

The Hot Ones Ride Again

**70½ CORVETTE and CHEVY CAMARO!**

# MOTOR TREND

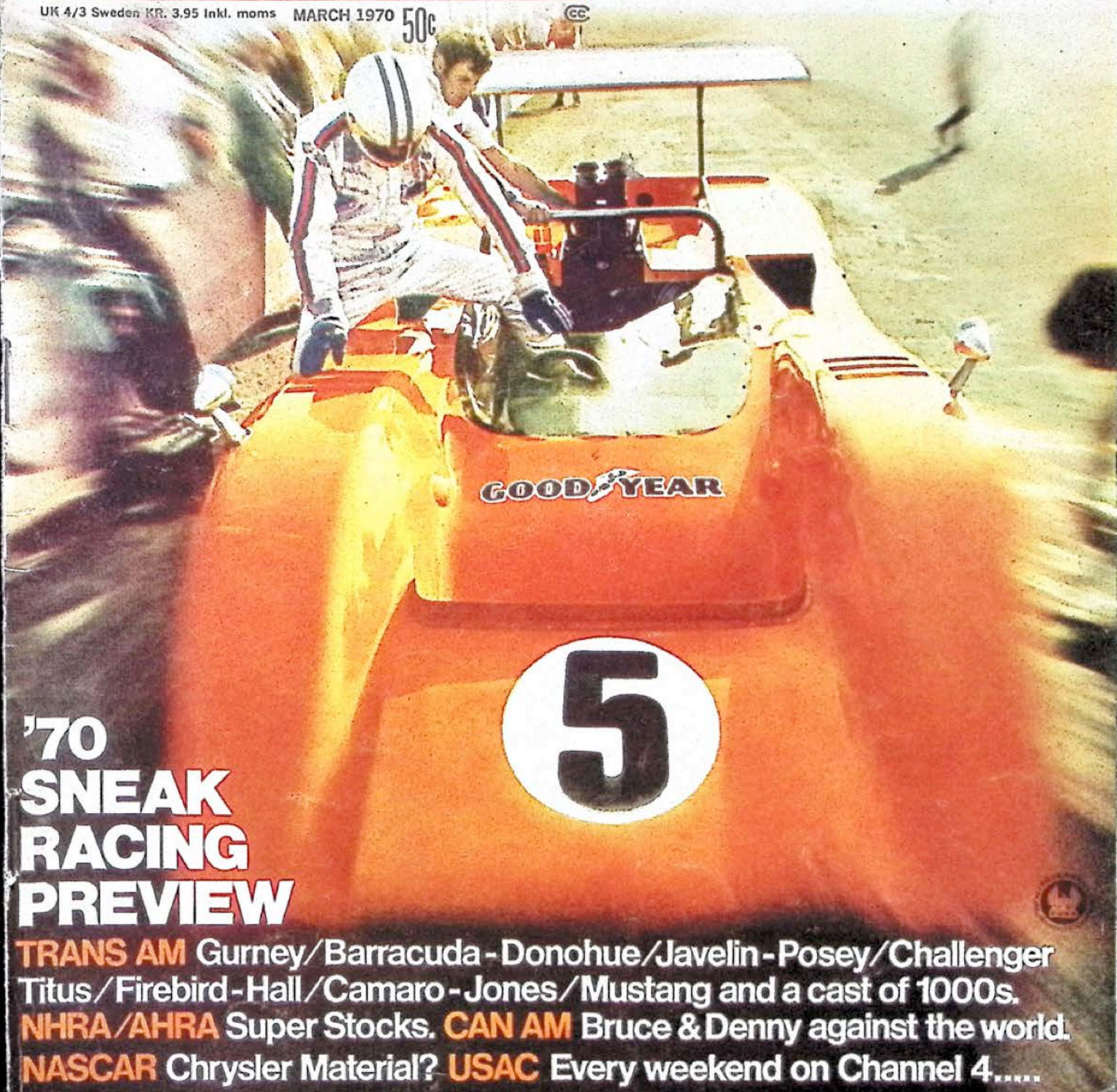
The Complete Automotive Magazine

Ford vs Chevy vs Dodge vs AMC  
Testing Middle Class Values

The Things About Jackie Stewart

Gremlins on the City Streets  
American Motors Mini-car

UK 4/3 Sweden KR. 3.95 Inkl. moms MARCH 1970 50c



'70  
**SNEAK  
RACING  
PREVIEW**

**TRANS AM** Gurney/Barracuda - Donohue/Javelin - Posey/Challenger  
Titus/Firebird - Hall/Camaro - Jones/Mustang and a cast of 1000s.  
**NHRA/AHRA** Super Stocks. **CAN AM** Bruce & Denny against the world.  
**NASCAR** Chrysler Material? **USAC** Every weekend on Channel 4.....

# Pontiac announces the beginning of tomorrow.

The all-new Firebirds are here.



Gauges that gauge,  
spoilers that spoil,  
and scoops that scoop.



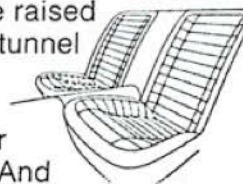
What's this? Detroit pushing functional styling? Wouldn't you know who. Pontiac.

We decided to give our designers and engineers their heads. And what they came up with is styling that works. Aerodynamically. In four totally new Firebirds. Two of which you just might find particularly stirring.

**Firebird Formula 400** (the blue beauty shown left). We asked ourselves how many passengers we might seat comfortably. The answer was four. So Formula 400 has bucket seats front and rear.

Then, we raised the drive line tunnel between the seats to get more room for spring travel. And the result is a decided lack of the typical sports car jolts.

Formula 400 also has a bigger stabilizer bar up front. A brand-new stabilizer bar in the rear. And standard front disc brakes. For those roads that feature curves. The

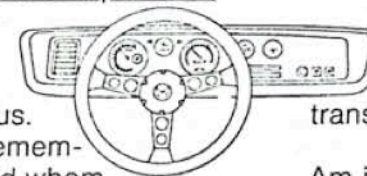


fastest variable-ratio power steering around is available for such conditions, too.

