period to

Back to the Future

PHOTOGRAPHS COURTESY OF NISSAN

build a run of nostalgic masterpieces.

BY **BRENDAN MCALEER**

Excitement thrummed through the crowd around the Nissan booth at the 1985 Tokyo motor show.

As the throng pressed close, you could hear two phrases: kawaii—"cute," and hoshii—"I want it." Nearby, a state-of-the-art, mid-engine sports-car concept called the MID4 sat overlooked. Instead, people had fallen in love with a 51-hp compact.

That little car was the Be-1, and it was a stroke of genius. Beneath its skin lay the mechanical underpinnings of the deeply ordinary Nissan March, a utilitarian hatchback with boxy lines typical of the era.

However, instead of a salaryman's suit, the Be-1 was draped in a postmodern blend of Austin, Simca, Fiat, and perhaps even Renault. It wasn't a direct copy or tribute to a particular car, but one designer's translation of fashionable nostalgia into a desirable consumer product. It would be the first of four limited-edition vehicles falling under the Pike Factory designation, tiny concept cars brought to life in the peak optimism of the Japanese economic bubble.

The Be-1 was created as part of a design competition within Nissan to make the March a little more exciting to the general public. The March's marketplace rival, the quirky Honda City, was selling well and offered delightful options like the Motocompo, a 50 cc scooter that could fold into the City's trunk.

Nissan produced four redesign proposals of the March: A, B-1, B-2, and C. Three of them retained the strong, straight lines dictated by typical manufacturing processes of the time. The B-1 looked like it came from an entirely different planet. The name was later adapted to Be-1, with the implied meaning of "be unique."

Certainly, the car's creator could hardly have had a more singular career. Born immediately after World War II in Kyoto, Japan's ancient former capital city, Naoki Sakai finished art school and found his way to San Francisco in the Sixties. There he fused traditional Japanese irezumi tattoo designs with flowing silk fabrics to create a ludicrously profitable enterprise selling custom-printed T-shirts. In a 2007 interview with the *Japan Times*, he claimed to have been making $300,000 a month at the time—and spending all of it.

Now in his early seventies, Sakai has been married five times and is still designing from his studio in Shinagawa City, Tokyo. An example of his limited-edition Olympus O-Product camera is part of the permanent collection at the San Francisco Museum of Modern Art, and his Water Design studio has had hits in everything from furniture to mobile phones. Most of that success has come from having an outsider's perspective.

"When I was involved in the Be-1 design concept work, I wasn't interested in cars at the time and didn't have a driver's license," Sakai says through a translator. "However, fashion design and car design looked very similar. Because the designer thought that car design was simply to cover the chassis package made by the engineer."

He continues: "I felt uncomfortable that car designers are highly elite and only look at the future and evolution of cars. Fashion design goes back and forth freely. We put those ideas into car design."

Sakai came to the Be-1 project as a freelance designer, separate from Nissan's main design studios. He remained a consultant throughout the company's Pike Factory experiment in low-volume, nostalgia-tinged car making. To the ordinarily buttoned-down corporate hierarchy of Japan, his ideas must have been shocking. Indeed, in past interviews, he admits that he must have been like an alien to them. Happily, some young designers from Nissan bought into Sakai's vision, acting as a bridge between the conceptual and the concrete.

"I was supported by a few young Nissan designers who understood my ideas well. In that sense, we were able to achieve nearly 100 percent."

Nissan had an audience clamoring to buy the Be-1 and a short window to satisfy that appetite. As this would be a low-volume production, Nissan decided that plastic resin panels were appropriate for most of the front bodywork, allowing for a rounder look than the stamped steel used in the March.

More importantly, Nissan managed to find suppliers willing to commit to a run of interior parts that fit the Be-1's retro theme. By January of 1987, the Be-1 was ready for sale, in roughly half the time it would normally take a concept to reach production.

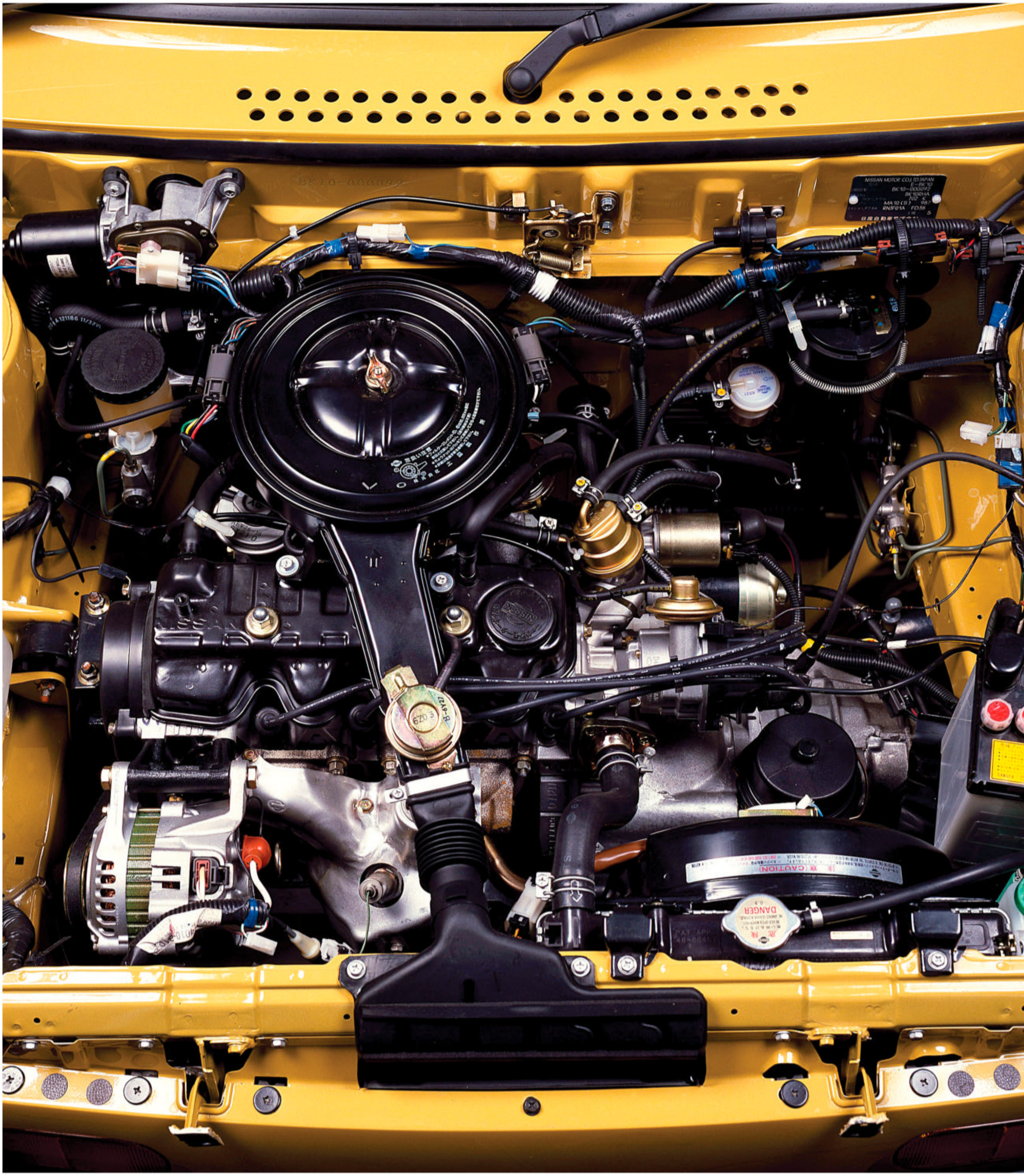
A

A. Naoki Sakai had penned everything but cars until Nissan roped him into a design competition. We're glad they did.
B. Prototypes A, B-2, and C stuck to the *RoboCop* aesthetic of the time.
C. Sakai's B-1 prototype, a daisy yellow ball of sunshine against its drab counterparts. The design still feels nostalgic, but somehow modern as well.

LEFT: COURTESY OF WATER DESIGN

B

C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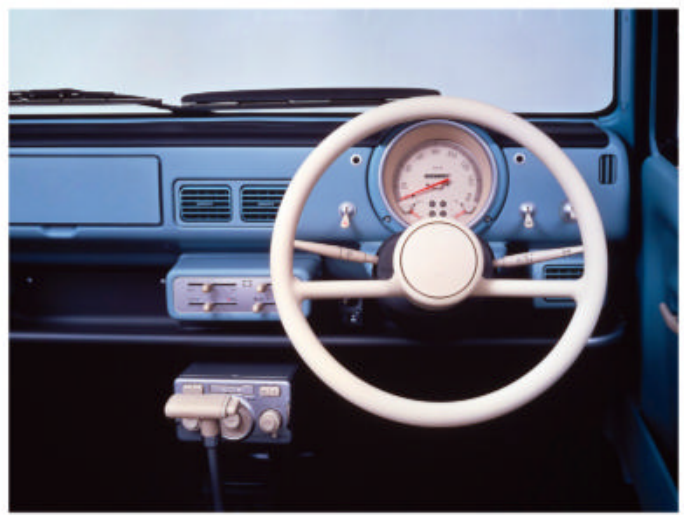


B

A. How do you make a 51-horse four-cylinder exciting? Cover it up with the Be-1's funky style.
B. Vaguely Jeep-like, vaguely Soviet-style, the Pao's design mixed rugged pragmatism with Pikachu cuteness.

Nothing about the Be-1's performance was any more exciting than the mechanically identical March. The aforementioned 51 hp came from a 987 cc, eight-valve four-cylinder engine. Buyers could choose between a five-speed manual or a three-speed automatic transmission. However, curb weight was below 1500 pounds, and the Be-1 was blessed with both a small footprint and a tight turning circle. It was cool-looking and practical, and people went nuts for it.

But you couldn't just buy one. Production of the Be-1 was limited to just 10,000, and demand far outstripped supply. Nissan's response was to arrange a lottery for the cars. Prospective buyers would apply at a specialist Nissan dealership, and the lucky ones would be allowed to purchase the car. The scarcity made the Be-1 one of the most desirable cars on Japanese roads. The mania even extended to a specialty Be-1 shop located in the trendy Aoyama neighborhood of Tokyo.

Pike Factory was named after a medieval foot soldier's long weapon, conveying the idea of "the tip of the spear." Just one problem: The factory didn't actually exist. Sakai's Water Design group handled the concepts, and Nissan tapped business partner Takata Kogyo to hand-assemble the cars—the same Takata that ran into trouble years later with faulty airbags. Some of the Pike Factory cars were also built at the Aichi Machine Industry plant.

The fantasy didn't matter. If anything, it was the point. Given the success of the Be-1, Nissan was only too happy to green-light further Pike Factory cars. The next two to arrive, in 1989, were the rugged-looking Pao and the cheerful, useful S-Cargo.

According to Sakai, the Pao was inspired by the idea behind the fashion brand Banana Republic, a safari lifestyle for everyday. Again, underpinnings were from the March, with the Pao dressed up in Jeep-like exposed door hinges, fold-up rear windows, and a split tailgate.

A marketing video for the car features a digitized Pao driving around Tokyo, a semi-psychedelic animation of the word Pao, several minutes of synthesized voices singing "Pao," and a man playing a ukulele in a barber's chair. The brochure

A. A pair of absurdist ads for the Pao. We'll have a truckload of whatever Nissan's ad team was taking.
B. Yes, that's a dinosaur egg and some pterodactyls. No, this doesn't make sense.

A

B

A

B

A. Has there ever been a better or more playful vehicle name than S-Cargo?
B. Every Pike Factory car had an interior that was basic, but never condescending in its simplicity.

featured the Pao in a number of prehistoric backdrops, usually surrounded by dinosaurs.

The S-Cargo was even weirder, if a bit more practical. This time, power was up thanks to a workhorse 1.5-liter out of the Sunny. Essentially a re-imagining of the Citroën 2CV Fourgonnette, complete with a French-inspired single-spoke steering wheel, the S-Cargo's visual puns extended to snail-themed floor mats and bugeye headlights. There was also a removable dashboard-mounted sushi tray and an enormous retractable canvas roof.

As a delivery van that could double as a company's eye-catching rolling billboard, the S-Cargo was really quite a clever product. It's also as large, and as silly, as the Pike Factory cars ever got.

By 1991, the world was about to change. The Japanese real-estate and stock-market booms had reached their apogee, and a golden age of automobile design was about to end, albeit with echoes of greatness to come, like the fourth-generation Toyota Supra and twin-turbo FD Mazda RX-7.

At Nissan, the success of the Pike Factory cars had caused a ripple effect. Designer Jun Shimizu had become head of the design division in 1987 and found himself freed by the triumphant successes of the Be-1 and Pao. He faced the challenge of creating a worthy successor. It would be the most audacious of the Pike Factory cars, but according to Shimizu, early design submissions were better suited to a museum than real-world driving.

"In April [of 1989], I gathered the team, expressed my thoughts, and suggested a different direction, a modernization of the Datsun Roadster of the Thirties. I imagined a 19th-century woman sitting in the car, with a parasol . . . possibly getting ready to take a trip. From there, I sketched a side profile in my sketchbook and set the team to task."

By June, the concept was finalized, needing only a name. One of the design team suggested a group visit to the nearby Atsugi Cultural Center to watch a small production of Mozart's *The Marriage of Figaro*. The name stuck.

As with the other Pike Factory cars, the Figaro had only minimal badging to identify it as a Nis-

Buyers didn't care. They just wanted it. When asked where they'd drive their car, many answered, "Nowhere."

san. It featured perhaps the most retro look yet, with art-deco emblems, white-faced gauges, and interior switchgear that resembled 1950s Bakelite.

The oval grille and stunted proportions of the Figaro have been likened to everything from a Goggomobil to a Hillman Minx. Its true ancestor is the original Austin-based Datsun Fairlady of the 1950s, Nissan's first foray into building sports cars. Because of the weight of its hardtop-convertible roof and automatic-only gearbox, the decision was made to give the Figaro a turbocharged 1.0-liter engine, which bumped power to 75 hp. But, as with the first Fairlady, the Figaro was more about image than performance.

Buyers didn't care. They just wanted it. According to a 1991 article from the design magazine *Blueprint*, a majority of people on the Figaro waiting list, when asked where they would drive their car, answered, "Nowhere." Like most of the other Pike Factory cars, the Figaro was more toy than actual transportation, particularly in Tokyo, a city with a comprehensive public-transit system that makes driving an unnecessary inconvenience.

