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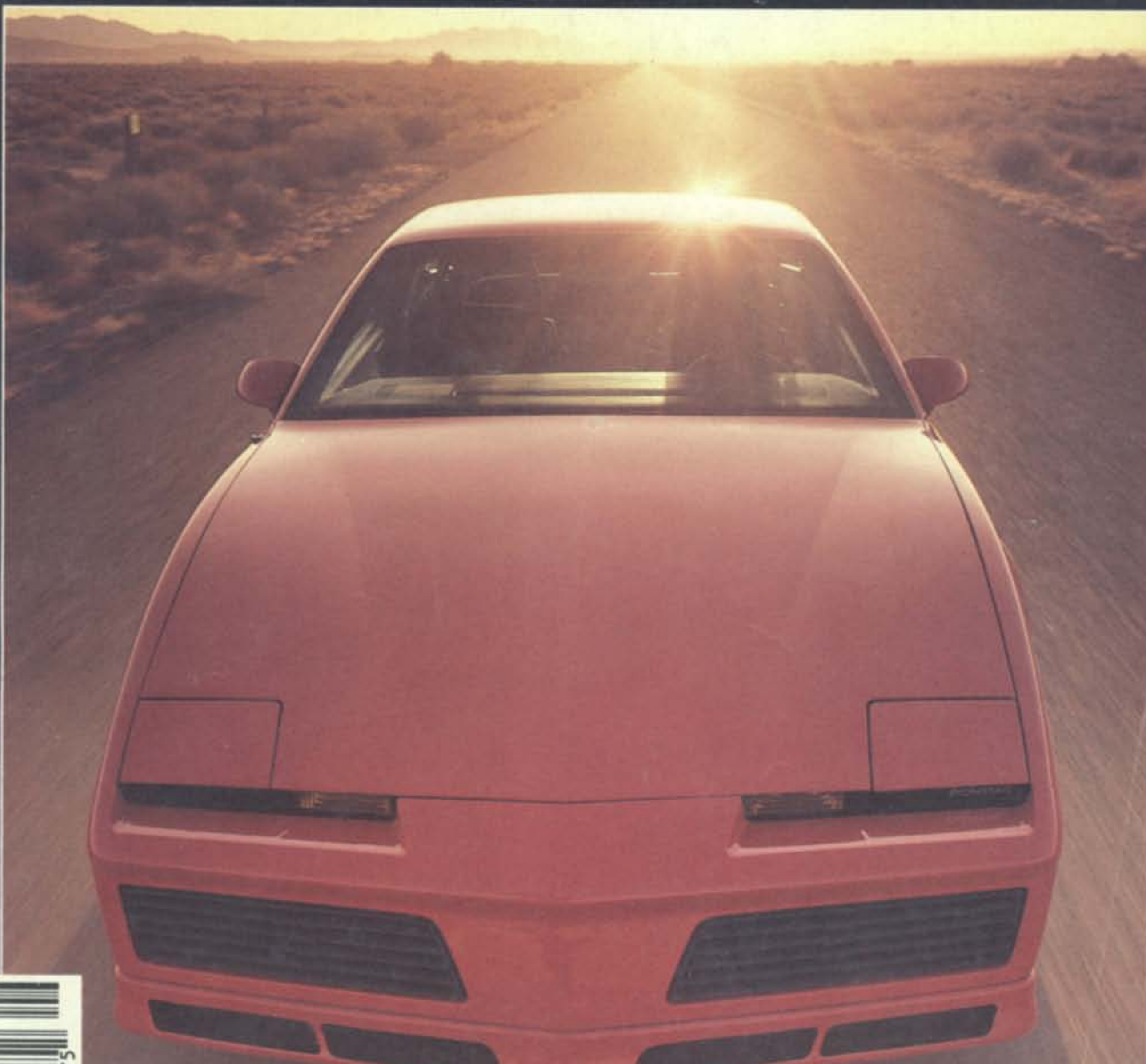
BREAKING THE BARRIER!

200-MPH TRANS AM



Super Trans Am

Part 3: The world's fastest street car?

BY CSABA CSERE

• At nearly 300 feet per second, the world looks as if it's being shot at you from a cannon. Looking far into the distance doesn't help much: objects barely in sight one instant are behind you the next. The scenery blurs as it approaches the car, miraculously spreading and flowing around it and then joining together again and receding into the distance.

An invisible wind assaults your ears, generating a thousand howls as it pummels the car with a vengeance. It sucks the side windows open, creating a roar that penetrates a snug helmet. The four miles of Mrs. Orcutt's driveway doesn't seem so long or so smooth from this vantage. Gentle rises and dips have turned into genuine bumps and holes, and the suspension is constantly lunging up and down.

Concentration isn't hard to muster when your senses are bombarded. Extraneous thoughts are instantly banished by a brief sideways glance at the rugged desert surface. Daydreams are quickly replaced by a sincere and intense affection for the pavement. It takes the most minor steering corrections to stay on course, and after a few seconds of sustained velocity it is actually possible to sit back and enjoy the ride.

