

'72 TECHNICAL INNOVATIONS

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The adage is, “records are made to be broken.” Well, 50 years ago, a record was set at the Indianapolis Motor Speedway that will likely never be broken.

There are some amazing and impressive records at IMS. Billy Arnold led 198 of the 200 laps in winning the 1930 race, Helio Castroneves averaged an incredible 190.690 mph in winning his record-tying fourth “500,” and A.J. Foyt leads everyone, ever, with 35 consecutive starts. All of those marks will be very difficult to break.

So what was this “unbreakable” record from 1972? When innovation was king, speeds vaulted yearly and a thin rule book encouraged original concepts, Bobby Unser, driving the Dan Gurney All American Racers-built Olsonite Eagle, set a new four-lap average track record of 195.940 mph during qualifying. That broke the existing record by nearly 18 miles per hour set only a year earlier by Peter Revson in a factory McLaren.

To put that into perspective, if someone were to break Arie Luyendyk’s current four-lap IMS track record by the same margin, he or she would be lapping the Speedway at an unfathomable average of 254 miles per hour!

“In 1972, we raised the pole speed by almost 18 miles per hour, the largest increase in history,

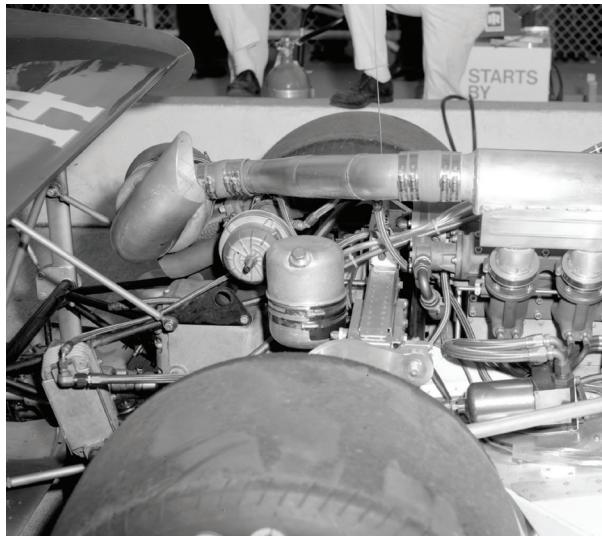
and that will probably remain the biggest jump no matter how far we can even fantasize about it,” Unser proudly recalled before he passed away in May of 2021. “Naturally that’s a big thing. It never happened before, and it will never happen again. So that’s a big deal.”

What made the stars align perfectly for Unser to achieve those eye-popping gains, beside his incredible skills behind the wheel and driving for the top-notch AAR team, was that wings, tires and turbos got bigger and better.

In 1972, the USAC rule book for the first time allowed teams to mount standalone wings on the cars, no longer requiring the appendages to be “integral with the bodywork,” a rule that teams had done their best to circumvent for several years. This updated regulation gave designers amazing creative freedom. What McLaren designer Gordon Coppuck had begun to introduce to Indy cars a few years earlier with limited use of “wings” was now fully fledged and growing in 1972. Other designers such as Roman Slobodinskyj at Eagle and Maurice Philippe of the Vel’s Parnelli Jones

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BLAZING FIELD:
A sea of colors as Bobby Unser leads the field away from the grid for the 1972 “500.”



PUSHING THE ENVELOPE:
Teams experiment with limit-less boost for qualifying, generating upwards of 1100hp.

team spent hours at the drafting table looking for clean lines, aerodynamics and perfection.

The silver bullet for Unser and his iconic No. 6 Olsonite Eagle was the team's use of the top secret "Gurney Flap" which Dan

Gurney developed during a test at Phoenix in 1971 when Unser wanted more stability and cornering speed. By adding a small, simple strip of aluminum at a right angle to the top edge of the rear wing, the problems were essentially solved, and speeds took a dramatic jump. Indeed, half a century on, the Gurney Flap remains one of the most significant advancements in racing.

Wings played such a role in 1972 that, following the race, the weekly issue of Sports Illustrated featured a cover shot of Mark Donohue's Penske-run McLaren with the headline: 'WINGED VICTORY; Mark Donohue at Indy.'