The standard 330-hp, 400-cubic-inch V-8 should be enough for about anyone. Just in case somebody disagrees, however, there's a 400 Ram Air V-8 you can order.

Should you do so, the scoops perched on that fiberglass hood will scoop. Really scoop. Take a glance at the available full complement of honest-to-gosh gauges if you doubt us.

Just remember who told whom about functional styling. **Firebird Trans Am** (the one shown right that isn't blue). Ah, what a little road testing can do. What it can do is help you develop a front air dam



and side air extractors that put a 50-lb. downward pressure on the front end. At

turnpike speeds. It can show you how effective air dams are at the wheel wells. It can lead you into developing a rear spoiler that puts 50 lbs. of pressure on the rear end.

Also at turnpike speeds. And it can convince you that a

shaker hood with a rear-facing inlet is effective for providing air to a 345-hp, 400-cubic-inch Ram Air V-8.

It can also tell you how it all works with the Hurst-shifted wide- or close-ratio 4-speed transmission you can order.

Now you know why Trans Am is our most sophisticated Firebird. In fact, the only thing that doesn't function is the un-subtle stripe running the length of the car. But maybe it does something for you.



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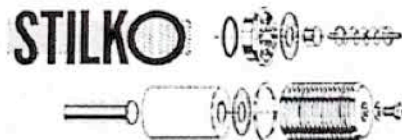
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# MOTOR TREND

The Complete Automotive Magazine

MARCH 1970, Vol. 22, No. 3



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**COVER** Symbolizing the blurring speed of auto racing and its skyrocketing popularity, this month's cover shot, featuring Denis Hulme, was taken by Petersen Photographic Director Bob D'Olivo.