Few street cars are able to create such a scene. We know of only one: the *C/D* Super Trans Am, conceived by your madcap editorial staff and turned into reality by Gale Banks Engineering (546 Duggan Avenue, Azusa, California 91702). The program started about two years ago, when we sampled a Pontiac Trans Am fitted with one of Gale Banks's twin-turbo, power-packed V-8s. That engine's combination of awesome thrust and docile tranquillity got us thinking about building the performance car to end all performance cars: one that could outhandle and outrun anything else on the road by a substantial margin.

As a foundation, we needed a car with the strength and the space to accommodate Banks's megapower engine and the necessary accouterments. We also wanted an inherently good-handling car with enough chassis rigidity to tolerate extremely high levels of roadholding. The then new Camaro and Firebird met all of our needs and were beautiful to boot. We chose the Trans Am for its sleeker aerodynamics and for Pontiac's enthusiastic interest in our goals. We set two hard targets for the car, both well beyond existing street-car capabilities: a 1.0-g roadholding limit and a 200-mph top speed.

Our first order of business was handling, for which we recruited the able assistance of Herb Adams, noted Pontiac tuner and racer. With the help of Adams's suspension magic, Goodyear Eagle VR50 tires, some judicious weight reduction, and several development sessions, we achieved a lateral acceleration of 0.98 g on a less than glass-smooth skidpad (*C/D*, November 1983). This was a bit under our goal, but still a full ten percent better than any other street car we've tested.

Next, we upgraded the interior (*C/D*, March). The Trans Am has a decent cockpit to start with, so it didn't take much to make it fit for 1.0-g cornering and 200-mph cruising. We added a pair of Recaro KRX seats (with custom upholstery), a new VDO instrument cluster (with expanded scales and the additional information needed to monitor our progress), and a new shift linkage for the five-speed.

In theory, all that remained was to install the engine, punch the button, and go 200 mph. That sounds simple enough, but street cars really don't want to go that fast. In fact, most of the 170-to-180-mph top speeds you hear so much about turn out to be mythical. We've tested most of the all-time greats—the Ferrari Boxer and Daytona, the Lamborghini Countach, the Porsche 930 Turbo, the DP 935, and the BMW M1—and they all topped out between 160 and 164 mph. Even Jon Ward's Cadillac in NASCAR drag (*C/D*, February 1983) was good for only 170 mph.

We turned to our calculators to see what it would take to run an honest 200 mph. Calculations based on the Trans Am's claimed drag coefficient of 0.30 (with the aero package), its 19.8-square-foot frontal area, and its 3600-pound all-up weight indicated that a bit over 400 hp (at the rear tires) would push such a machine to 200 mph. Even allowing for a ten-percent loss through the driveline, we had power to spare with a twin-turbo Banks-built engine.

So convinced, we went to work installing the engine and related modifications. Every powertrain component from the engine back had to be upgraded: the standard parts simply didn't have enough torque capacity. Banks called on his vast knowledge of arcane part numbers to select components that were not only strong but also streetable. One example is the twin-plate Borg & Beck clutch, originally developed for an Oldsmobile drag-racing program. It has a smooth engagement, manageable pedal effort, and plenty of torque capacity. The shift linkage Banks selected for the sturdy Doug Nash five-speed street transmission also came from the dark recesses of his memory. The linkage from an early-Sixties Corvette, with a few modifications, makes this the best-shifting Nash gearbox we've ever used. A new driveshaft (balanced to 7000 rpm) connects the gearbox to a bulletproof Ford nine-inch rear-axle assembly, extensively modified by Banks to mate with the Trans Am chassis and its suspension system. Since the Banks engine peaks at a lazy 6000 rpm, we selected the tallest available gearset of 2.47:1. With shaved and X-rayed Goodyear Eagle VR50 tires, the engine would theoretically be turning 6600 rpm at 200 mph.

To make the body as slick as possible, we added Pontiac's aero package to our 1982 Trans Am. The light but flexible Lexan rear window (used to trim mass from the car to meet the handling goal) was replaced with a standard rear hatch for greater rigidity. A stock rear spoiler was fitted, because GM's wind-tunnel engineers say it reduces drag. We also replaced the lightweight fiberglass hood, because its full-width power

PHOTOGRAPHY BY AARON KILEY

bulge created more drag than a smooth, standard one.

Once the bodywork was finished, we sent the Super Trans Am to Jack Fallucca's Paint & Body shop in Rialto, California. Fallucca's people did a masterly job aligning the add-on panels with the original sheetmetal. They then refinished the entire car with Acme acrylic enamel in the standard red color. With its new paint, huge tires, and no-nonsense tailpipes, this Trans Am became the glossiest, reddest, brightest, and meanest Firebird in creation.

Anything this hot-looking had to be fast, we theorized, so we set out for Mrs. Orcutt's driveway, our secret high-speed test track. On the way, the Trans Am showed impressive manners. It started easily and ran smoothly at all speeds, and yet insane levels of thrust were only a foot's twitch away. Admittedly, we did relegate all emissions-control equipment to the trash can, but otherwise the Super Trans Am was a model of civility, with power steering, comfortable seats, a stereo radio, air conditioning, and cruise control.