Figaro sales began, again with a lottery, on Valentine's Day 1991. The cars cost 1.8 million Yen—adjusted for inflation, that's about the equivalent of a basic Mazda MX-5 Miata today. Total production was limited to just 20,000 vehicles.

Nissan could have sold more, but neither the Figaro nor any of the other Pike Factory cars were profitable. As a marketing exercise, they showed daring and raised the profile of the brand. As a long-term product line, the Pike Factory cars couldn't weather the coming storm.

The Japanese bubble crashed in late 1991, and that was the end of Pike Factory. The quirky Rasheen SUV was also designed by Sakai and built by Takata, but it was more a precursor to the boxy Nissan X-Trail than a true Pike car. Funkier products, like the later Juke and Cube, showed that Nissan had internalized the lessons learned with the Pike Factory experiment.

The four unconventional models also enjoyed a second renaissance in the gray market, with the Figaro especially popular in the U.K. Notable Figaro owners include Eric Clapton and Liam Gallagher, with a Figaro even featured on the cover of a live Oasis album, *Standing in Japan*, recorded in Yokohama in 2000. They're interesting little cars to own and drive, with workaday mechanicals but endless charm. So novel was the retro concept to us that in 1993, after getting our first drive of a Figaro, we felt compelled to construct an analogy to explain the concept: Think of the Figaro as a house built to modern codes but in the French Provincial or art deco style. The Pike cars helped inspire the retro craze that swept through European and American automotive design studios for a decade afterward. Their influence was so great, no analogy is needed to explain the concept today.

And Nissan enthusiasts can draw a direct line from the excitement and upheaval of the Be-1 to that twin-turbo 1990s juggernaut, the 300ZX.

"Nissan regained its vitality after the success of the Be-1 at the Tokyo Motor Show in the fall of 1985, and in 1986 President Kume and Vice President Sonoda led the company under the slogan 'Change the Flow' to create a more vibrant Nissan," Shimizu said.

"This created an environment in which designers could come up with design ideas freely, without interference from outside the division. The 300ZX is considered to have been a big hit that took advantage of this trend."

Alfonso Albaisa, Nissan's current senior vice president of design, has said the 300ZX stunned him on his first trip to Japan. His team tried to incorporate that seamless feel into their latest concept car, the 240Z-inspired Z Proto. As with the Pike Factory cars, the Z Proto is intended to be a blend of nostalgia and modernity.

It's a memory that never was. But then, the Pike Factory cars really did exist, as cheerfully timeless as Studio Ghibli characters, little jewels of optimism from a time when anything was possible in the Japanese automotive industry. Kawaii and hoshii, cute and desirable. In an age of almost universally aggressive design, perhaps we need to once again glance backwards to look forward.

A

A. Art-deco emblems and Fifties design cues inform the Figaro's aesthetic.
B. Jun Shimizu imagined a woman with a parasol, then penned the Figaro's basic shape. Fitting.

B

SIAS

FROM HORSE TRAILERS TO FAKE MOBILE TV PRODUCTION STUDIOS, A PEEK INSIDE THE WORLD OF WEED-SMUGGLING VEHICLE CUSTOMIZERS.

A

ILLUSTRATIONS BY **NICOLE RIFKIN**

BUR

HIND

BY **A.J. BAIME**

FLYING AT LOW ALTITUDE in a small airplane over the city of Puebla, south of Mexico City, Richard Stratton and his associates spotted their truck. They were smugglers. The truck was loaded with about 1.5 tons of cannabis, and it had disappeared off the street. So Stratton and his team took off in an airplane they owned to find it. "I had this guy named José watching the truck for me," Stratton recalls. "I told him, 'Whatever you do, do not leave this truck. Guard this truck.' So the guy goes home for the Christmas holiday, and when he gets back to Puebla, the truck is gone."

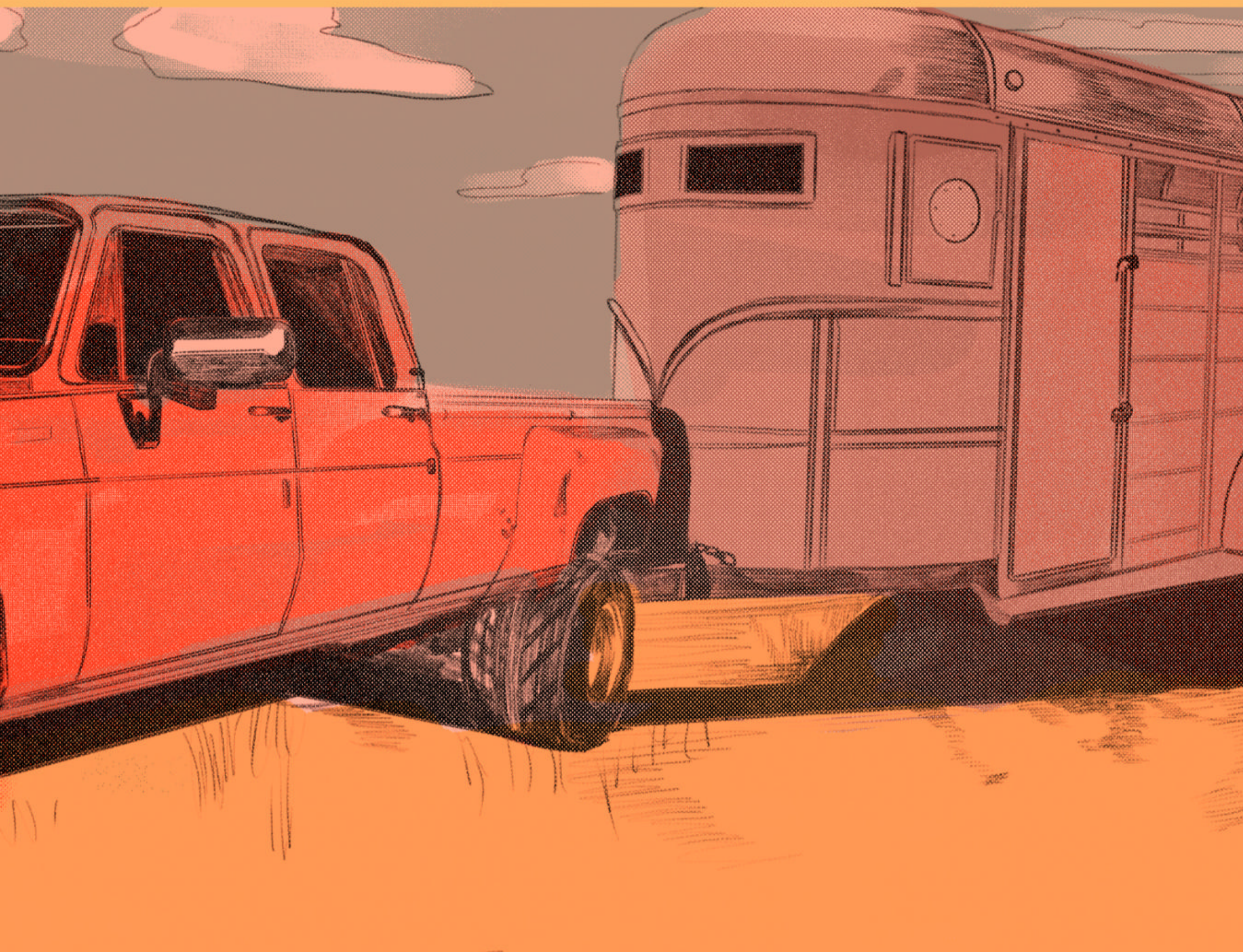
Now, from overhead, they spotted it. Which was great. Only problem? It was parked in the impound lot at a police station.

This was the late Seventies, the era of glittering disco balls and the so-called Hippie Mafia. The weed in the truck was hidden in a custom-built stash space, a false wall built into the front of the truck's cargo area. It was then filled with furniture Stratton had purchased as a decoy, so the vehicle looked like any medium-sized moving truck being put to good use.

"The police knew something was fishy, but they didn't know what," Stratton recalls. "We paid them off, got out of there, and we were over the American border the next day."

Stratton was, at the time, building his smuggling empire. He was also a writer with serious literary chops. He would have plenty of time to look back on his smuggling business, what went right and what went wrong. After he was busted in 1982 at the Sheraton Senator Hotel at LAX, Norman Mailer and Doris Kearns Goodwin testified on his behalf at his trial. Nevertheless, he spent eight years in federal penitentiaries.

"What people don't understand about the smuggling business is how, in a sense, simple it really is,"



says Stratton, today a Manhattan-based documentary filmmaker and author of a trilogy memoir called *Cannabis Americana: Remembrance of the War on Plants*. "It's all about taking product and moving it from Point A to Point B without being arrested. It is all about transportation."

Early on in his business, Stratton invested in an auto body shop in Lowell, Massachusetts. "We had a friend who needed help with money to start his business. So we supported him to buy a building, and he set up a legitimate body shop. But he had a side hustle. He built secret stash spaces into cars and trucks for us."

Stratton's fleet started out with six vehicles, all with custom-built stashes. He often preferred Chevy Suburbans, but his favorite smuggling vehicle was a 1968 International Harvester Travelall station wagon that he had fully restored. "It was beautiful, and it looked like a family vehicle so no one would

1978 GMC 3500 High Sierra “Dualie” pickup with horse trailer

ever suspect it,” he recalls. “It had these big heavy doors. You could take the door panels off, load up the doors, then put the panels back on. You could put 50 to 60 kilos of hash in there.” It was just like the Lincoln in *The French Connection*, only this wasn’t Hollywood. Stratton used that International wagon to travel back and forth over the Canadian border.

When he started in the Seventies, smuggling cannabis was a small-stakes game, considered by many as a victimless crime. (Stratton never dealt in any heavy drugs like cocaine.) But as Reagan’s “War on Drugs” arrived and his business grew, the stakes went through the roof. The game became all about how to imagine vehicles and how to customize vehicles to stay one step ahead of the law.

THE NEXT TIME you are driving on a highway, take a look around at all those Toyota Priuses and Audi A4s carrying commuters and soccer moms. “About two or three of every 50 vehicles you see on the highway are likely to be carrying illegal contraband,” says a retired Drug Enforcement Agency operative who spoke on the condition of anonymity. “There is no way to stop and search every car. On a good year, law enforcement will bust about 15 percent of what’s coming into this country. And what people don’t realize is that smugglers will always take the path of least resistance. Which means they are likely to be on the same highways as you are. I-80 across the country, I-5 up and down the West Coast, I-95 on the East Coast. The way the bigger operations see it is, if they lose a load, so what? To them that’s like paying taxes.”

The story goes back as far as the automobile itself. Since the early days, cars have been used by the underworld and the law in a constant battle of wits and weapons. During Prohibition in the Twenties and after, moonshiners hopped up their Fords

GMC was founded as a truck division of General Motors to lure buyers who needed real work trucks for gritty jobs. Richard Stratton’s line of work certainly qualified. He used his GMC pickup in the Seventies and Eighties to pull a trailer carrying more than just horses, going back and forth regularly from his farm in Maine to his sources in Texas and Mexico.

- Big crew cabs offered plenty of room for driver and passengers. The 3500’s High Sierra trim was top of the line.
- Stratton’s white German shepherd Karamazov sat in back, always along for the ride. Man’s best friend, except when he had to go to the bathroom.
- The heavy-duty “dualie” truck was perfect for towing a heavy load.
- Ingenious stash space built into the length of the horse trailer’s floor, waterproof to protect cannabis and/or money from horse urine.
- GM’s 454-cubic inch V-8 delivered plenty of oomph. A version of this engine was available in the Corvette as late as 1974.

1968 International Harvester Travelall

and Chevys and perfected dirt-road drifting techniques, hustling away from whistling sirens, carrying illegal loads of liquor. Al Capone's custom-built bulletproof 1928 Cadillac Town Sedan became, for car nerds at least, as legendary as Capone himself. (It was up for sale for $1 million, as recently as last year.) John Dillinger—the original "Public Enemy Number One"—reportedly wrote a letter to Henry Ford thanking him for building such a speedy car.

Through the generations, however, no criminal industry has invested as much creativity in vehicle customization as smuggling. To put this story together, we interviewed three former smugglers who have collectively spent 40 years in prison, all of whom now lead law-abiding, family-man lives.

Arguably the most common vehicle customization technique is the truck with the false wall. One of the biggest weed smugglers of the Eighties—who was also an IMSA champion back when the series was jokingly called the International Marijuana Smuggling Association—remembers how effective the false wall was for his operation.