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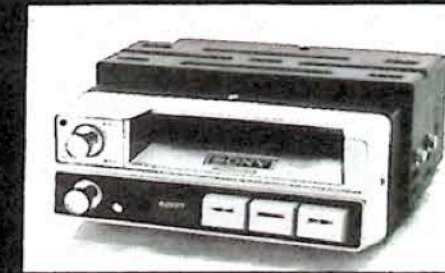
What's more, if she wants to hear "Light My Fire" right now, her fire can get lit. Right now. (With a cartridge machine, you'd have to wait for the whole program to recycle.)

Sony's exclusive Insta-Load feature makes it so easy to

insert a cassette, you can change the mood without taking your eyes off the road. And with the Model 20, cassettes even eject themselves automatically when they're finished playing.

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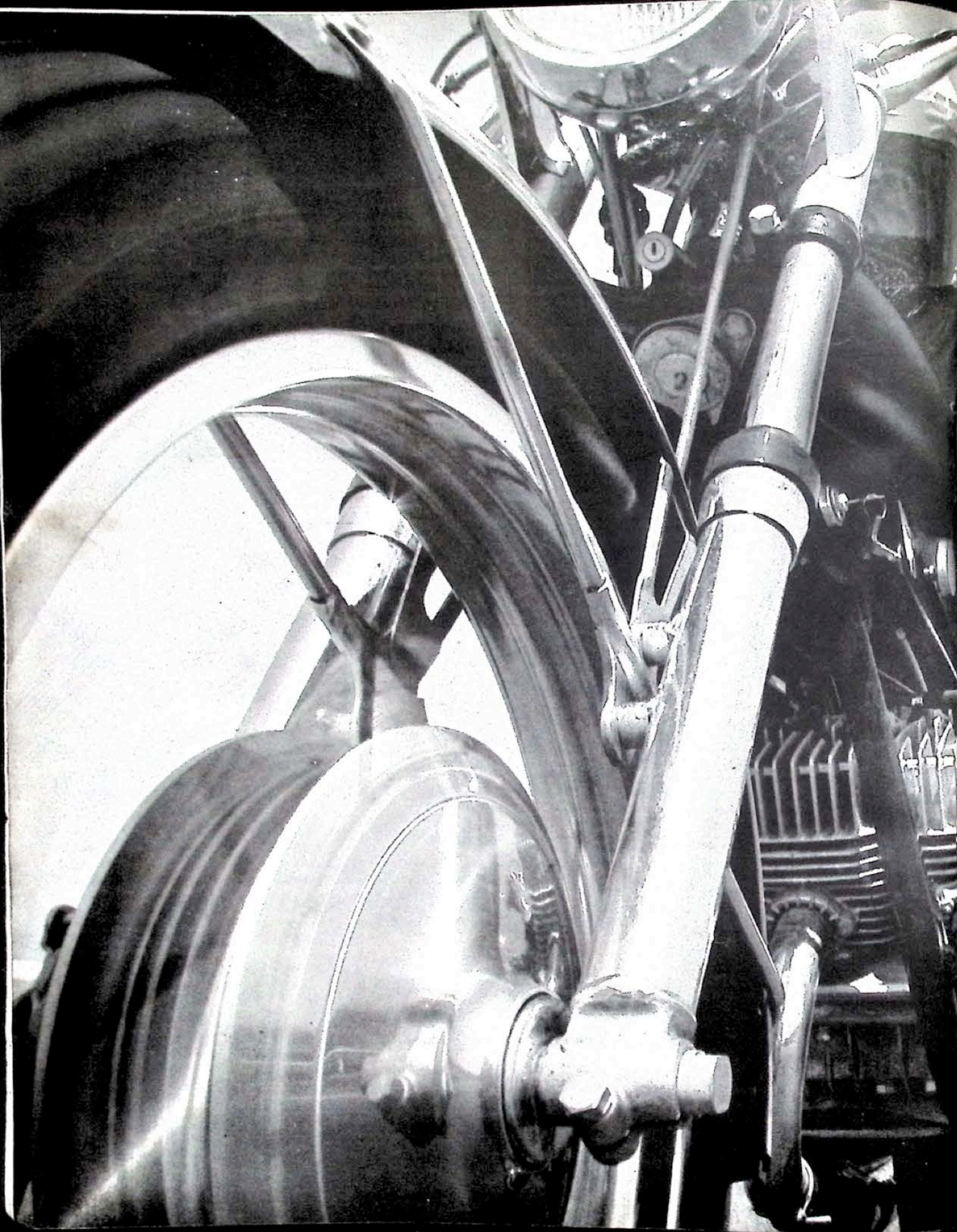
And ask for a test drive.