Once we arrived at our secret straightaway, we got down to business with an easy 155-mph pass. Plenty of power was on hand, the Trans Am hitting 155 mph within a mile of the starting point. There was a problem, however: the water temperature was up to 250 degrees Fahrenheit (from a normal 180 degrees), and it had started climbing at the very beginning of the run. The oil temperature was also sky-high, since there was no oil cooler fitted for this shakedown run.

Excessive temperature is a disaster in a turbocharged engine, because it greatly increases the likelihood of detonation. Banks had left a small margin for some rise in operating temperature when he calibrated the engine on his dynamometer, but at the 600-bhp level, that margin is necessarily slim. Unfortunately, there was little we could do to help the situation beyond some minor improvements to the airflow through the radiator.

Since the engine was still running well, and since the temperature gauge's calibration hadn't been verified, we decided to try another pass. The Trans Am reached 163 mph but had to work hard to do it. Afterward, the engine was hot and hurting. It showed its discomfort in a heavy miss.

Pulling the spark plugs told the sad tale. Three of them had lost their ground electrodes, signaling severe detonation. Banks surmised that, with plugs this far gone, the pistons would not be far behind. We decided to call it a day and retire to the shop while the car was still ambulatory.

Banks was right: several pistons had been severely damaged by detonation. A few intake valves were deformed, a head gasket was blown, and the head surfaces were warped. All of the damage came from excessive temperature or from the heat-induced detonation. We concluded that the cooling system wasn't doing the job.

Building in adequate cooling is the trickiest part of producing high-output engines. In comparison, developing the power is relatively easy. Innumerable combinations of camshafts, pistons, cylinder heads, and turbocharging can generate almost any output you may want, especially if low-speed tractability isn't a consideration. Strengthening the engine mechanically to withstand the increased power is another concern. This step is difficult, because several engines may disintegrate before the right combination of components is found. The last and most difficult requirement to achieve is proper cooling. Increased power generates increased waste heat, which must be removed from the engine.

Banks is quite familiar with all three requirements. He holds several records at Bonneville, and his marine engines develop racing levels of horsepower for hours on end. Interestingly enough, several Banks engines similar to ours were already

running on the street with no reported cooling maladies. The difference is that none of those engines had ever seen more than short full-throttle bursts. Again, 200 mph on paper and 200 mph in the real world are not the same.

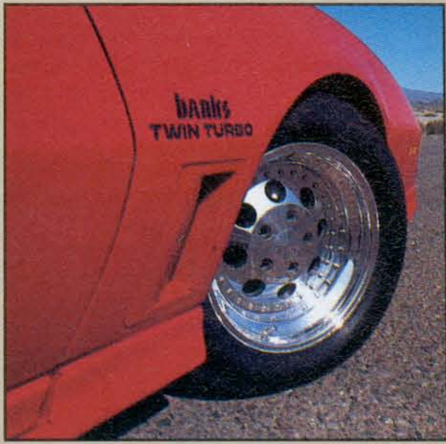
While the engine was being rebuilt, we made several cooling-system changes. A 3.5-inch-thick NASCAR-type radiator (made by Modine) replaced the previous GM heavy-duty unit. In front of that we fitted a large oil cooler, an obvious necessity even for two-minute bursts. We also noticed that the lower radiator hose could collapse and totally block the flow, so it was replaced by a metal pipe. After two weeks of rebuilding, the car was ready for another run down our high-speed driveway.

At first the car seemed to run cooler, but once the throttle was down, the temperature needle swung nearly as fast as the tach needle, so the pass had to be aborted. One sidewalk engineer on the scene surmised that Pontiac's below-the-bumper entrance for cooling airflow wasn't working and that air flowing through the forward grille openings was dumping out the bottom of the car ahead of the radiator. To test this theory, we tore apart Gale's shop creeper and used a large, flat panel from it to block the bottom opening. A quick blast showed this to be a big mistake, as the temperature climbed even faster than before. We removed the creeper panel and, for lack of a better idea, also the thermostat. That seemed to help, so we decided to try another run. The car ran an easy 174 mph, but by the end of the run the water-temperature needle was on its 250-degree peg and the oil-temperature gauge showed an alarming 300 degrees. Even worse, the engine was running roughly, and a California highway patrolman was approaching to investigate our rapidly moving cloud of dust. It was

C/D's 200-mph Highway

• Our federal government occasionally works in strange and miraculous ways. Pres. Lyndon Baines Johnson had his hands full with the Vietnam debacle sixteen years ago, but he nevertheless found the time to send a platoon of motor graders and paving machines across our western deserts to leave the indelible mark of the Great Society. Although he may not have realized exactly what he was accomplishing at the time, LBJ built the best top-speed test track in America. Today, area maps still call it Memorial Drive, but we have affectionately dubbed the road that Lyndon built "Mrs. Orcutt's driveway."

We have been up and down this bituminous ribbon over the years, but since breaking the 200-mph barrier was the goal this time, we decided to take a hard look at our test site and the reasons it was built. We cannot divulge its precise location, but we are prepared to tell you that our semiprivate strip is 26 feet wide and 4.1 miles long. It's paved with asphalt and has crushed-rock shoulders. An overpass from an Interstate freeway spirals around to empty onto the drive, which then runs straight as a string farther than the eye can see to a fenced-in cul-de-sac. There are no distractions of any sort along the way: no intersections, no power poles, no precariously located oak trees, not even a center line on the slightly crowned roadway. Since our superstraightaway crosses a dry lake



clearly time, once again, to call it a day.