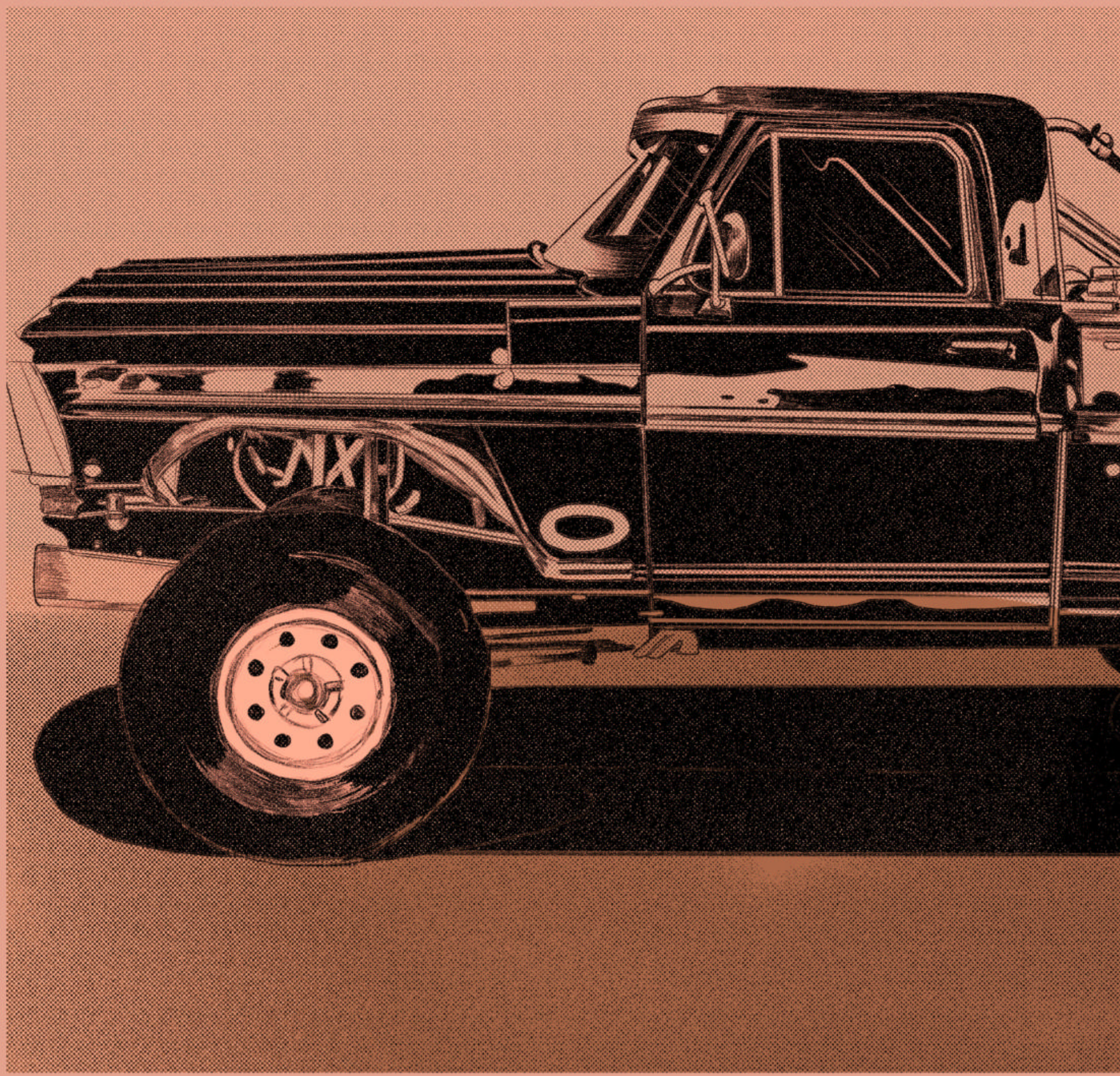
"We used tractor-trailers," he says. "Take a 48-foot semi, and you could create a stash space of several feet up front. Then block that off with a wall. We used to fill up the [trailer] after that with brand-new hot tubs, so if we got pulled over, and the cops opened up the back of the truck, all they would see would be a load of hot tubs straight up to the ceiling. They would not be able to even get to the third wall without a significant investment of time and heavy moving equipment." This smuggler also used vans loaded with two-by-fours. The boards at the top were standard length, ready for a cop to inspect. But at the bottom of the pile, weighted down by the ones on top, the boards were just 6 inches long, creating a stash space in the center of the vehicle.

None of that, however, can compete with the cleverness of Richard Stratton's most successful smuggling vehicle. "I always loved GMC dualie trucks," he says, "pickups with two sets of dual wheels in back and a crew cab." Using a 1978 GMC as a hauler, Stratton bought a horse trailer and built a fake floor into it, creating a large stash space. He would load the stash space with product and/or money, and put real live horses on top of it.

"The stash space had to be waterproof," he says, "because the horses would be pissing all over the floor." Meanwhile, the stink of manure helped cover the smell of cannabis. "No officer was going to pull us over, pull the horses out of the trailer, and search the thing. And even if they did, they wouldn't find anything. We lugged horses routinely over the Mexican border [and all the way] to New York City, which was then, and still is today, the biggest cannabis market in the world."

"I loved it because it looked like a car some old geezer would be driving," says former smuggler Richard Stratton of his International Harvester. The Travelall, built from 1953 to 1975 to compete with Chevy's Suburban, was a harbinger of the SUV wave to come, a truck ahead of its time. Stratton's had some special features.

- Heavy-duty shock absorbers made sure that the truck didn't sag when loaded up with hundreds of pounds of cannabis and money.
- Custom-built stash spaces in all four doors could hold many bricks of pressed Mexican marijuana.
- Two more stash spaces were custom-built under the back seat.
- A powerful stereo was key for long-distance drives. On heavy rotation: Bob Marley, Neil Young.
- Top of the line 345-cubic inch V-8. Reliability was imperative: A broken-down car attracts police attention.



Off-road racers created a whole new category of custom vehicles: Pre-runners, modified street trucks built to scout a desert race course ahead of the event. Retired smuggler "Bob" built his pre-runners with extra features to carry product and money deep into the desert where no cop car could ever follow.

- Full roll cage built into the interior, mounted on the F-150's frame.
- Prerunners often have extra gas tanks. This one's carried more than gasoline.
- Jerricans had water-proof stash spaces built in. If a cop picked one up, he could pour fuel out and have no idea what else might be inside.
- Four shoebox-sized stash spaces were welded into the frame, two on each side of the transmis-sion tunnel.
- Experienced off-road race driver at the wheel, ready for just about anything.

1985 Ford F-150 “Prerunner” off-road ass-kicker

THESE DAYS, technology has changed the way smugglers do their business and how the law combats their efforts. However, the most effective weapon the law has on its side has no lasers, nor computer chips. It has four legs and drools a lot. “If the cops had drug dogs when I was in business, I would have been screwed,” says “Bob,” a former Nevada drug smuggler who now lives in Chicago.

He specialized in building off-road smuggling vehicles modeled after the “pre-runner” trucks used by Baja 1000 competitors to scout the course before the race. “The first thing you needed to go into business was a good auto shop,” he recalls. “You needed to have grinders and plasma cutters and welders and the ability to fabricate out of raw steel. At the time, everyone in town knew me for building pre-runners as a hobby. So there was nothing weird about what I was doing. And there was a lot of off-road racing at the time in Nevada, which meant, for me, a steady flow of all the custom parts I needed.”

His most “badass” truck, Bob says, was based off of a 1985 Ford F-150 he built in 1998. “The first thing I did was take the whole thing apart, then rebuild it with long-travel suspension. I built a full 4130 chromoly cage and had all my tools on board so if I got stuck or broke down in the desert, I could fix the truck.” It had stash spaces all over it, including an extra gas tank and jerricans for fuel, all of which had stashes in them. “The stashes were waterproof,” he recalls, “so if the police picked up a jerrican, the can could actually pour out real fuel and the cop would never know there was a stash in the bottom of it.”

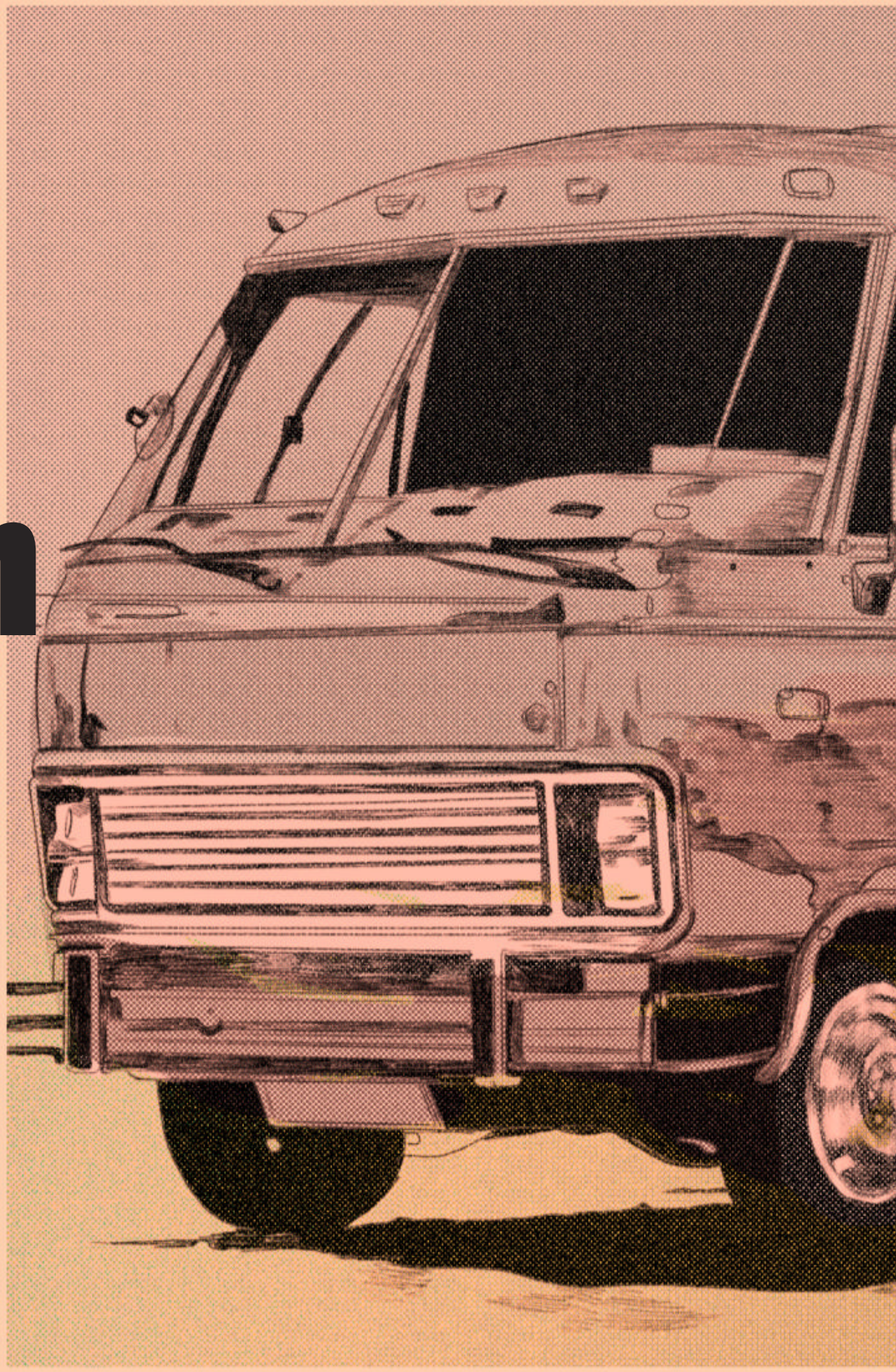
Why off-road vehicles? Bob lived in the middle of one of the biggest deserts in the world. Everything he held—product or money—he kept buried in holes deep in terrainless desert, only found by GPS coordinates (this was when GPS first became available to consumers). And, if he ever found himself in a police chase (which never happened), he could make a turn and head off into endless stretches of nothing, something no cop car could do. “Out in the desert,” he says, “that F-150 could outrun a helicopter.”

It all worked beautifully—until it didn’t. Bob did 6 ½ years in prison. Now a father of three, he still builds off-road trucks for fun. He admits that he still has buckets of money buried in Nevada, too. But he never wants to set foot in that state again.

IN THE NEVER-ENDING QUEST to find the perfect customized smuggling mobile, Richard Stratton remembers his all-time favorite.

“We were doing a lot of business at the Mexican border,” he recalls. This was the early Eighties. Business was good. “I was insane, buying boats and airplanes and 18-wheelers. We were looking

1979 Airstream Global Evangelism Television Machine



for motorhomes at the time that we could use to transport product up to New York. One day, one of my guys found a motorhome for sale, one of those beautiful silver Airstreams. It had room for four to sleep comfortably and a full kitchen. Only this one had been previously used by a company called Global Evangelism Television, as a traveling bible-belt TV production studio. It had a picture of a Bible and a television camera on the side and the company logo, which read in huge letters, GLOBAL EVANGELISM TELEVISION."

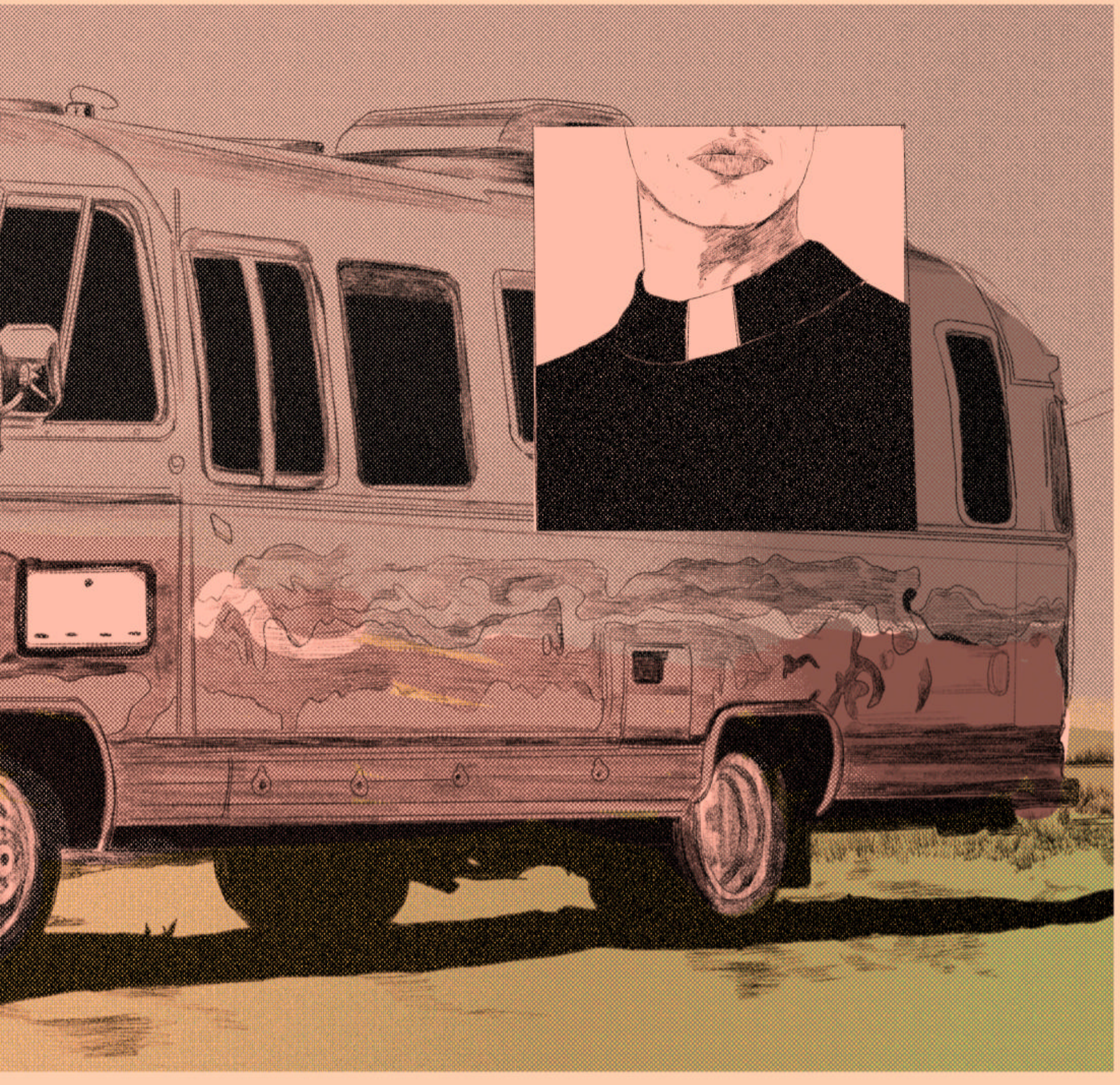
The guy who found the motorhome told Stratton, "It's in good shape, but we have to have it painted."