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\*1969 Superscope, Inc., 8140 Vineland Ave., Sun Valley, Calif. 91352. Send for free catalog.



If the Honda 4 (\$1,495)  
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Harley XLCH (\$1,767)  
could scream through the quarter mile  
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*\*As certified by the American Hot Rod Association, June 22, 1969*

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Eastern Kawasaki, 3 Production Way, Avenal, New Jersey 07001



# Marking Time

**L**ook," said John DeLorean, General Manager of Chevrolet and Vice President of General Motors, reaching for another Swedish meatball, "everyone in the industry knows that this insurance thing is going to knock the heck out of the high-performance market. I've seen the 1970 rates and it's ridiculous. If a kid with one mark on his license goes out and buys a 396 Chevelle for about four grand and spreads the payments over a 3-year period he will have to pay about \$2200 each of those years for insurance. Which means he'll wind up paying \$2600 more for the insurance than the car. Obviously, he's going to get into something with less horsepower. Even then, if he wanted a 4-speed he'd be penalized by his insurance company because it's a high-theft item. And, there's not a thing any of us [automobile manufacturers], can do about it."

It was the '70½ Camaro and Corvette long-lead press preview. We were all up in the V.I.P. lounge at Riverside International Raceway relaxing with a few drinks and hors d'oeuvres, watching the gray haze of late afternoon steal into the spaces between the corrugated steel garages across the track. As if to underscore Chevrolet's subtle shift in direction from what has been, with the exception of the Z/28, a majority commitment to straight-line power, two of the four new Camaros available were nimble Z/28s. The fact of the threatening increase in insurance rates looms large and the good businessmen of Chevrolet are not going to be caught flatfooted.

The prophets of doom and sayers of disaster, among them many from the automotive press, equate the insurance blitz with something along the lines of the crash in '29. Good-bye to rubber-yanking shifts and the wild shriek of air being rammed through three Rochesteres on an L-88 Vette at full song, and shaker hoods and rappy exhausts—good-bye to everything.

Well, it just isn't going to happen. Anymore than it did when the emissions regulations spooked Detroit 3 or 4 years ago. As a whole, the performance level of all cars is much better than in 1967 or '68 or '69, yet the parts-per-million maximums are lower than they ever were.

Now then, you don't need the deductive powers of Mr. S. Holmes to know that the first Detroit play in the insurance game-plan will be a screen-pass called lower horsepower ratings—we'll find ourselves up to our hip pockets in what can be called the American equivalent of the BMW 2002. Cars with low horsepower, high revving mills that handle and stop better than anything we've seen before. Cars like the new Olds Rallye 350 that was specially designed as an "insurance" vehicle. Come to think of it, at \$3500, the BMW is ideally suited to take some pretty telling pot shots in this restructured market.

Then, too, even the hard-core performance nut has to be reconciled by this time to the fact that most of the performance market is really the performance-styling market. Ford sells an awful lot of hood scoops, but nothing much bigger than a 351 is under most of them. In the first 5 years of Hemi production, Chrysler built a grand total of 9754 of the big mothers. The same goes for Ram Air Pontiacs, Boss 429 Mustangs, and Stage I Buicks.