Back at the shop, the engine came apart once more. The damage was much like before, only this time the block's deck surfaces were also warped. It was obviously time to study every aspect of the cooling system. Immediately, we found serious problems with the water pump. It was a stock item that Banks had used with success in the past, but close examination revealed restrictive, poorly shaped internal passages, an inefficient impeller, and an excessively fast drive ratio. It was obvious that the water pump was simply cavitating at high engine rpm and moving almost no water through the cooling system. Banks immediately went to work manufacturing a new pump, using an extensively modified housing, a better impeller, and a much slower set of drive pulleys.

We also fitted a new air-conditioner condenser with a very open core to allow the air to pass more freely to the radiator. The single oil cooler was replaced by twin coolers, which were positioned behind the Trans Am's nose grilles; this move further unshrouded the radiator. Two more openings cut below the existing grilles increased the amount of inhaled air, and sealed duct work channeled all of it through the radiator. We also drilled several four-inch holes through the inner fender panels and removed the weather seal on both sides of the hood's trailing edge to provide an exhaust for the cooling airflow. Finally, Banks fitted a Robertshaw thermostat with a huge orifice to ensure that there would be no coolant-flow restriction in that area.

Back at Mrs. Orcutt's driveway, we found that the time devoted to the cooling-system improvements was well spent. Several experimental passes barely moved the temperature needles. With the engine working well, we decided to document the Trans Am's acceleration with a fifth wheel before trying another top-speed run.

Amazingly enough, traction was a serious problem, even with a 2.47:1 final-drive ratio. A 3000-rpm clutch drop easily broke the tires loose, and they spun all the way through first and second gears, unable to transmit the boosted engine's power to the pavement. The Trans Am still lunged to 60 mph in a quick 5.9 seconds. Once it got rolling, the 60-to-100-mph leg took only 4.6 seconds, and 130 mph was on the clock only five seconds after that. And we hadn't left third gear. The quarter-mile elapsed time was 13.3 seconds at 122 mph. An even more impressive statistic was our Trans Am's standing-start kilometer, a test commonly used in Europe. Legendary times are in the 24-seconds-flat area, with terminal speeds of about 130 mph. The Super Trans Am did 22.7 seconds at 160 mph.

We felt that better acceleration times could be produced with practice, but since we were on our third engine, we proceeded with caution. We would first try a short one-and-a-half-mile pass to minimize the heat buildup. Just as we were about to punch the pedal, a policeman appeared to investigate our activities. Fortunately, he was the same officer who had cruised by in the morning and shown a sympathetic interest in our photography session. Even more fortunately, he wanted to watch us run; with his presence and his radio, we had reasonable assurance against any "official" interference.

With that worry gone, we ran the short course, carefully watching the needles. Everything worked perfectly. The speed on the radar gun was 187 mph, the water tem-

bed, it is perfectly flat for most of its length. After spring rains, the surrounding Mojave Desert is spotted with scrub vegetation and muddy patches, but, generally speaking, this test track is as safe as a mother's embrace.

Racers have used this road for years without riling the local inhabitants, but we felt it was high time we actually met Mrs. Orcutt, who lives at the end of our 200-mph highway. We braved the "Posted: No Trespassing!" signs and crossed a low wooden fence to knock on her door. Contrary to the prevailing lore, the house has no gun slits, armed guards, or Doberman patrols. As a matter of fact, the lady who answered our knock is sweet enough to be your grandmother. She's in her seventies and has lived in this desolate spot for the last 25 years, enjoying her modest home, the tranquility of the desert, and the waterfowl attracted to her man-made pond. Mrs. Orcutt's husband passed away many years ago, we learned, but while he was alive, the couple made a go of it manufacturing and selling adobe brick. When the Interstate came through, Memorial Drive came with it to keep the Orcutts in touch with civilization.

We saw no reason to disturb Mrs. Orcutt's sunset years with the news that we'd soon be hammering a Trans Am up and down her drive at frightful rates of speed. As far as she's concerned, we use her lane for fuel-economy testing. She doesn't seem to mind, and we don't think Lyndon Johnson would either, were he alive today. He was, after all, the last president who loved to get behind the wheel of his limo now and then to raise a little hell. *—Don Sherman*

perature was 230 degrees, and the oil temperature was 270. Time to go for broke.

Accelerating through the gears, an imaginary Porsche Turbo came up to race. As we approached 160 mph, the Porsche was wound tightly, clawing for its last few mph, while the Super Trans Am was just starting to pull in fifth gear with its tach needle down around 5500 rpm. At that point, the dyno sheet indicates there is 611 bhp on tap, about 300 of which is needed to maintain 160 mph. That means there's about 300 horsepower left for acceleration; the phantom Porsche disappeared from view.