"No way!" said Stratton. "Leave it just like it is. It's perfect."

The rig cost about $20,000. Profit from a single trip to New York paid off that bill. "The guy who was driving it for me had this long beard," Stratton recalls. "He looked like a priest. His name was Foley, and we called him Father Foley. I practically lived on that thing for months." Stratton and his crew traveled back and forth from Texas to New York in their "Global Evangelism Television Machine" some 30 times, right up until the time that he was busted in 1982. By that time, the War on Drugs was becoming just that—a war. It turned out to be a good time to get out of the business anyway.

TODAY, THE ERA of the Hippie Mafia has given way to a new one of murderous cartels, innocent victims, and horrifying carnage. But in a sense, the smuggling strategy remains the same. It is still about creating imaginative vehicles to transport product from point A to point B without getting arrested. The smugglers' vehicle of choice has become the "clone car," painted to look like an ordinary commercial or government vehicle. Not long ago, police in Texas busted a fake U.S. Fish & Wildlife Service truck packing $1.6 million worth of cannabis, and a cloned Texas Department of Transportation truck carrying nearly a ton of marijuana. They even busted the driver of an 18-wheeler painted to look exactly like a U.S. Postal Service delivery truck. Law enforcement expects, in the future, to see the use of self-driving cars with no human element at all.

At the extreme, there are the Narco submariners, who got publicity recently after a vessel was busted with 12,000 pounds of cocaine last year. For every submarine that gets caught, how many make it through that we never hear about? "A cartel might put up a job listing on the dark web for a nautical engineer for $300,000 a year, for someone who can build submarines," says the DEA man. "The cartels today have unlimited resources. There is nothing they won't do. And no one they won't do it to."



Airstream started making travel trailers in the Thirties, but in the Seventies, the company launched its own line of motorhomes featuring the same Americana flavor. Ex-smuggler Richard Stratton found the perfect smuggling RV in Texas: a former mobile production studio for Global Evangelism Television.

- Four slept comfortably; so a crew could live on the road and continue working indefinitely.
- A full kitchen kept everyone fed and beers cold.
- Stratton had four custom built stash spaces tucked into the bottom of the vehicle.
- The smugglers left the signage from the previous owners on the motorhome—a perfect decoy.

GENIER

SMILE

COURTESY OF HOONIGAN

RATION

IANA

IN BUILDING THEIR DECADE-LONG MEDIA JUGGERNAUT, KEN BLOCK AND THE HOONIGANS CREATED THE ERA'S MOST INFLUENTIAL CUSTOM CARS.

PHOTOGRAPHS BY **MICHAEL KUNDE**

YOU

KNOW THE STYLE, even if you're not a fan of it. It's the chipmunk-quick car dressed up in a livery that looks like optical migraine aura, darting frantically, exhaust popping, tires smoking. Fast cuts. Now *slooooow* down for a close-up of the drifting car hanging a wheel off the edge of a dock or clipping a hot dog cart in the middle of the road. Then it's back to the quick cuts, the sideways jump, the donuts in a confined space, the reverse entry into a 180-degree turn. And always, flashes of sponsor logos. It's exhausting and exhilarating. And it could be none other than Gymkhana, Ken Block and the Hoonigan gang's juggernaut series of online thrill shows.

Over 12 years, these 11 videos have racked up more than half a billion views on YouTube. They made stars of rally driver and DC Shoes co-founder Block, and they've sold untold numbers of Hoonigan-branded stickers, flat-brim caps, hoodies and, well, you get the idea. Before Block got ahold of it, "gymkhana" referred to timed horse-riding demonstrations and autocross-style automotive events. The first Gymkhana film, from 2008, was barely more than a thrown-together obstacle course, with Block using a hot-rodded Subaru WRX STI to make cinematic gold on an abandoned airfield. As it turned out, drifting at triple-digit speeds enticed more than just car people. The concept quickly evolved, featuring increasingly more exotic venues. They turned into major productions.

The cars evolved, too. After the first two films, Block switched from Subaru to Ford, introducing the world to a cavalcade of Focuses and Fiestas turned into physics-defying works of art. Then the producers began fabricating dazzling one-offs like the 1400-hp, all-wheel-drive Hoonicorn, which wears a '65 Mustang body. It's fair to say the cars on the following pages are some of the best known and most influential custom cars of the last decade. Our guide in this retrospective is Hoonigan co-founder and "the man" behind the scenes of Block's videos, Brian Scotto. —BRIAN SILVESTRO

2006 SUBARU WRX STI

BY CRAWFORD PERFORMANCE

Scotto says: The first Gymkhana car had many lives. It started as a 2005 STI "blob eye" that was built for DC Shoes to participate in the Gumball 3000 rally, then the following year, after a "hawk eye" refresh, Ken and I campaigned it on One Lap of America. And then it was updated again for Gymkhana filming with a wide-body and more power. But, it was never a proper race car. It didn't have a roll cage, a fuel cell, or a fire suppression system. It was a street car. It still used a key to start. You can even hear the door chime in the video.

Gymkhana 1

- 530 hp at the wheels
- 525 lb-ft of torque
- 2.5-liter turbocharged flat-four / AWD


st
SUSPENSIONS
MONSTER
ENERGY
43
Block
EXEDY
MOTUL
RECARO
SUBARU
BFGoodrich
MONSTER
ENERGY
RECARO
MOTUL

2008 SUBARU WRX STI

BY CRAWFORD PERFORMANCE

Scotto says: To follow up the somewhat unexpected virality of the first Gymkhana, we decided we would need a specially built weapon. And since Subaru had just announced a new body style for the WRX, there was a reason to start fresh with a whole new car.

The 2008 Gymkhana Subaru WRX STI was the first purpose-built Gymkhana special. This was a full-blown race car built by Crawford Performance with a lot of rally technology stuffed in. At the time, this car seemed blisteringly fast with a sub-3-second 0-60 time.

Gymkhana 2

- 566 hp at the wheel
- 611 lb-ft of torque
- 2.65-liter turbo-charged flat-four /AWD

2011 FORD FIESTA "GYM3"

BY OLSBERGS MSE

Scotto says: This five-door Fiesta took the idea of a Gymkhana special to a new level. It was the only Fiesta or Focus to have a longitudinal engine and was the first car to use our signature custom handbrake. We even had the hubs made to fit our Volk TE37s from the Subaru. It was arguably the most precise car I've seen Ken drive. We were supposed to shoot in Detroit but red tape forced a move to the Autodromo in France. On the first stunt, a tire-compound mix-up sent the car into the wall. It took two trips to France to get it done.

Gymkhana 3

- 650 hp with restrictor plate (capable of 850)
- 660 lb-ft of torque
- 2.0-liter turbocharged inline-four / AWD

2014 FORD FIESTA ST RX43

BY M-SPORT

Scotto says: The RX43 was not a Gymkhana special. It was the new car that Hoonigan Racing Division and M-Sport developed to compete in Global Rallycross. At the time, M-Sport was only building stage-rally cars, but they took on this project as a test bed for their upcoming Rallycross platform. That's how Ken's racing number found its way into the chassis code. What was unique for the Gymkhana 8 video shot in Dubai, though, was the car's reflective livery. To make it pop, we mounted special lights to all of our primary cameras.

Gymkhana 6 & Gymkhana 8

- 600 hp
- 650 lb-ft
- 2.0-liter turbocharged inline-four / AWD

1965 FORD MUSTANG "HOONICORN"

BY RTR

Scotto says: We knew we'd struggle to find a better location than San Francisco from Gymkhana 5, so we focused on building the ultimate vehicle, and partnered with RTR to do so. Gymkhana 6 was slated be the Hoonicorn in LA, but build delays forced us to push it back to Gymkhana 7. The Hoonicorn was originally going to be a Ford Maverick, but we came to our senses. It ended up doing everything for the series we could imagine, including arguably starting the whole turbos-through-the-hood trend with the Hoonicorn V2 [shown].

Gymkhana 7 (Hoonicorn) & Gymkhana 10 (Hoonicorn V2)

- 845 hp; 1400 hp (V2)
- 720 lb-ft of torque, 1250 lb-ft (V2)
- 6.7-liter V-8 /AWD; 6.7-liter twin-turbocharged V-8 /AWD (V2)

1977 FORD F-150 "HOONITRUCK"

BY DETROIT SPEED

Scotto says: Gymkhana 10 needed something special, and we all knew that was a new Hoonicorn-esque build. But there was lots of argument on what exactly that would be. Most of us wanted to build a Fox-body Mustang [concept drawings were released in 2020]. We also discussed building an OJ-era Bronco. But when the initial digital renders came in, we all fell in love with the Dentside F-150. It looked so different from anything we had done before. And it was huge! So wide it wouldn't fit inside of a trailer with its wheels and flares on.

Gymkhana 10

- 914 hp
- 702 lb-ft of torque
- 3.5-liter twin-turbocharged V-6 / AWD

A SELECTION OF GYMKHANA B-SIDES

2011 FORD FIESTA HFHV
BY MONSTER WORLD RALLY TEAM

Gymkhana 4
- 600 hp
- 665 lb-ft of torque
- 2.0-liter turbocharged inline-four / AWD

HFHV stands for Hybrid Function Hoon Vehicle, but the hybrid part refers not to its propulsion system, but rather its purpose. It was built to handle Gymkhana drift work, but it manages rallycross and stage-rally competition equally well.

2016 FORD FOCUS RS RX
BY M-SPORT

Gymkhana 9 & 10
- 600 hp
- 660 lb-ft of torque
- 2.0-liter turbocharged inline-four / AWD

Thanks to Block's partnership with *Forza Horizon 3* for Gymkhana 9, you could drive the Focus RS RX in the racing game.

1991 FORD ESCORT COSWORTH "COSSIE"

Gymkhana 10
- 645 hp
- 527 lb-ft of torque
- 2.0-liter turbocharged inline-four / AWD

"Cossie" was built from a genuine Nineties Cosworth race car, modified with a more potent engine and a seven-speed sequential gearbox. Sadly, it burned to the ground during a New England rally in 2018.

2020 SUBARU WRX STI
BY VERMONT SPORTSCAR

Gymkhana 2020
- 826 hp
- 664 lb-ft of torque
- 2.3-liter turbocharged flat-four / AWD

Driven by Travis Pastrana, the new car has a power-to-weight ratio similar to that of a Bugatti Chiron. And, says Scotto, the Subaru has, "more canards than an RWB meet."

THE ART

A

A. “Distinctive” doesn’t begin to describe the Aston Martin Lagonda’s interior. How do you hide a modern stereo in here? Call Matt Figliola of Ai Design.

AT AI DESIGN, A KILLER CUSTOM SOUND SYSTEM CAN GO IN JUST ABOUT ANY RIDE.

OF NOISE

BY **BRETT BERK**

PHOTOGRAPHS BY **GRANT CORNETT**

M

MATT FIGLIOLA is trying to sort the electronics on an Aston Martin Lagonda. This is no small challenge. The Lagonda, an outrageous four-door wedge of hubristically ambitious Seventies futurism, was the first car with a purely digital dashboard, a technological overreach that nearly bankrupted the company. The one he's working on lacks the dreaded cathode-ray tube dash, and instead has the dreaded red LED matrix dash and an expansive smattering of disastrous touch-sensitive controls strewn around the cabin. "It's all malfunctioning and will need rebuilding," Figliola says. "And we will do some updating to the stereo for sure. This client almost always installs vintage McIntosh Car Audio in his cars. We have a small inventory that we service and keep for him."

Figliola is accustomed to disasters. He's been working on solving complex automotive audio

A

A. The Lagonda's knife-edged styling was shocking when it debuted, and time has hardly dulled it. Preserving the look while upgrading the capability was no small feat.

and electronic puzzles for decades, ever since he helped a high-school friend install speakers in his Pontiac Sunbird so they could better appreciate the wizardry of Rush and Styx on cassette. ("I liked disco, too," he adds.) He opened his shop, Ai Design, in suburban Westchester County, just north of New York City, nearly 30 years ago and has become one of the most gifted and well-reputed craftsmen in the aftermarket custom audio space, integrating five- and six-figure custom audio systems in new and vintage vehicles. Cars in his shop right now include a McLaren 720S, Nissan GT-R, Porsche 959, Chevrolet Chevelle, Audi RS4, and Toyota Land Cruiser.

Car audio is big business, and it's growing in importance for automakers. "We're seeing data from third-party research like Nielsen, and a certain demographic of people 18 to 24 are actually listening to music in their cars more than anywhere else," says Jonathan Pierce, senior research and development manager for Harman International, a sound engineering firm that supplies the car industry with stereo systems through a number of different high-end brands, including JBL, Mark Levinson, Infinity, and Harman Kardon. "That trend is growing, with more people choosing the automotive environment as their top location to listen to their favorite music."

The car is your means of transport, your mobile office, your pandemic sanctuary, and your personal avatar. It's also your living room tower-speaker symphony hall. And Figliola is the Leonard Bernstein of Tuckahoe, New York.

Early in the 2010s, Figliola saw his car audio business crater. "It was pretty dead for a while because the OEMs really took back the market," he says. Carmakers began implementing quality brand-name systems. But it has picked up again recently, for a variety of reasons. Algorithm-powered smartphone apps have created an easy-to-use, personalized platform that expands interest. Streaming—accompanied by higher quality Wi-Fi and enhanced cellular bandwidth—now allows near-universal access to a boundless and better-sounding library than the compressed MP3 files of yore. Finally, consumers have gotten savvier and wealthier. They want more.