Car owner and 1963 Indianapolis 500 winner Parnelli Jones recalls employing three of the sport's great drivers—Al Unser, Mario Andretti and Joe Leonard—and still coming up short, and by a considerable margin.

"1972 was the start of the 'Super Team' for Vel (Miletich, co-owner) and I, with three cars on one team, which no one else had had for a full season," Jones said. "There was so much design work with the dihedral wings and in the end we just took them off; they simply didn't work.

"Getting back to basics, we had a good car, but we couldn't match Bobby (Unser). Bobby and Gurney were outrunning us; they were outrunning everyone. In fact, Bobby bet me he'd break the track record, and there was no doubt about that. In the end, Al finished second that year, almost making it three (Indy 500 wins) in a row for us. Later, Joe won us three races in a row and the national championship and Mario had some good runs but not much luck."

The "tire wars" between Firestone and Goodyear in this period, with millions of dollars being spent on driver contracts and endless testing, had also accelerated tire evolution. Treads disappeared in order to increase the contact patch with the track surface, thereby providing more lateral grip and so these racing "slicks" brought an unprecedented increase in cornering speed at every track on the USAC championship trail.

Turbochargers from multiple manufacturers were now the norm, giving a new lease on life to the traditional Meyer-Drake Offenhauser engine—which had earned its debut win at IMS as long ago as 1935—as well as a handful of Ford and Foyt engines. That thin rule book imposed no limits on boost, therefore giving the green flag to astronomical horsepower gains—upwards of 1100hp during qualifying—all controlled by a mechanic simply turning a screw on the turbocharger. Of course, with more boost came higher terminal speeds but also more stress on the engine, increasing the possibility of catastrophic failures so that chief mechanics

CLASS OF THE FIELD:
Unser's Gurney-prepared Eagle grabs the pole and smashes the previous four-lap track record by nearly 18 mph.



“...we had a good car, but we couldn't match Bobby (Unser).”

would only choose to run stratospheric horsepower for a qualifying run. Today, instead of a mechanic turning a screw, boost is controlled by electronic pressure sensors and regulated by electronically controlled wastegates, all supplied by BorgWarner.

The unsung heroes of the era were the fabricators and craftsmen who hand-forged and assembled the steel, aluminum and fiberglass cars. While chief mechanics and designers were in the spotlight, without these men behind the scenes, the cars would have never turned a lap. They were the folk who brought to life the designers' dreams on paper.

"Those were real masters," Andretti said. "That was a rare talent — fabricators at that level. Eddie Kuzma and people like "Chalkie" (Eamon Fullalove) were masters in forming aluminum. All of that was done by hand, basically. It was an art that you would have trouble finding today. Look at the wings and the bodywork they created. Those guys were at a premium. No question, I benefited greatly from them in the '60s and '70s."



A FINE TOUCH:
Above: The All American Racers team set new heights during qualifying, but Race Day would prove to be a disappointment.

Right: Donohue and team would give owner Roger Penske his first of an impressive 18 (and counting) victories at the "500."

Kuzma, Fullalove, Phil Remington, Lujie Lesovsky, Roger Beck, Gordon Barrett, Bill Finley, Graeme "Rabbit" Bartils, Don Brown and Bill Eaton were just some of the fabricators who spent endless hours, weeks and months perfecting the next-level aerodynamic, record-setting cars that made up the 1972 starting field. Twelve different chassis—Eagle, McLaren, Parnelli, Lola, Atlanta, Scorpion, Coyote, Brabham, Gerhardt, Kingfish, Antares and P.J. Colt—took the green flag.

Perhaps 1973 and 1982 Indy 500 winner Gordon Johncock, who drove a roadster as a rookie at the Speedway in 1965 and finished fifth and retired from racing following the 1992 race, summed it up best:

"Over my years I've pretty much seen it all at Indy," he said. "In the early 1970s we tried a lot of things—all new, all innovative. For every one good thing that made the car faster, we tried three or four

or five things that didn't work. I think we were all a little jealous of Bobby!

"The size of the wings was incredible; so was the horsepower in '72 and '73. A lot of drivers were getting way too brave and driving over their heads, not thinking. You had to be fast and smart to win races. Speed wins. Speed can also end your day when you're not smart." ■