The seatback kicks your back hard to about 180 mph. At that point, the available power is declining, the drag is tremendous, and the acceleration that's left is undetectable through the seat of your pants. In fact, the cockpit is actually quite serene. The engine noise is blasting out the tailpipe into the wake, and the transmission whine barely registers on your consciousness. Only the wind roaring through the displaced side glass disturbs the peace. (The high pressure inside the cockpit versus the low pressure of the air flowing so rapidly outside the car forces the side windows off their sealing surfaces.) It's necessary to steel oneself mentally not to jerk the wheel should one of the windows blow out.

Staying on course is surprisingly easy, despite an 8-mph wind blowing about 45 degrees across the nose. Pontiac's aero package seems to have excellent stability

Gale-Force Powerplants

• Remember the days when people would gather around a new car and throw up the hood to admire the engine? Engines used to be an art form. Bugatti. Duesenberg. Miller. A few brilliant designers could sculpture powerplants the way Rodin handled bronze bodies.

There's a fellow in Azusa, California, who's trying to bring that art back.

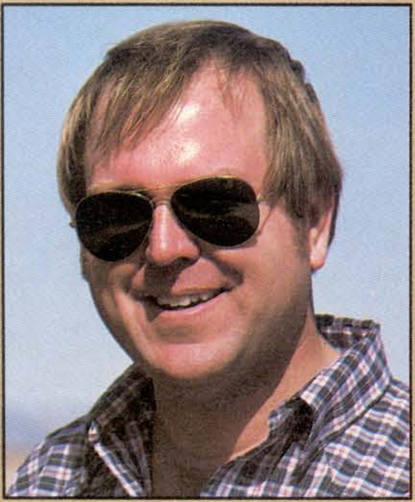
"In marine engines I was in hog heaven. Because I could do anything I wanted, dress the engine any way I wanted with components, be as artistic as possible—you know, do what I call exterior decorating."

Gale Banks, a 41-year-old California hot rodder, puts a great deal of effort into styling his high-performance engine conversions. "I try to make them look sculptured, try to get a flowing look to my engines. Because the customer with a $150,000 twin-engine boat is not a gear head. Not a mechanic. He's a professional in some other field, and a very successful one, an entrepreneur, and he likes to open the hatch and show his business partners what a nice-looking engine he's got.

"I'm trying to do something that's been missing since the Duesenberg brothers died and the late Harry Miller went out of business. The exterior of the engine should denote what's happening on the interior. It should speak power."

Speak power. Well, Gale Banks and his engines do that. You wander around his large, 21-person, brightly lit, spotlessly clean little factory with a feeling growing in your gut like, *uhnn,* somebody's rammed you with an ax handle: how long has *this* been going on!?! Here's the twin-turbo *C/D* Super Trans Am. Over there's a twin-turbo *big*-block Trans Am for another customer who's aiming at *250* mph. On the street. And in the middle of the floor is the man's *own* Trans Am, a smooth-tired, Roman-nosed thing with a twin-turbo porcupine and *ice cooling* of the induction tract. The engine produces 1500 horsepower. The car should do 300 mph at Bonneville, Banks calculates.

"I've always been interested in streamlining. It's efficient mechanically. And



I've always been interested in speed-trials cars and distance applications, as a builder and now as a designer."

Well, aren't many of us? But Gale Banks has made it pay. He started this madness as a high-school student. On the surface he was into electronics, winning prizes for science-fair projects, "but on the side I had this California hot-rod hobby, which in the Fifties was a viable thing. I mean, everybody had a hot rod. If you didn't have a hot rod, girls didn't look at you. We often wondered if their sex organs were not directly connected to their ears, because, you know, you'd hit the pipes and they'd all turn around . . ."

At Cal Poly he made an assiduous effort to pursue the devious workings of little electrons, but electronics seemed static compared with the dynamics of mechanical engineering. Switching majors led him to a job with the Los Angeles Department of Water and Power. "I resigned at the same ceremony that I got my five-year pin. I like engineering, but I like automobiles even more. So in '68 I pulled the pin. I wanted to have fun.

"I opened a little storefront speed shop, a California speed shop, which at the time was going out of business. My total capitalization, after I'd built things I needed, like the counter, was $1100."

But smog regulations turned him off automotive engines during most of the Seventies, a period when Banks Engineering became highly successful in the world of powerboating. The experience of building durable marine competition engines has translated directly into his renewed interest in automobiles.

"You could not find anything that tears up an engine like running it in a boat. You know, in a boat they go out and fire-wall it and go to Bimini! And the shock loads you get are just unbelievable. The endurance factor is a real challenge. So, really, making a 200-mph automobile engine is nothing."

Gale Banks the man reminds you quite a lot of his engines. Big. Solidly built. Complex, an achiever, but well mannered. You have the comforting feeling that he's doing everything right. Some people can turn out first-rate work in a dirty warren of a shop, but Banks's is immaculate.

He does have a messy, unfinished office. Never seems to spend any time in it.

A refreshing thing in the automotive aftermarket: Banks has a notable tendency to speak well of others. His conversation is laced with references to people he admires, even to some who he says are "sort of a role model for me." He comes across as a happy man, relaxed, with a friendly, courteous, open manner. He seems instantly ready to stop his own train of thought to listen to a visitor's. It is no wonder he has built up quite an old-boy network of industry friends and influential, loyal customers.