"The digital-native generation got older where they're working and they can afford things," says Figliola. "And the idea of high-resolution streaming music has been out there for a few years, and it seems to be becoming a buzzword today." He adds that demand will increase further once 5G is more universally available and high-resolution Bluetooth audio is adopted.

Of course, hearing this quality output requires that you have a system that can properly process the input. "If you have a brand-new Porsche, for example, and you want to bring your high-res music into that car, it's not going to translate that way out the other end," Figliola says. "It's going to get knocked down because the stereo

is not actually capable of playing something at that resolution."

In order to create a system that can transmit this superior quality sound, and in order to properly tune the system for optimal in-car playback, Figliola and his team must do a few things. Carmakers add their own proprietarily tuned digital signal processors (DSP) to the mix. Figliola attacks this first, either bypassing it or modulating it so that he can control the virgin signal. "What we're trying to do is to remove the imposed equalization that the manufacturer puts in the car," Figliola says. "I call all of that 'the front end.'"

The hardware portion—speakers and amplifiers and cable—are, thus, the back end. "That's really where the magic is, and that's where you can influence things the most," Figliola says.

His general approach here is "to put as much speaker as I can into front positions, the doors and dash." Key to this strategy is optimizing the placement, something Figliola says OEMs can struggle with. "They put tweeters into the crotch of the windshield-dash area, and then they'll put a grille over that speaker that's not terribly transparent audio-wise," he says. "When they do that, they just put the most directional speaker in the worst position." (Pierce notes that components used by automakers must meet strict industry safety and longevity standards to which the aftermarket is not bound. "We have to make sure those speakers are going to last for ten years," he says.)

Figliola will instead install tweeters in areas that will provide "more access to the listener and a more unfettered location," meaning upright, exposed, and facing the occupants. This helps with the directionality and locatability of higher-frequency sound. He'll then prioritize the installation of a really strong mid-bass woofer, typically in the front door, which helps pull low-frequency output forward from the subwoofer that he'll mount in the rear. This makes "the attack of the sound" much more precise and helps to diminish decay, degradation, and what he calls "listener fatigue."

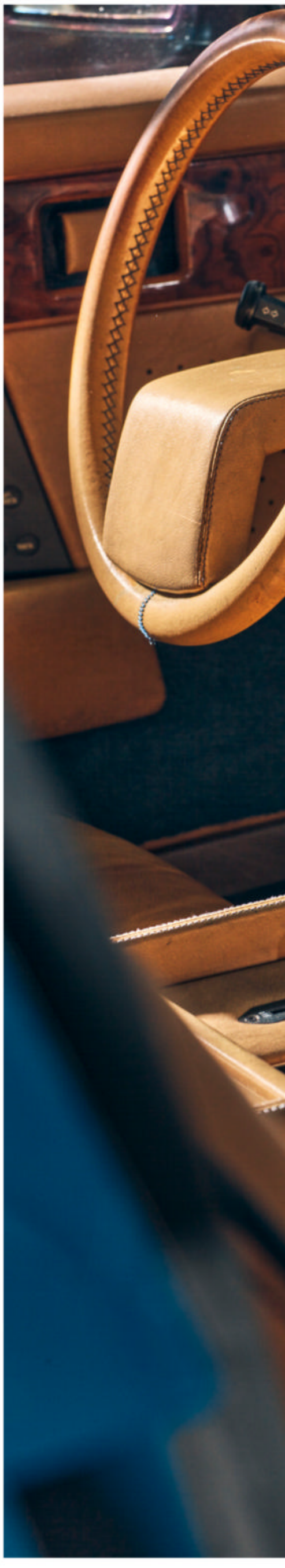
The tuning of each of these individual speakers for an ideal sound—performed by Figliola and his team with a laptop, a good ear, and countless hours of tweaking—is a large part of what separates his systems from stock. "We use a full parametric equalizer, which allows us to assign whatever crossover point to whatever speaker we like, assign whatever gain on any amplifier channel. We can even mess around with nerdier aspects like changing the phase of any speaker or the type of crossover," Figliola says.

The other hallmark of Figliola's shop is the integration of these components. They use high-quality and resonant Baltic birch for building custom housings, and stiffen the housings against rattles (which degrade sound reproduction) via ABS plastic, aluminum, or even steel reinforcements. They apply dampening materials to keep the sound waves flowing in the proper direction. And then,

A. Pop-up headlights! We're not sure what these have to do with audio installs, but just look at them!
B. Like many of Figliola's classic-car installations, this 1983 Lagonda's modern stereo hides behind a period-correct head unit.

A

B



using computer-aided design systems, three-dimensional printers, and a team of wood, metal, fabric, plastic, and leather fabricators, they design, produce, prep, paint, and trim the components to match whatever part of the car they're going to be attached to. "The end result is something that does look different than stock, but it looks like the OEM might have done it," Figliola says.

Just as the inclusion of subwoofers in OEM systems was a trend that emerged first in the custom aftermarket world, quality integration is the next area that automakers and audio suppliers are keeping an eye on. "The installation, the industrial design, the integrity of the components. That's something that we might be chasing and that they have the advantage on," Pierce says. This factor has become so important, in recent sound-system competitions, the single category "sound quality and installation" has been split in two, scored separately.

For Figliola's shop, achieving a quality install can mean going to crazy extremes, such as building custom speaker enclosures for a Fifties Bentley out of book-matched wood veneer, thatched cane, and piano black. Or creating customized and laser-etched switches for the dash of a 1969 Camaro SS, complete with a project-specific vintage-inspired font. Or fabricating a removable, Bluetooth-enabled speaker with a retro guitar-amp grille for a 1967 Cobra. Or resto-modding the tiny graphic equalizers that came in Toyotas, Nissans, and Mitsubishis in the Eighties and Nineties to work with contemporary components.

By all accounts, the future seems loud for in-car audio. "I think we're going to see a lot more features. Not just on the music side. But also audio for safety. Road noise cancellation. How navigation prompts come to you," says Pierce. "And looking toward the future with autonomous cars, the car becomes your living room, and you definitely want that audio upgrade experience."

As much as Figliola and his shop embrace the future, staying current with the needs of autophillic audiophiles, he recognizes that there is something deeper and more elemental in the connection between cars and sound. That our vehicles are not just a delivery device for audio, but active participants in the listening experience, and vice versa. Figliola takes us back to that Lagonda, the otherworldly growl of its quad-carbureted V-8 engine on startup, and the way that is forever connected to the crazy way the car looks and feels, what sets it out of time.

"The first time I saw one was at the supermarket I worked at when I was 15," he says. "A lady stepped out of one. For years, I had no clue what it was. I thought it was a spaceship." He wasn't wrong. Old cars are time machines, and the sounds they make, inside and out, carry us back to the past, and forward into the future.

THE GRID

Rays Wheels Volk TE37Ultra
The name says it all: Touring Evolution, 3.7 kg—just over 8 pounds in the original 15-inch size. Lightweight and race-car cool, this forged aluminum legend was born for JDM but looks good anywhere. It comes in a rainbow of colors, but c'mon, you want bronze, like this 19-inch Ultra model.

PHOTOGRAPH BY **KENJI AOKI**


WELCOME TO C R A Z Y T O W N

BY **MATT FARAH**

MCLAREN TAKES THE ALREADY BONKERS 720S AND MAKES IT QUICKER, WILDER.

MCLAREN PROBABLY shouldn't be allowed to sell this car to regular people. But it does. State authorities probably should set up some sort of tiered licensing system, whereby people who want to drive a thinly disguised race car on public thoroughfares will need a bit of extra training and certification. But they don't. Instead, the only skill a person needs to drive one of these psycho death-missiles on the street is the ability to earn (or inherit) tons of money.

It's called the 765LT, and it's way over the line. Not that this development should come as a surprise to anyone. McLaren's previous foray into the way-too-fast-for-the-street realm, the Senna, was a bit more extreme and significantly weirder looking than the 765LT. The problem with the Senna—if anything in the rarefied world of a $1 million-plus track-day special with see-through doors could be considered a problem—is that except for a few very select places, say, a Hermann Tilke-designed F1 circuit, the standard 720S is just as fast, for a quarter the cost.

The 720S is the car from which the Senna and the 765LT descend. And three years after its debut, the 720S remains a supercar game changer.

Last year I took a comfort-spec 720S Spider to a track day at Auto Club Speedway in Fontana, California. It wore street tires, regular wheels, and cushy seats. I'm an average, club-level driver, but armed with the heaviest, most comfort-oriented version of 720S, I had a track-day cheat code that allowed me to make literally any pass I desired. It needs none of

PHOTOGRAPHS BY **ALEX BERNSTEIN**

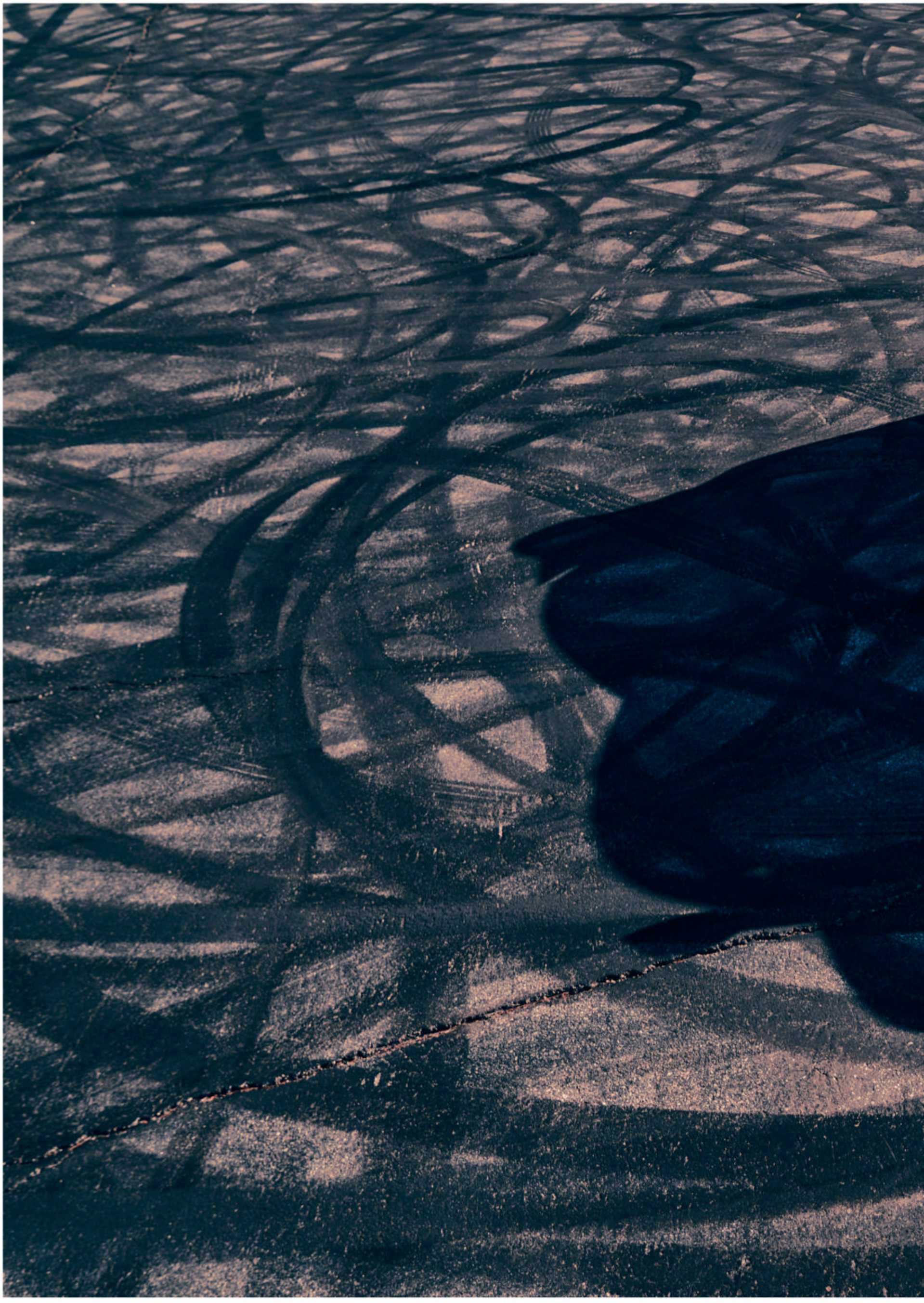
A

A. Lightweight wheels and titanium bolts hide brakes that come straight off the Senna hypercar.
B. The flowing lines of the 720S are interrupted on the 765LT by vents, scoops, and fins, all in the name of more cooling and downforce.
C. Quad exhausts help the 4.0-liter V-8 breathe easier, which means more power and more glorious noise.

B

C

A



A. After the immense concentration needed for an L.A. canyon run, a quiet moment to cool the mind.

the additional track-day goodies offered by McLaren Special Operations (MSO). Like, at all.

But McLaren, doing the thing that McLaren does, pushed the limits of the 720 platform's performance, both for pride and for profit. The result is the 765LT, a device whose accelerator pedal carries a 1:1 ratio of pressure to poo-extraction. I can confidently say that this is the quickest production vehicle I have ever driven, by a noticeable margin. Just take one metric, quoted from McLaren's press release: In a 0-124 mph acceleration test, the 765LT is 1.6 seconds quicker than the Lamborghini Aventador SVJ, 1.4 seconds quicker than a Porsche 911 GT2 RS, and 0.6 seconds quicker than a Ferrari 488 Pista or a McLaren 720S. Yowza. Those are enormous gaps compared to some of the world's quickest production vehicles. And typically, McLaren's performance estimates are a little conservative. Similarly, McLaren says the 765LT makes 755 hp and 590 lb-ft-of torque. I say this number is quoted at the wheels on a hot day. It's likely closer to 800 hp in cool, California fall conditions. Compared to the standard 720S, the 765LT's twin-turbo 4.0-liter V-8 has upgraded pistons, gaskets, a more powerful fuel system, and a new tune. But it also has its own shorter gear set, which means in-gear acceleration is improved 15 percent compared to the 720S, a car that needed absolutely no help in that department, whatsoever.