All of which brings us around to the question of what exactly the insurance companies have on their minds besides profits. Once you establish that in a 9-million production run there are actually few stellar performance cars around to begin with, and that most of these are rarely street-driven, you wind up with something like a 383 Road Runner being the backbone of the super-car market. Are the 383 Road Runners involved in significantly more mishaps than 383 Belvederes? Better yet, is the accident-gap sufficient to justify a \$500-\$1000 higher insurance premium? Have any major underwriters been forced to abandon construction on their latest multi-million-dollar office monuments that often rival the Hanging Gardens of Babylon in grandeur because supercars have become open sewers for their capital?

Back in Business Law 101, the instructor said that an insurance contract is essentially a wager; for a specified premium you bet the underwriter you will be involved in an accident and he bets you won't. As in 'Vegas, the odds are with the house. The instructor happened to be from Alberta, Canada, where they have both privately-owned insurance companies and a provincial (state) operated one. While all you red-blooded, free-enterprise Americans are reeling at the suggestion of ugly socialism, consider that, at the time, under-25 drivers were paying \$185 a year for liability coverage to the private companies, while the provincial rate was \$17! Better have another Swedish meatball.

*Eric Halquist*

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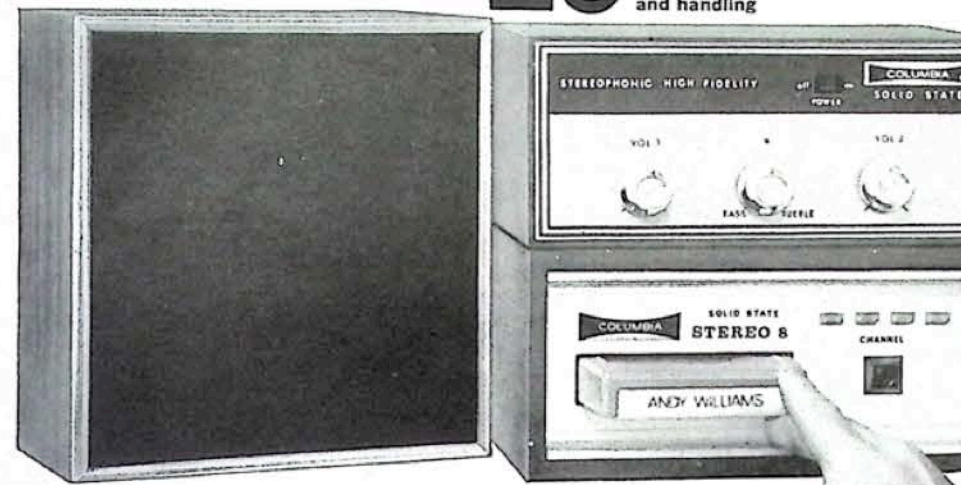
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Signature \_\_\_\_\_ 841-3/5S 841-4/6S

# it's your nickel

## Family Car Man

I, like many other automobile owners, am a family man with a practical family-type car. I am interested in comparison tests of wear, quality, etc., of a conventional automobile. I don't care how much rubber it will put on pavement. In other words, tests on high-performance racehorses leave me cold.

B. L. Miller  
Butler, Pennsylvania

## Gas Cap Blues

My biggest complaint about most of the 1970 cars is the placing of the gasoline filler practically under the car. I have



owned cars for 40 years and this is the most stupid thing I have ever seen.

It is paradoxical to put a system on the car to prevent evaporation from the gas tank and carburetor and then put the gas filler so low that gas is spilled when the tank is being filled.

Francis Werner  
Enterprise, Alabama

## Coolant Recovery — Again

Just finished the article in your December issue on the coolant recovery system. I've had one on my 1968 Mercury Monterey for about a year and I agree with your conclusions 100 percent, but I am quite surprised to read your description of the radiator caps furnished with the kit.

Actually, the only unobtainable item in the kit is the see-through sight glass for the upper radiator hose to monitor the system for the presence of air. The radiator cap is a garden variety like all pressure caps (nothing tricky about it).

What I am saying is the kit is much too expensive. You can make your own by taking your overflow pipe and sticking it into a Chlorox bottle, leave the cap on you've got, and you are in business.