This 200-mph magazine stuff, he hopes, is one day going to lead to an actual automaking operation. Something patterned after Shelby's—one of the men he greatly admires—"but with all-Yankee iron." He has been turning out these incredibly hot Trans Ams and Z28s for over a year and has now formed a second company, American Turbocar, to market the machines and the array of tough chassis components he's developed. If somebody came along with the bucks, he says, he'd love to do his own Chevy heads, maybe even his own engine, from scratch. "I know just what I'd do . . ."

You can be sure that, whatever form it took, it would *look* right. —*Pete Lyons*

under the circumstances. The suspension also does its share by smoothly absorbing the bumps; this we found amazing, considering the chassis was calibrated for maximum adhesion at much lower speeds.

As the radar position flashes by, the tachometer reads 6600 rpm. Lifting off, the Trans Am slows quickly. The brakes are hardly necessary in the mile we've allowed for deceleration. The radar gun reads 196 mph, which sounds terrific to us, but Banks is disappointed. He wants nothing less than 200. The man starts dialing up another 2 psi on the boost knob.

Since we're stopping so comfortably, we move the radar gun three-tenths of a mile farther away from the starting point to allow a longer run. We also seal the pilot in his capsule by taping the windows, because they're obviously disturbing a lot of air.

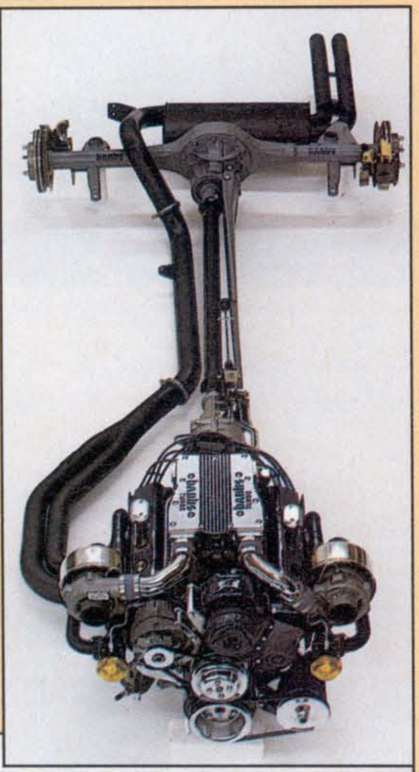
The next run is a duplicate of the previous one, except that just as the needle passes 6600 rpm, it suddenly plummets. The rear view is promptly filled with smoke. The engine is blown and the car is momentarily on fire, but it rolls to a safe halt. We later find that a 34-cent distributor bushing has come adrift, allowing excessive spark advance and enough detonation to rip open the San Andreas Fault. One cylinder is ripped completely out of the block, and a flailing connecting rod knocks a window into the opposite side big enough to stick your fist through.

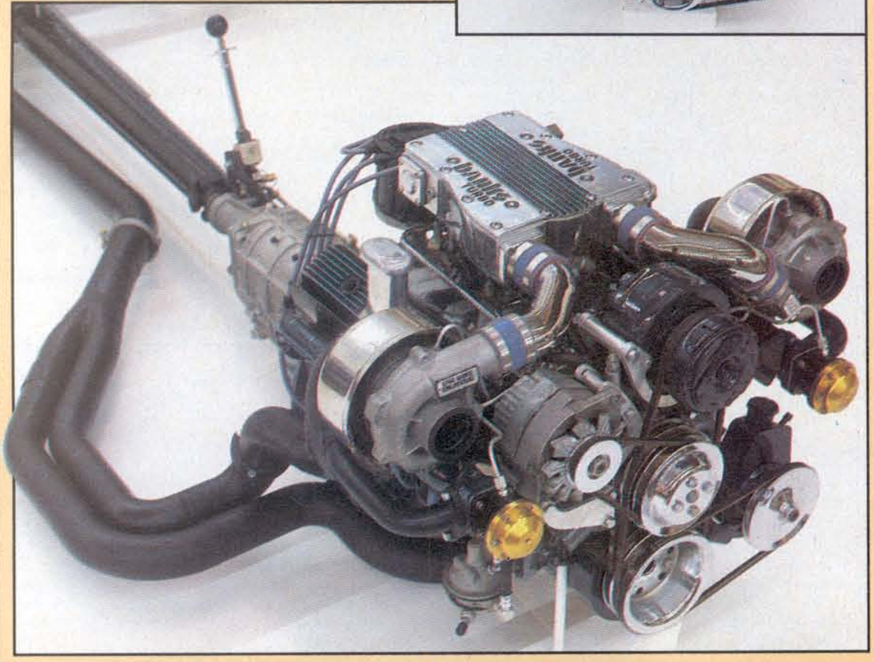
While surveying the smoldering parts,

600 Horsepower You Can Live With

• Squeezing 611 bhp from 350 cubic inches of small-block Chevrolet V-8 is not particularly difficult—provided that one is willing to forgo low-rpm performance, cold drivability, a smooth idle, and a muffled exhaust. But Gale Banks hasn't forgotten about these qualities; instead, he agrees with us that they're essential in a streetable GT machine. The fact that his engine has a certain amount of civility *and* 611 horsepower is what makes it special.