In McLaren-ese, "LT" is an abbreviation for "Longtail." It's meant to call to mind the 1997 McLaren F1 GTR Longtail race cars that amped up the already amply amped F1 GTR with stretched bodywork, a bigger rear wing, and a sequential-shift transmission. But the LT badge is a misnomer. Truth is, the only added length is from extended front splitters and rear wings. When applied to the 765, or the two other recent McLarens that have worn the LT badge, it actually means: lighter, faster, angrier, and more engaging. But an LFAME badge would be too heavy.

The LT line is the company's factory performance custom series. Nothing has been left alone. Virtually every body panel, save for the windshield and roof, has been either changed or materially replaced, compared with the 720S.

B

A. The supercar that bucked so many supercar norms. The 720S lacks scoops and vents and is easy to see out of. An amazing thing.
B. A 720S on steroids, the 765LT changes every body panel in the pursuit of downforce and speed.

COURTESY OF MCLAREN

Factory Custom

How McLaren turns the 720S into a 765LT.

Weight
Trimming 176 pounds from the already feather-weight 720S required detail work that borders on the absurd. Perhaps most absurd is the deletion of the air-conditioning and audio systems. Don't worry. Adding them back is a no-cost option that everyone will get. Also in the absurd column are carbon-fiber interior trim surrounds. But there are meaningful efforts, too. Ten-spoke forged alloy wheels with titanium bolts [1] trim 48.5 pounds from the car (the optional big brakes add some of that back). The 765LT's seats are 39.7 pounds lighter than the 720's buckets. Masochists can opt for the super lightweight carbon-fiber racing seats, [2] which were standard on the Senna and trim another 26.5 pounds. The titanium exhaust system [3] shaves 8.3 pounds compared to the 720S. And a new lithium-ion battery sheds 6.6 pounds. But that's not all. Buyers can also opt to swap out the aluminum hood, doors, and rear fenders for lighter carbon-fiber pieces. All 765LTs have thinner window and windshield glass plus polycarbonate rear windows [4]. McLaren also strips out the 765LT's carpet and uses a manually adjustable steering column. Point is: Go ahead and have that second pastrami sandwich.

Suspension
A front end that sits 5 mm lower [5] gives the 765LT a bit more rake. The 765 uses lightweight main springs at each corner plus small helper springs. This reduces unsprung mass compared to larger dual-rate springs. Those springs are stiffer compared to the 720S. The 765LT retains the familiar linked hydraulic dampers from earlier Super Series McLarens, but these are now controlled by new software algorithms that deliver greater precision and control, says McLaren. The 765LT trades the 720S's Pirelli summer tires for hyper-aggressive Pirelli P Zero Trofeo R track tires [6]. Common side effects of this treatment include compromised ride quality and non-existent wet-weather traction.

Power
It wouldn't be an LT without a power bump. There's an additional 45 hp from the twin-turbo 4.0-liter V-8, [7] which brings the total to 755 hp. And it's a screamer, too; that peak power hits at 7500 rpm, 500 higher than in the 720S. Maximum torque still arrives at 5500 rpm, but now totals 590 lb-ft instead of 568. Much of the increase comes from a 1.7-psi boost in turbo pressure, but the 765LT also benefits from a healthy injection of Senna. The LT gets lighter forged aluminum pistons, a three-layer head gasket, and a second fuel pump from the alien-looking hypercar.

Aerodynamics
It might not be designed for the Mulsanne Straight like the original Longtail race car, but the 765LT produces 25 percent more downforce than the 720S, according to McLaren. That's thanks largely to the protruding front splitter, [8] a longer diffuser, [9] and an articulating rear wing [10] that, even while retracted, stands taller than the 720's. Other aero doodads, such as the "door blades" [11] and redesigned floor, contribute as well. All that downforce means the 765LT's top speed is a piddling 205 mph, down from 212 on the 720. Factor that into your work-commute ETA. McLaren also redirects air to keep the front brake pads 50 degrees cooler. —MACK HOGAN

Whence it Came

McLaren Longtails

A. F1 GT/GTR "Longtail" (1997): The F1 GTR dominated GT1-class racing in the mid-Nineties, winning Le Mans in 1995 and the BPR Global GT Championship in 1995 and 1996. Not originally intended to be a race car, the F1 was perfect for the production-based regulations. Then, in 1997, Porsche created the 911 GT1, a mid-engine prototype with a handful of road cars made to homologate it for the FIA GT Championship. "Porsche built a racing car and forced us to do it," McLaren designer Gordon Murray said in *Driving Ambition*. In 1996, Murray sketched what became the Longtail. The new car was 22 inches longer than earlier GTRs to increase downforce. McLaren built 10 race cars and three F1 GT road cars to satisfy homologation requirements. McLaren's 1997 entries, run primarily by BMW Motorsport, won five races. But AMG won the remaining six with the radical CLK GTR, giving Mercedes the championship.

B. 675LT (2016-2017): For its more track-focused version of the 650S, McLaren Automotive resurrected the Longtail moniker and built a car spectacular enough that you could forget it had nothing to do with the original Longtails. In fact, the 675LT was only 1.5 inches longer than the 650S. Hardly a Longtail, then. But it was nearly 300 pounds lighter than the base car. Numerous aerodynamic tweaks generated more downforce, and McLaren extracted 25 additional horsepower from its 3.8-liter twin-turbo V-8, for 666 in total. This was a watershed car for the modern McLaren Automotive, the car that showed the company was fully capable of beating Ferrari at its own game. McLaren sold 500 675LT coupes worldwide, and 500 675LT Spiders in 2016 and 2017. The 675LT was such a critical and commercial success for McLaren that the company decided it would continue making hardcore LT variants.

C. 600LT (2018-2020): The second modern LT applied the formula to the entry-level 570S. Compared to the base model, the 600LT was 212 pounds lighter, had 30 more horsepower, a stiffer suspension, ultra-sticky tires, more downforce, and a length increase of three inches. Oh, it also had top-mounted exhaust outlets that shot flames. Once again, there were coupe and Spider versions of the new LT, with the drop-top weighing 110 pounds more than its fixed-roof counterpart but no less excellent to drive. The 675LT was a tough act to follow, but the 600LT lived up to the Longtail name with a thrilling driving experience and performance that kept even the 720S honest. McLaren built more 600LTs than 675s, but the company won't reveal sales figures, though it says fewer than 500 coupes and 500 Spiders made it to the U.S. While it's the most common Longtail, a 600LT is still a rare sight.

—CHRIS PERKINS

B

A

C

FROM TOP: OLI TENNENT; DAVE BURNETT; RICHARD PARDON

The 765LT is the first McLaren to feature carbon-fiber body panels created in-house. And what a body it is. The 720's lines are as smooth as river rock. But the LT's are jagged and aggressive with exaggerated skirts, jutting jaw, various vertical aerodynamic fences, and raspy-looking louvers atop the front fenders.

The entire backlight assembly, four individual pieces, is now made of polycarbonate. The exhaust is titanium and 40 percent lighter than the one used in the 720S, with four tips. Most interior surfaces, including the two seats, are sculpted carbon-fiber panels. The wheels are lighter and affixed to the car with titanium bolts.

By default, McLaren deletes both air conditioning and the stereo, but they are no-cost options to add back. Without them, the LT is lighter than the standard 720S by 176 pounds. But since the Venn diagram of "People who spend $400,000 on cars" and "People who are willing to not have air conditioning in their $400,000 cars" is just two circles near each other, most 765LTs will sit at the curb only 151 pounds lighter than Mr. Jones's 720.

The LT's brakes come directly from the Senna, and are, ironically, 10 pounds heavier than the standard 720S brakes. According to McLaren, the performance improvement is worth the heft. The 765LT also brings specific shock calibration.

The 720S delivers impressive grip from standard Pirelli P Zero tires. Naturally then, the 765LT comes with Pirelli P Zero Trofeo Rs, a barely legal street slick that requires some heat before delivering anything resembling grip. They also throw a shocking amount of gravel and road grime into the door assembly, which tumbles down like a souvenir-store rain stick when you open the door at the Mastro's valet.

After a short, 4-5 mile warm up, I pointed the 765LT down a highway at a reasonable speed, manually engaged third gear, and stomped the go pedal. It absolutely blew the tires right off, even with traction control fully enabled. Rather than lift, I upshifted, and the burnout continued well past 100 mph. Even crossing 110, 120, the 765LT fought for traction. That's just not the kind of thing you see from a mid-engine production car. I did it again, rolling on the power in third gear, and at 90 mph it stepped sideways a bit before straightening out and continuing to spin its rear tires and fight traction well into the middle of fourth. Welcome to crazytown.

I took my wife out in the 765LT and, upon merging onto an entrance ramp, floored it in fourth gear. She immediately got nauseated and told me never to do that again. I took a friend out for a quick spin. He turned ghost-white and, sensing the fourth-gear wheelspin, promptly echoed my rhetorical question back to me: "They just sell this thing to people? What are they, nuts?"

The performance of this vehicle, even to a jaded man such as myself, is beyond anything folks should be able to just buy and drive on the street. I went to the biggest, fastest, emptiest road in Southern California, just after sunrise, and drove basically as fast as the 765LT, and my nerves, would allow. Even after 12 minutes of highly focused, sweaty-palm, heavy-breath driving, ol' Macca's tire temp indicators showed BLUE. I had just gone up this hill as fast or faster than I ever had and even that was not enough pace to warm up the tires in this thing.

Even if the tires won't come up to temp, the handling is telepathic and the steering is chattery, alive. And, my God, the brakes are spectacular. The intelligent active Air Brake system, which flips the spoiler to near vertical, makes the 765LT unbelievably stable while shedding speed. And it doesn't even require that you tap the pedal to activate. A quick lift off the throttle after hard acceleration will kick the Air Brake into action, stabilizing the rear end as weight shifts forward. It's brilliant.

There isn't a public road anywhere on the entire planet on which you can safely approach the performance limits of this car. And while that's likely true of the 720S as well, the differences in execution are stark. The 720S shines not only because of its performance, but because of its flexibility and comfort. It is, in the grand scheme, the more impressive accomplishment.

With the LT, the focus is narrowed. Dialing up the motorsport theater diminishes the usability of the car. The hard carbon bucket seats leave bruises after a day of casual trundling. The harsh suspension is by no means unbearable; it's now in line with

A

A. The LT is at the limit of street-car performance. A machine so quick in every scenario that you'll struggle to see its full potential on the road without a trip to jail.

A

Foundation Stock

One of the few people ever to race an original F1 GTR Longtail, GT and Touring-car ace Steve Soper gives us his driving impressions.

As told to Mike Duff

I drove the F1 GTR short tail in ’96 and the Longtail in ’97. They were very different cars. The biggest difference between the two had to be downforce. The Longtail had a lot more.

Until that point, most of my career had been in touring cars. In the short tail I was immediately fast. It was just a big, powerful GT-type car, the sort I was used to. But with the Longtail I had to reprogram my brain and learn how to get the downforce working. My style of driving was wrong. I’d be playing with the throttle and using curbs on corner entry. That’s not how you drive an aero car. You turn in with lots of speed and then smoothly and gently pick up the throttle, and you stay well away from curbs since you don’t want to alter the pitch of the car.

Luckily my teammate was F1 and Indycar driver JJ Lehto. He had an awful lot more experience in high-aero cars than me, so he really helped get my head around it. We shared data, which was obviously beneficial to him, too, since we were driving the same car. It worked pretty well. In the ’97 FIA GT Championship there was only one other F1 that won a race; JJ and I won four times. [And finished the driver’s championship tied for second place.]

Le Mans was a disappointment, though. After two or three hours we knew we had a competitive car, but the engine blew a coolant hose right at the beginning of the Mulsanne straight. I had to drive the whole way back to the pits with no water, and by the time I got there it was on about four cylinders and making a horrible noise. But the team shoved another hose on and filled it with water. It lasted another 16 hours until JJ had an accident.

I’ve never liked Le Mans. I did it five times, but I always thought it was too dangerous. I love driving a car like the Longtail around there in the daylight by myself. I hate having to race at night with 70 other cars and huge speed differentials. The McLaren was doing over 200 mph in four different places each lap. It was a huge buzz, but I didn’t like the lack of safety, let’s say.

I’d say the Longtail is in a tie for the best car I ever raced. Wherever we went it was competitive, and it was thoroughly enjoyable to drive. The center driver’s seat gave a completely different perspective, and it was pretty much bulletproof. It also had a roof so you didn’t get wet, and even the airflow was brilliant—you could have cold air on your body. The only other thing I drove that matched it was the car that came after, the BMW V12 LMR, the open-topped prototype that Williams built. That means I went from a McLaren to a Williams without ever racing in Formula 1.

Okay, there was one negative with the Longtail. It had a better, stronger transmission than the original GTR. It also went from an H-pattern manual layout to a proper sequential—which was more robust and nicer to use. But Gordon [Murray] made the gearbox on the factory cars work the wrong way around: You had to push the selector forward to change up and pull it backward to change down, the opposite of how it should be. The privateer teams all changed it, but because we were the factory team Gordon wouldn’t let us. He’s a genius, but he’s also quite stubborn. I would get confused in qualifying and pull it the wrong way. I never broke the engine, but I did lock the rear wheels a few times.

A. This McLaren F1 GTR Longtail—chassis 26R—as shared by Steve Soper and JJ Lehto for the 1997 FIA GT Championship.

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A

A. Where most supercars are laden with scoops along the doors, McLaren hides them behind a decoy panel. A moment of restraint.

B. Not many cars are brave enough to show off what lurks underneath. But, then again, not many cars are the 765LT.

B

the ride quality of the Lamborghini Huracan Performante, but the "magic carpet ride" of the 720 is absent. In four days, I didn't move the chassis knob from Comfort for more than five seconds. For the 765LT, McLaren relaxes some of the powertrain NVH attenuation that make the 720S so livable. The stiffer engine mounts and bushings mean that more vibrations find their way into the cabin. That sounds good at first, but over the course of a couple hours' drive it adds up. It's a level of intensity best experienced in small, glorious doses.

I leave with the utmost respect for this car. The 765LT delivers, absolutely and unequivocally, on everything it promises. Its performance is simply staggering. Sure, $433,000 (as tested) is a seriously high price tag, and for that money, it had better do everything but tie your shoes for you. But, to get anything faster, or even as fast, you'd have to spend between six and 10 times as much. It is typically the nature of custom-built cars that their areas of specialization narrow, but also deepen. Such is the case with the 765LT. It gives up some of the 720's balance in favor of intensifying some of that car's already intense characteristics. But we can appreciate a car with a range of talent that's spread a mile deep and an inch wide. The 765LT is the best pseudo-race car for the street that McLaren has ever made. It's the best of the LTs.