I don't know what the cost of the Saf-Gard coolant recovery system is, but I got hooked for \$13 for one and I think it is too much and misrepresented.

L. S. Harley  
Troy, New York

How about the idea, Harley; was that too much and misrepresented? — Ed.

In the December 1969 issue of *Motor Trend* you wrote an article entitled "Coolant Recovery System Proven."

I have a 1967 Dodge RT 440 which pushes water out the radiator.

I would very much appreciate the

address of the company which manufactures this coolant recovery system.

Elwood Savage  
Millville, New Jersey

The Saf-Gard Company will be more than happy to give you further information and a list of local distributors. Write to Saf-Gard Products Inc., P.O. Box 969, Tempe, Arizona 85281. — Ed.

## Hamm It Up

Lenette Hamm (Dec. *Motor Trend*) doesn't seem to be able to read very well. Your article on the Trans-Am Firebird doesn't say at all that the car is anything spectacular on the strip, or is meant to be.

The Trans Am is much more of a performance car than Hamm's 'Cuda that she runs so skilllessly on a strip. Hamm is just another one of those people who think a car is worthless unless it can go like a fueler on a drag strip. I'm sure that an equally equipped Firebird could blow the doors off that Barracuda that Hamm thinks is so great.

Dave Nagy  
Escondido, California

Street racing Mopar Momma should move across the state line to run her stoplight Grand Prix. My St. Louis B'fish stopped the clock at 14.35 (97 mph) with a 340-S, Torqueflite, Sure-Grip 3:91, H70's, traction bars, and a home-grown cold-air box.

G. W. Aschen  
St. Louis, Missouri

Look who's kidding who! The Barracuda Baby (Lenette) from Kansas really is a ham.

Here in California we use 340's, 383's, and 440's to tidy up our corral; that is, if there are any left after our "Stangs" eat breakfast.

Jean Rogers  
La Mirada, California

Miss Hamm's provocative boasts about "never being beaten by anything smaller than a 383 — or by a man" with her 340 'Cuda (It's Your Nickel, December M/T) leads me to believe one of these three things:

There aren't any men or Chevys in Shawnee Mission, Kansas; if there are, Mopar Momma obviously avoids racing them, or any guy worth his salt with a properly tuned 283, 302, 327, or 350 Chevy doesn't waste his gas and tires blowing dust in the face of dizzy broads behind the wheel of 340 or 383 Mopars.

Howard Hanks  
Livonia, Michigan

## Junk Parts

In response to Frank Honey's letter in your December issue regarding Detroit's parts mix-up, manufacturers should supply parts for the cars they produce.

Manufacturers are required to make parts for 10 years after production of the units. This means that in 1961 Chrysler stopped production of parts for all '51 models.

Doug Furlich  
Sioux City, Iowa

Happy hunting, Frank. — Ed.

## Car of the Year Comments

This year's Car of the Year nominees are unreal. It must be rough picking from a heap of junk like this.

It reminds me of the time this country had to choose Nixon, Johnson, or Wallace.

Joseph Guroz  
Chesnille, Massachusetts

That was Nixon, Humphrey, and Wallace, Joe. We've batted better than .667 in the Car of the Year selections. — Ed.

Is there any chance that Ford Motor Company might be paying you (or should I say "bribing you?") to nominate their Torino as a 1970 Car of the Year nominee (and perhaps the 1970 Car of the Year itself?). Honestly, now, how could anything so grossly ugly be nominated as a Car of the Year?

Greg Coleman  
Louisville, Kentucky



I have but one word for your Car of the Year nominees for 1970 — Ugh!