Two Rajay E-flow turbochargers generate most of the power, requiring only a mild contribution from the rest of the engine. Each turbo inhales through a low-restriction K&N filter and exhales into a cast-aluminum plenum chamber. The carburetor secreted inside the plenum is a sealed 800-cfm four-barrel, built by Holley to Banks's specifications. The carburetor's metering circuits are supplemented by additional nozzles that squirt fuel into all four barrels above 6 psi of boost. Fuel is supplied by a Carter mechanical pump that, in turn, is fed by two Holley 110-gallon-per-hour electric pumps located near the fuel tank. To minimize noise and wear, the electric pumps only operate above 2 psi of boost. The carburetor feeds the pressurized mixture to a modified Edelbrock Torker intake manifold chosen for its conservative port design. The resulting blow-through configuration minimizes engine height and the length of the air-fuel mixture's path to the combustion chamber.



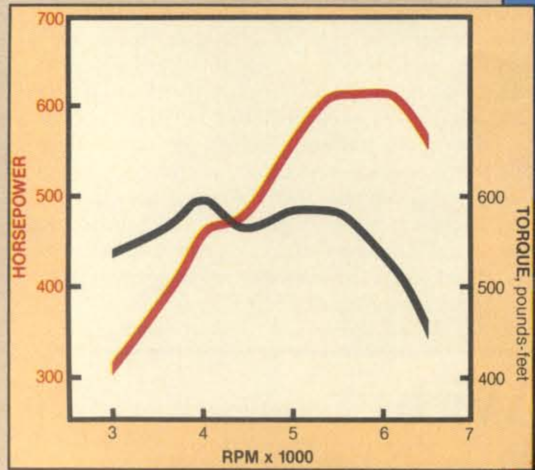


The twin turbos and their waste gates are mounted on exhaust manifolds fabricated from forged-steel tubing. Spent gases empty out of the turbine housings into two 3.0-inch exhaust pipes, which merge into a single 3.5-inch pipe under the floorpan. The flow is quieted by a Chrysler Imperial muffler, modified by Banks for reduced back pressure (no more than 2 psi at peak power) and improved sound quality. Two 3.0-inch tailpipes complete the exhaust system.

At the heart of the maze of plumbing is a stoutly built small-block Chevrolet V-8. Banks starts with a blueprinted, heavy-duty truck block with four-bolt main bearings. A Chevrolet forged-steel crankshaft spins inside, connected by Carrillo rods to forged-aluminum pistons.

Banks chose 1970 LT-1 cylinder heads, because their design has heat risers and modest port sizes, two factors critical to street drivability. Both the ports and the combustion chambers are polished to improve flow and reduce hot spots. TRW stainless-steel valves are fitted, along with Banks valve springs, 1.6:1 needle-bearing rocker arms, and special pushrods. Banks has his own camshaft design, which uses 0.54 inch of lift and about a 304-degree duration. Variable-duration valve lifters attenuate the valve action at low and medium rpm.

Champion gold-palladium spark plugs, fired by a Stinger ignition system, light off the mixture. A water-injection system is activated above 4 psi of boost to help control detonation; in addition, the centrifugal spark advance is limited to 28 degrees. The total system may seem complex, but there's nothing simple about combining 611 bhp with tractability in a street engine. —*CC*

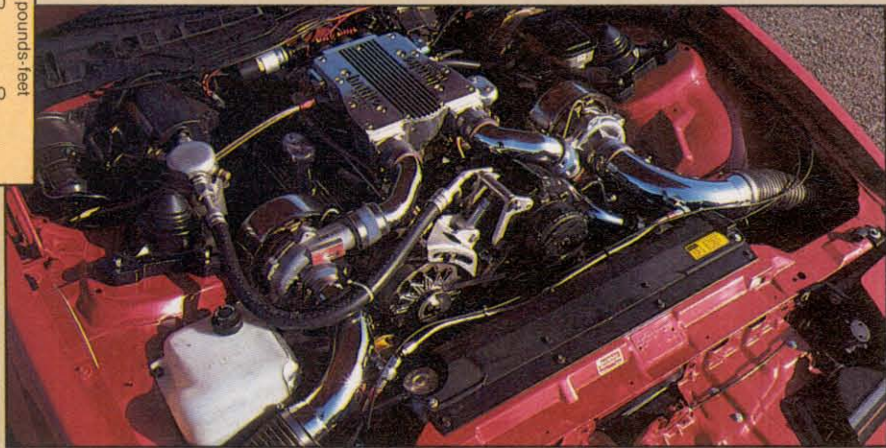


we start thinking about generating more speed. We need taller gearing, because at 6600 rpm, the engine is 75 hp below its peak output. A two-part solution materializes. We will replace the Ford rear axle with a twelve-bolt Chevrolet unit that can accommodate a 2.29:1 gearset. Then we will mount a set of Hoosier street-legal road-racing tires, which are from 1.5 to 3.0 inches taller than the Goodyears. With these changes, 200 mph should fall much closer to the engine's power peak.