Save up for the book…

For those eager to learn more about the GTR Longtails, as well as the earlier cars, a two-volume history has just been released. *McLaren F1 GTR: The Definitive History* by Mark Cole gives pretty much every detail of the car's racing exploits—in total it won 41 of the 131 races it entered and took two international championships. With extensive interviews and race reports, it is certainly comprehensive, but it also includes some intriguing details. Apparently the Ueno Clinic GTR that won Le Mans in 1995 was nicknamed "Snippit" by the team, as the Japanese sponsor's business included vasectomies. It's good that such ephemeral minutiae has made it into the historic record. The book isn't cheap, though—£450 for the standard edition and £1500 for the limited-to-50 leather-bound collector's edition, which gets a metal McLaren badge on the cover. —MD

www.porterpress.co.uk

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SPECIFICATIONS

2021 McLaren 765LT

PRICE:
$433,000 (as tested)

ENGINE:
4.0-liter twin-turbo V-8

OUTPUT:
755 hp @ 7500 rpm
590 lb-ft @ 5500 rpm

TRANSMISSION:
7-speed dual-clutch automatic

CURB WEIGHT:
2709 lb (mfr)

0-60 MPH:
2.7 seconds (mfr)

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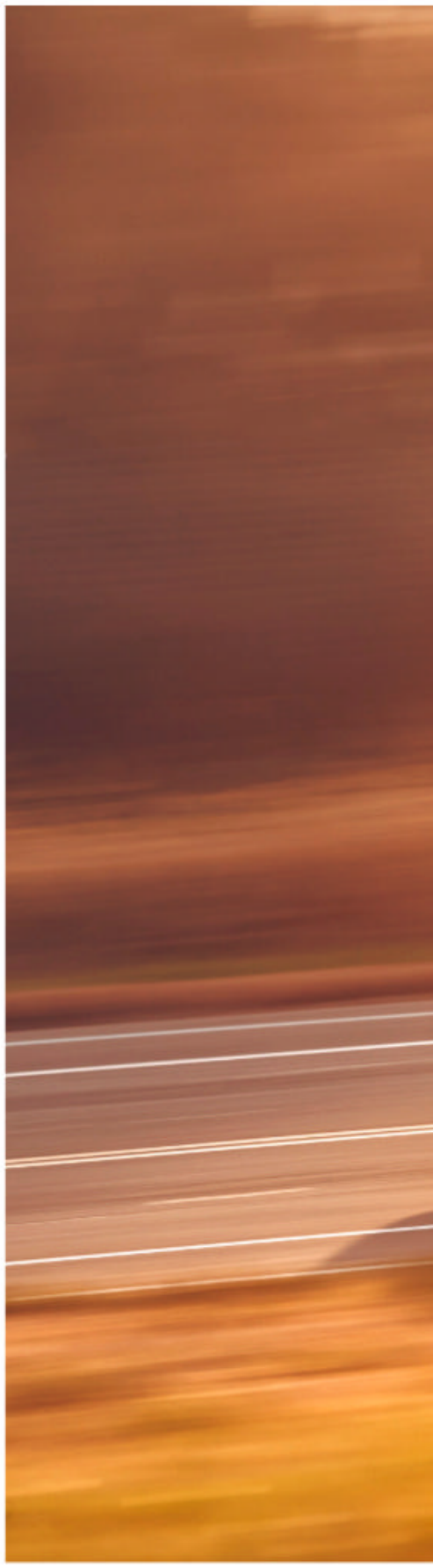
CARBON COPY

A FEW FASTIDIOUS CARBUILDERS SET OUT TO MAKE AN EXACT REPLICA OF BRIGGS CUNNINGHAM'S 1952 LE MANS RACER, THE C-4RK.

IT TOOK THEM SIX YEARS.

A



CHUCK SCHOENDORF didn't want his Cunningham C-4RK recreation to look like the original; he wanted it to look *exactly* like the original, down to the delicate curve of every single louver. With just one C-4RK in existence, building a perfect replica wasn't easy. The original was built by Briggs Cunningham II. Born to a wealthy family, Cunningham was the model gentleman racer, founding the predecessor to the SCCA before World War II. He first competed in the 24 Hours of Le Mans in 1950—a pioneering driver who laid the groundwork for every American racing hero that followed. Cunningham wanted to prove that American teams and drivers could compete with the best of Europe. After running two Cadillacs successfully at La Sarthe, he began construction of his own cars.

The C-4R was built in a production run of two roadsters and one coupe for the 1952 Le Mans 24. While the roadsters proved more successful—one finished fourth in '52, the other took third in '54—the coupe, the C-4RK, was the faster, more innovative car. The "K" designation stood for Dr. Wundibald Kamm, the German aerodynamicist whose research led to the truncated rear-end design that bears his name. Dr. Kamm visited Cunningham's West Palm Beach, Florida, shop to help shape the C-4RK. Kamm's tail design helped make the C-4RK one of the fastest cars on the track that year, topping 150 mph on the Mulsanne Straight, qualifying third, and even leading the 1952 race for a time before dropping out with an engine failure.

Schoendorf, a lifelong Hemi fan and Connecticut-based collector, was originally attracted to Cunningham's cars for their Chrysler power. All but two of the 36 built had 331-cid FirePower V-8s. Over the years, he came to own a handful of C-3 road cars and got to know the Cunningham family well (Briggs himself died in 2003, at 96). On a visit to Cunningham's Connecticut estate, Schoendorf happened to find an unfinished chassis under a tarp. In the Nineties, Cunningham's son, Briggs III, built four C-4R roadster continuation cars, but one extra chassis had gone unused. Schoendorf happened to have an extra Hemi at his shop, complete with an original Cunningham cast-aluminum intake manifold and quad Zenith carburetors.

"I said to Lucie [Cunningham McKinney, Briggs II's late daughter], 'You know, I've got the right engine for this car, you've got the chassis. What do you say we put the two together and build something?'" Schoendorf recalled. "She said 'Okay, what do you think we oughta build?'" The answer was easy—a C-4RK.

There are two original surviving C-4R roadsters and four continuation cars (plus a replica built in the U.K.), but only one coupe. The original C-4RK is in the Miles Collier collection at the Revs Institute in Florida, and owing to its rarity, it never leaves. Collier—whose father and uncle raced with Cunningham—allowed Schoendorf and Cunningham McKinney to examine his C-4RK for reference, so long as they didn't touch it. "I'm not into recreations myself," Schoendorf says. "But on the other hand, when there's only one in the world, and it no longer leaves the museum, and it's also such a cool car, it was a project that had to be done."

Schoendorf enlisted Don Breslauer, a fabricator and race-car builder based near Connecticut's Lime Rock Park, to help turn the project into a reality. Florida company NeoMetrix performed a 3D scan of the C-4RK, which was provided to CNC

A. Behind that fishlike mouth lurks a pulsing V-8.
B. The C-4RK as Le Mans spectators saw it: roaring American ingenuity catapulting down a country road.
C. The interior is all about the little things, like the perfectly delicate switches.
D. Dr. Kamm himself shaped the C-4RK's aerodynamics.

BY **CHRIS PERKINS**

PHOTOGRAPHS BY **DW BURNETT**

B

C

D

A

B

A. Schoendorf spends plenty of time in this businesslike cockpit, enjoying his custom-built racer on the road.
B. Could this be the best home a Hemi has ever found?

shop Four Corners in Millerton, New York, to make a wooden buck. Breslauer worked on the chassis and fabricated necessary parts, while Mark Barton of Stratford, Connecticut, hammered out body panels. Both Breslauer and Schoendorf made many trips down from Connecticut to the Revs Institute to study and document the original C-4RK. "It couldn't look like an awkward kit car," Breslauer says. "We really had to have that shape replicated, or it wasn't going to be the project that we wanted. So we spent a lot of time on details."

After six years of work, the team completed the car just in time for the Cunningham reunion at the 2018 Greenwich Concours. Every component has a story. The Marchal driving lights required a trip to the Retromobile show in Paris, as Schoendorf couldn't find the correct units in the U.S. Most Marchal lights in the States have a central crease; the C-4RK had units with a small nipple in the middle. The 24-hour clock on the original's dashboard was from a B-17 bomber. Schoendorf happened to find one on eBay. Every other period flourish is present and correct: the Halibrand magnesium wheels, the Pontiac taillamps, Stewart Warner gauges, Renault 4CV license-plate light. They're all here. Photographer Dave Burnett noticed the interior window frames were the same shade of blue as the car's stripes. Schoendorf corrected him. It's actually a slightly different shade, just like on the real car, and the blue on the fuel neck is a third shade. "Who knows how many times [the original] car got painted, repainted.... Did they even pay any attention to it? I don't know. Maybe, maybe not," Schoendorf said. That's the fun irony of this car. Schoendorf and his co-conspirators put more work into the replica than Cunningham gave the real thing. After all, the original was a race car, a tool. The details didn't matter. But for the recreation, the details were everything.

"Looks good to me," Collier told Breslauer after a careful inspection at the car's concours debut. Breslauer says that vindicated the whole project.

Schoendorf graciously offered us time behind the wheel of his C-4RK on the roads around Connecticut's Silver Sands State Park, just as the sun set on a warm November day. The car felt deeply

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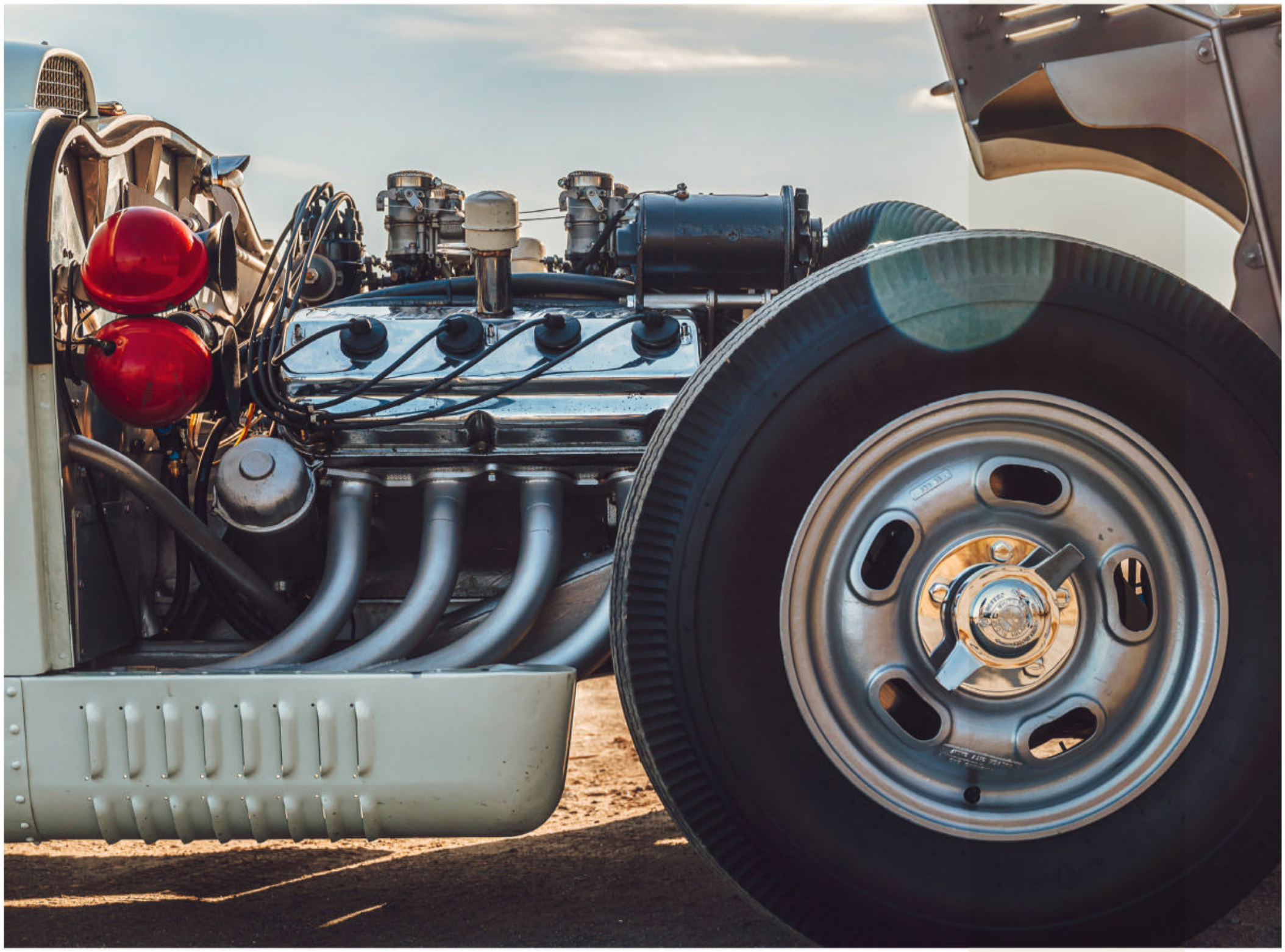

A

evocative, with an amazing V-8 rumble and a surplus of torque, but never race-car angry. The five-speed gearbox was notchy, with a tall, upright shifter, and the engine was happy to idle all day, despite breathing through a cluster of carburetors. Steering felt quite heavy, and you had to shuffle the thin, wood-rimmed wheel by the armful to turn, but that was it. With its upgraded brakes, this car was set up to be used in modern traffic, something Schoendorf isn't afraid to do.

I had to remind myself that the original was built as a Fifties Le Mans racer, designed to run with C-Types, SLRs, and Ferraris. The C-4RK was capable of 150 mph on bias-ply Firestones, so why should it fear a modern intersection? Whereas the original is an actual museum piece, this is a usable car. And Schoendorf drives the hell out of it. He hopes not to damage it, but if something were to happen, the wood buck still sits in his shop.

"We built it once, we can do it again. But believe me, I have no interest in doing any repairs," he said. And as great as it is to pore over every detail when the recreation is parked, it's more fun seeing it on the road—an endurance-racing refugee, designed to beat Europe's best, just sauntering through Connecticut traffic. The Hemi sounds familiar, but the car looks otherworldly.