Cooper Mosely  
Bakersfield, California

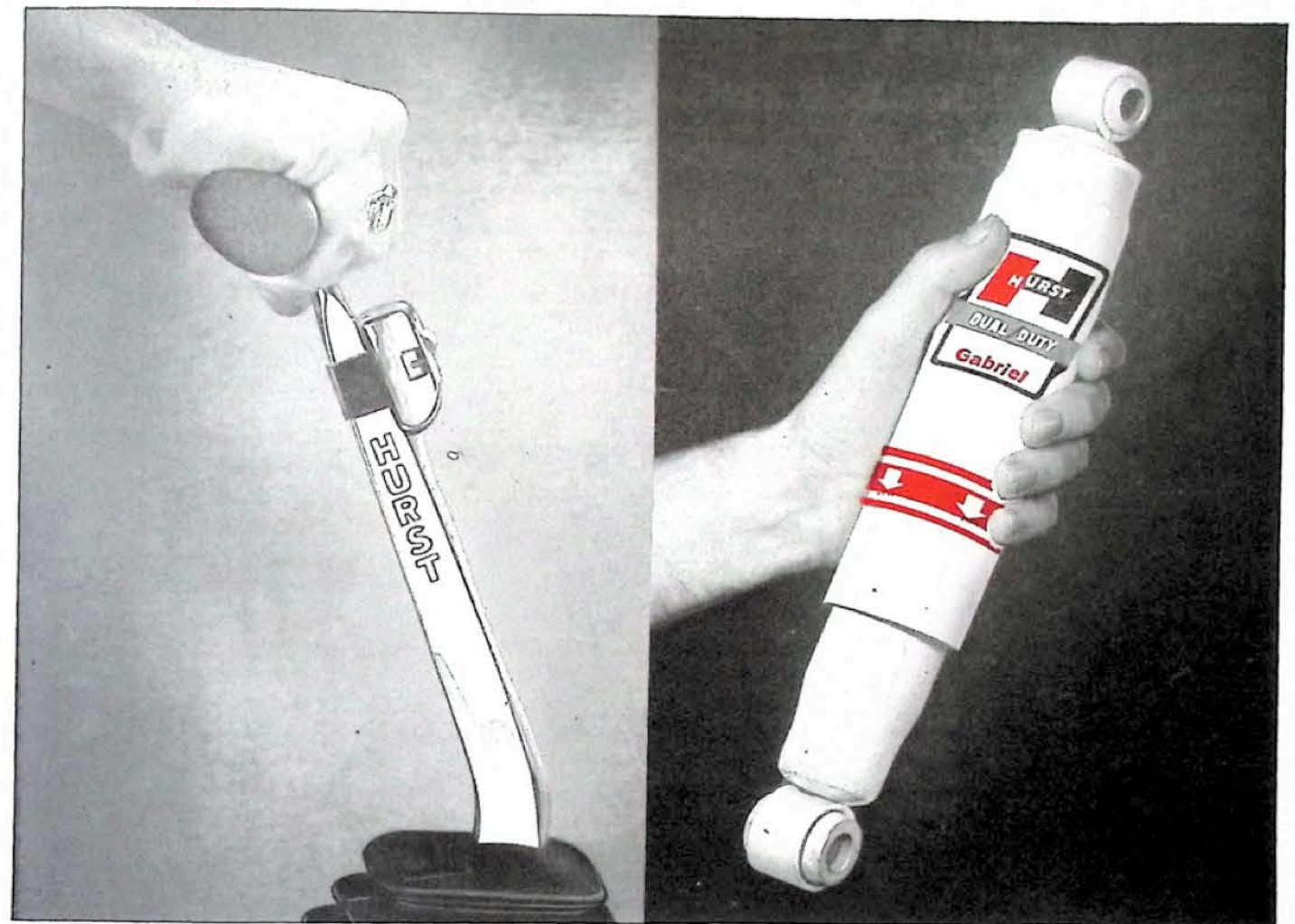
My choice for Car of the Year is the Chevelle SS454. In your article ("A Date With Three Strippers," Dec. M/T), you showed me it was a luxury car and a supercar in one. Anyway, just for the record, it should be given the coveted award just because it is the first GM car to be over 400 cubes. Maybe now GM will be able to compete with Chrysler.