In a month, the car is rebuilt, so we set out on our fourth trek to the driveway. First, we try the taller of the two sets of Hoosiers, which will theoretically deliver 200 mph from a mere 5800 rpm. Unfortunately, we only have two of these tires, and the combination of Goodyear radials in front and bias-ply Hoosiers in the rear is unstable. We try several runs, and each time the bumps on the driveway put the car's nose into a gut-tightening, 180-mph corkscrew pattern.

We then fit two of the smaller Hoosiers and try again. The stability is much better, and it's possible to keep a foot planted on the throttle. The car feels much as it did with the shorter gearing, pulling strongly through fourth, which is now good for 185 mph. In fifth, the acceleration trails off beyond 5800 rpm, but the tach needle keeps climbing, ultimately reaching 6100 rpm—or 204 mph. We prepare for a return run, but, before we roll out, a grizzled, elderly lady, brandishing a sawed-off twenty-gauge shotgun, emerges from the desert to express her displeasure with our activities. Since the 204-mph run was into a 7-mph headwind, we feel it has been adequately proved that the Super Trans Am is indeed a 200-mph automobile. Seeing no reason to argue with the buckshot from one of Mrs. Orcutt's neighbors, we call it a day.

For those of you intrigued by our adventure, Banks has formed his American Turbocar subsidiary to build clones of the Super Trans Am. You will need $50,000, a tolerance for longing stares, and a fistful of gasoline credit cards. But if you want the fastest street car around, there's nothing else to consider. ●



Vehicle type: front-engine, rear-wheel-drive, 2+2-passenger, 3-door coupe

Price as tested: $50,000 (estimated)

Sound system: Delco AM/FM-stereo radio/cassette, 4 speakers

ENGINE

Type	twin-turbocharged V-8, iron block and heads
Bore x stroke	4.00 x 3.48 in, 101.6 x 88.4mm
Displacement	350 cu in, 5733cc
Compression ratio	8.4:1
Carburetion	1x4-bbl Holley
Emissions controls	none
Turbochargers	2 Rajay E-flow
Waste gates	2 Banks
Maximum boost pressure	12 psi
Valve gear	pushrods, hydraulic lifters
Power (SAE net)	611 bhp @ 6000 rpm
Torque (SAE net)	595 lbs-ft @ 4000 rpm
Redline	7000 rpm

DRIVETRAIN

Transmission .... Doug Nash 5-speed
Final-drive ratio .... 2.29:1, limited slip

Gear	Ratio	Mph/1000 rpm	Max. test speed
I	3.27	10.2	72 mph (7000 rpm)
II	2.13	15.7	110 mph (7000 rpm)
III	1.57	21.3	149 mph (7000 rpm)
IV	1.23	27.2	185 mph (6800 rpm)
V	1.00	33.4	204 mph (6100 rpm)

DIMENSIONS AND CAPACITIES

Wheelbase	101.0 in
Track, F/R	60.7/61.6 in
Length	190.3 in
Width	72.4 in
Height	49.0 in
Frontal area	19.8 sq ft
Ground clearance	4.0 in
Curb weight	3635 lbs
Weight distribution, F/R	59.1/40.9%
Fuel capacity	16.0 gal
Oil capacity	6.0 qt
Water capacity	14.0 qt

CHASSIS/BODY

Type	unit construction
Body material	welded steel stampings, fiberglass-reinforced plastic

SUSPENSION

F: ind, MacPherson strut, coil springs, anti-sway bar
R: rigid axle, torque arm, 2 trailing links, Panhard rod, coil springs, anti-sway bar

STEERING

Type	recirculating ball, power-assisted
Turns lock-to-lock	2.5
Turning circle curb-to-curb	37.0 ft

BRAKES

F:	10.5 x 1.0-in vented disc
R:	10.5 x 1.0-in vented disc
Power assist	vacuum

WHEELS AND TIRES

Wheel size	9.0 x 16 in
Wheel type	Gotti modular aluminum
Tires	F: Goodyear Eagle VR50, P255/50VR-16; R: Hoosier, G60-15
Test inflation pressures, F/R	45/45 psi

CAR AND DRIVER TEST RESULTS

ACCELERATION — Seconds

Zero to 30 mph	2.6
40 mph	3.6
50 mph	4.4
60 mph	5.9
70 mph	6.8
80 mph	7.6
90 mph	9.4
100 mph	10.5
110 mph	11.8
120 mph	13.0
130 mph	15.5
Top-gear passing time, 30–50 mph	10.3
50–70 mph	9.7
Standing ¼-mile	13.3 sec @ 122 mph
Top speed	204 mph

BRAKING

70–0 mph @ impending lockup .... 198 ft
Modulation .... poor **fair** good excellent
Fade .... **none** moderate heavy
Front-rear balance .... poor **fair** good

HANDLING

Roadholding, 200-ft-dia skidpad .... 0.98 g
Understeer .... **minimal** moderate excessive

INTERIOR SOUND LEVEL

Idle	67 dBA
Full-throttle acceleration	85 dBA
70-mph cruising	77 dBA
70-mph coasting	77 dBA