The amount of attention it got was staggering, and Schoendorf was happy to entertain curious passersby while we shot photographs. This C-4RK recreation is a thing to be shared and enjoyed. It brings Cunningham's history, and American sports-car history, to life in stunning fashion. We are thankful for the obsessives who made it a reality.

A. Schoendorf spends plenty of time in this businesslike cockpit, enjoying his custom-built racer on the road.
B. Could this be the best home a Hemi has ever found?
C. Long hoods hide the best secrets, especially those held in place by leather straps.

SPECIFICATIONS

Cunningham C-4RK Recreation

PRICE:
"No one kept a tally"
ENGINE:
5.4-liter V-8
OUTPUT:
337 hp @ 4900 rpm
381 lb-ft @ 4100 rpm
TRANSMISSION:
5-speed manual
CURB WEIGHT:
"A little over 3000 lb"

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DARK ENERGY

MERCEDES CREATED THE AMG GT BLACK SERIES FOR A SINGULAR PURPOSE: THE NÜRBURGRING.

AS AMG IS TO MERCEDES, so Black Series is to AMG. That's the number-driven logic that led to this ultimate version of the AMG GT. Compared to the now plebeian GT R Pro, the wings of the AMG GT Black Series are bigger, its power output is higher, and its lap time around the Nürburgring Nordschleife is lower. In creating it, AMG has also managed to turn back the clock on automotive evolution, producing a front-engine sports car with performance—and a price tag—comparable with many mid-engine supercars.

We don't need to get too misty-eyed about the Black Series's origin story. The halo-grade subbrand's start was an inauspicious one when, back in 2006, Mercedes created a turned-up SLK 55 AMG Black for the somewhat unlikely purpose of frequent track use. This lost the regular SLK's folding hardtop (and therefore most of its purpose), replacing it with a fixed carbon roof and adding a brawnier 395-hp 5.5-liter V-8. It sounded great and loved straight lines, but it was numb and cumbersome on the track, where it seemed to be engaged in a constant battle with its unkillable ESP. Just over 100 were built, and even the writers of "Top Black Series" listicles struggle to feign enthusiasm for it.

The increasing success of AMG models created a need for faster and more expensive versions, ones that would be able to deliver on-track bragging rights while also helping the deep-pocketed to one-up their regular AMG-driving buddies.

The Black Series badge returned. And after the lackluster SLK, every bearer, including the CLK 63 AMG (2007), SL 65 AMG (2008), C 63 AMG (2011), and SLS AMG (2013), has been a highlight. But even compared to its talented predecessors, the GT Black Series isn't so much breaking new ground as strip-mining it.

Few would criticize the existing GT range for lacking performance or even, in its hotter derivatives, track focus. But the Black Series turns everything up to a cartoonish extent. There are wings atop wings, 911 GT-style vents integrated into the fenders, and a splitter large enough to require tension ties, just like the ones on that JDM-look Civic parked outside Pep Boys. The overall effect is slightly ridiculous—in an awesome way—but show came secondary to go on the list of priorities. While many of the GT Black Series's statistics impress, one stands out like a flashing light: It makes up to 880 pounds of downforce at 155 mph.

AMG has also taken a deliberately hard approach to raising performance from the 4.0-liter twin-turbo V-8, changing its firing order with a new flat-plane crankshaft. This hasn't turned the Black Series into a GT350-style screamer—the redline only increased by 200 rpm—but the flat-crank firing order creates more efficient gas flow and improves throttle response. The GT Black also gets a pair of new turbochargers, delivering up to 24.6 pounds of boost and taking the total output to 720 hp.

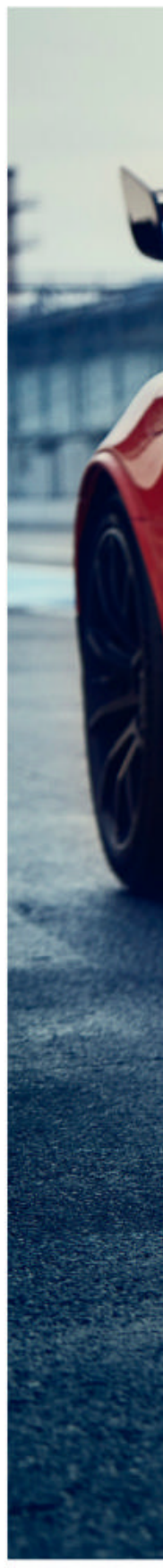
That number makes the GT Black Series the most powerful Mercedes production road car ever. Yet a brief consideration of the other side of the scale produces a startling revelation: It isn't enough. More precisely, it isn't sufficient for this ludicrously fast segment. Because although the Black Series has shed 77 pounds compared to the GT R, thanks to carbon-fiber fenders, hood, and trunk lid, it still weighs a substantial 3615 pounds according to AMG—more than any other junior supercar.

Traction-limited 0-60 mph times are increasingly meaningless. And while AMG's claim of a 9-second 0-124 mph time is hugely impressive, it means—in this crazy mixed-up world we live in—the GT gets there two seconds slower than the McLaren 765LT while costing almost the same.

Track performance is about more than straight-line pace, and part of the GT Black Series's acceleration deficit is down to the need to drag around its huge wingwork. But this is also a car for those who prefer to fine-tune their ideal setup, with pretty much all the coil-over suspension being adjustable. In addition to the usual switchable dynamic modes, it is possible to physically tweak the ride height, adjust the sway bars at each end, alter the front camber, and move both the diffuser and the main element of the XXL rear wing. Other aero elements self-adjust on the fly.

The AMG GT Black Series's leading experiential feature, though, is its engine. The crank transplant brings with it a soundtrack that's completely different from what will henceforth be known as

A. With its gaping maw and a splitter held on by tethers, you'd be forgiven for mistaking the GT Black Series for a race car.
B. The most hardcore badge AMG has in its bin only goes on the most deserving models.
C. Never before has AMG built a road car with such a singular track focus. Seen here at Germany's Hockenheimring.



BY **MIKE DUFF**

PHOTOGRAPHS BY **MICHAEL SCHNABEL**

c

merely the "regular" AMG V-8. The new engine idles like a race car, with an angry mechanical chatter, and it revs with similar aggression. The throttle response is savage, and the combination of explosive reactions and shortened gearing means that, on track, the GT Black seems to spend most of its time in close proximity to its 7200-rpm redline.

Subjectively, performance is in no way lacking compared to a similarly expensive supercar. The g-forces, whether from hard acceleration or the viciously effective carbon brakes, are prodigious, especially when occupants are strapped down by the European model's standard six-point harnesses. But corners quickly reveal that the GT Black Series feels different from the segment norm. Weight distribution is 50/50, as good as it gets for a car with its powerplant in front of the passenger compartment. That's thanks to clever packaging, a rear-mounted transaxle, and an engine set so far back that it's nearly in the cabin.

But the gap between the mass of the engine and the center of the car still works as a lever against getting it turned, a sensation most obvious in slower and tighter corners. This is what race drivers mean when they talk about rotation, something a mid-engine car will always do better than a front-engine barbell. Carrying even a modest amount of excess speed into a turn creates the embarrassing situation of pronounced understeer in a 720-hp, rear-driven near-race car.

But it would be entirely unfair to blame the GT Black Series for its adherence to Newton's laws of motion. This is operator error, based on the fact that the mid-engine cars that normally deliver this level of pace turn with less drama. And it's not a hard problem to solve by relearning that age-old adage of slow in, fast out: Trust in the tireless brakes to shed the huge momentum into a corner, use basic geometry to pick an apex that will turn as much of the corner into a straight as possible, and then get hard on the gas. Even without the benefit of a rear-hung engine, traction is outstanding, the GT's track-grade Michelin Pilot Sport Cup 2 tires generating huge grip. It is friendly at the limit, too, not something that can be said about many true supercars. Like the GT R Pro, the Black Series has

A

B

A. The GT Black's absurdly tall, triple-decker rear wing/spoiler looks like the world's nicest scaffolding.
B. A familiar V-8, now with a new flat-plane crankshaft and 720 hp, lurks behind this badge.

a variable traction-control system that continues to work even when stability management is switched off. A dial in the center of the dash lets the driver set the desired amount of rear slip, which the car manages by cutting spark, not by engaging the brakes. It's true motorsport traction control.

But while it enjoys playing the hooligan, as speeds rise the GT Black Series's dynamic character changes as the hand of God takes over. Trust in the downforce takes a while to build. The GT Black's steering is chatty about slip angles and surface textures, but it doesn't gain weight as aerodynamic assistance increases. And build it surely does, faster corners soon proving just how much help is there—and how one can carry what feels like impossible speed without drama.

The GT Black Series's recent Nordschleife production lap record of 6 minutes, 43 seconds goes a long way to explaining its design. Nabbing it was remarkable—the GT Black is the first front-engine car to hold the outright production record in nearly a decade. It took more than downforce to steal the Aventador SVJ's title. The AMG's rear wing was in the intermediate of its three settings when factory GT3 driver Maro Engel took 1.3 seconds off the Lambo's time. But full use was also made of the GT Black Series's range of adjustability, with a lowered ride height, maximum camber, and the sway bars in their hardest setting, as well as Engel adjusting the traction control according to grip levels. Given the Germanic need for a record-setter to be in full production spec, the Black Series is, in effect, a homologation special created with this benchmark in mind.

The fact that the GT Black Series is the quickest Benz—and the most expensive—will make it the best in the minds of much of its target audience. If owners do take it to a track day, they will find it more than quick and exciting enough, and if they happen to get bounced by a guy in a 765LT or GT2 RS they'll probably still be wearing a bigger smile, certainly able to do the most outlandish opposite-lock gestures in the bar later. It feels like the furthest point down an evolutionary dead end—but that works for many of the most successful predators, doesn't it?

SPECIFICATIONS

2021 Mercedes-AMG GT Black Series

PRICE:
$325,000 (base)

ENGINE:
4.0-liter twin-turbo V-8

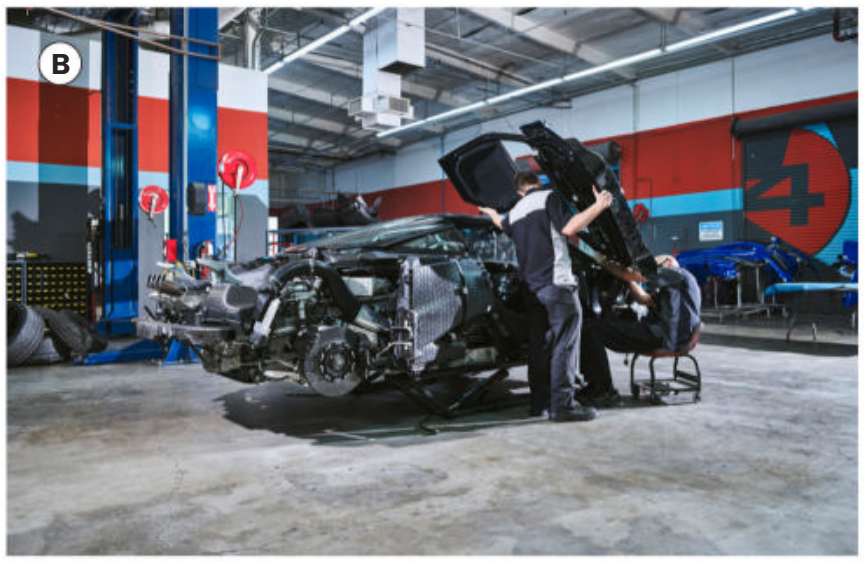
TRANSMISSION:
7-speed dual-clutch automatic

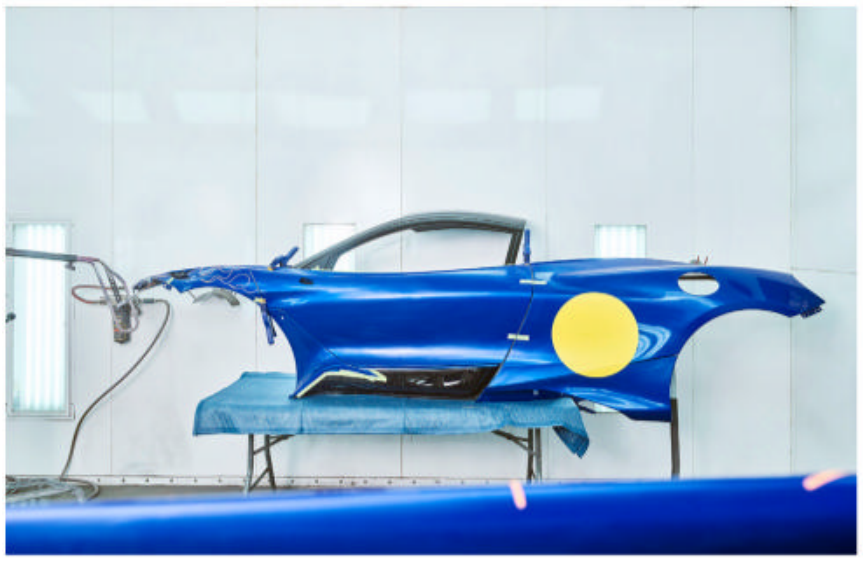
OUTPUT:
720 hp @ 6900 rpm
590 lb-ft @ 2000 rpm

CURB WEIGHT:
3615 lb (mfr)

0-60 MPH:
3.1 seconds (mfr)

PHOTOGRAPHS BY **SPENCER LOWELL**





Road & Track's Kustom McLaren

One of Von Dutch's famous flyin' eyeballs (see pg. 024) is tattooed on Dave Shuten's calf. Permanently. This is important. Shuten was steeped in Detroit's Seventies hot-rod scene, but idolized the work of Von Dutch. After a career at GM, Shuten landed at Galpin Speed Shop in 2010, where he's restored Kustom-Kulture bedrock like Ed Roth's Orbitron (pg. 038). This project was a little different. We gave Shuten just two weeks to paint our McLaren cover car. Go ape, we said. He drew inspiration from Von Dutch's Mercedes Gullwing paint job (see pg. 002), then set to work. Techs at Galpin Auto Sport freed the McLaren's bodywork. Shuten taped out hand-drawn flames onto the stretch of painted body. He added a racing meatball, sporting the number 3: a nod to McLaren's racing history (and this issue of *R&T*). Then Shuten sprayed the flames and laid down the pinstripes, freehand, like Von Dutch would've done.

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2021 Sorento SX-Prestige with X-Line AWD package shown. Some features may vary.

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