David Stadterman  
North Versailles, Pennsylvania

I am quite annoyed at your nominees for Car of the Year. First and foremost, I notice you have included no European cars. It is well known that American cars cannot compete with European-built automobiles on the basis of quality. Why, then, do I not see cars like the

continued

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**IT'S YOUR NICKEL** *continued*

hold a candle to it. The Opel GT felt more like a toy than an automobile due to its light weight and steering, the latter not exactly confidence-inspiring. The GM people can be proud of themselves for the magnificent snow job they've pulled off.

Melvin Wilson  
Cashocton, Ohio

**Steam Dreamers**

When I read Mr. William J. Besler's comments ("Blowing the Steam Dream," Dec. M/T), I was forced to take exception to them in spite of his admitted knowledge as a steam engineer.

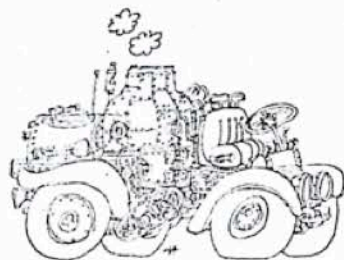
Mr. Stanley stated that when Fred Marriott was at Ormond Beach in 1907 in an endeavor to break his record of 1906 of 28.25 seconds for the mile, he was timed at almost 180 mph before his accident and, as he was increasing speed at all times, we do not think the speedometer could have been jarred very much to read 190 as indicated by Mr. Besler.

There is still a big demand for the steam automobile. They are not complex and can be readily maintained by steam mechanics as well as any good modern mechanic.

I would not dare to say the steam cars are dead yet.

Ralph E. Runels  
Lowell, Massachusetts

A quick scan through history will show that "experts" have been "blowing the steam dream" periodically for the past 40 years, but we pig-headed dreamers



and visionaries still keep pegging away at the notion that we're doing something worthwhile. I guess we have been brainwashed by having ridden in some really well-engineered, modern steam cars, and I am not referring to the gasoline engine conversions produced by your latest expert or his well-known customer.

H. D. Garner  
Newport News, Virginia

**Still Stripping**

After reading the supercar comparison (December M/T), I was disappointed in your fairness to the Road Runner. After all, you compared a 454 Chevy and a 429 Ford. Both were the top engines for those cars. However, the Plymouth had a 440 plus 6, not a top-line engine. The Hemi Road Runner can do a 13.42 (107.65) or better. The old "King Kong Hemi" is still King!

K. Lewandosky  
Montvale, New Jersey

*Yeh, and the Torino should've had a Boss 429 hemi. — Ed.*

# Winterize your oil.



Your car isn't really winter-weather-ready unless you've winterized your motor oil with STP. Let any car sit awhile—like overnight—and the oil, even all-weather oil, drains off the cylinder walls, pistons and other vital parts and runs down in the oil pan where it

stiffens from the cold. So in the morning there isn't always enough lubrication left on crucial parts to let the engine turn over easily without friction and wear.

STP helps your motor oil stay up without draining down. No matter how long your car sits or how

cold it gets. And you get the lubrication you need right from the start.

Make sure your engine has the added cold weather protection of STP Oil Treatment.®

Add a can with every winter oil change. To summarize: it winterizes.

**The racer's edge.**

**“We sprung our Firecracker 400 passenger rig. The vibration was really You’re tougher on yours.”** —Junior Johnson

Junior Johnson sets up racing cars with the same charging determination that made him a legend as a driver. By mid-1969, his Fords and Mercurys, with Lee Roy Yarbrough driving, had won the Daytona 500, the World 600, the Firecracker 400, and the Darlington 400 — all with an Autolite battery under the cowl.

“With two shocks per wheel, a big sway bar, heavy-duty everything, our suspension is really stiff,” says Junior. “The vibration is so bad, Lee Roy can hardly sit down next day. That Autolite battery takes all that

winner about 400% stiffer than a tough on our Autolite battery.

vibration right nicely. The plates in my Autolite have never come loose.”

Autolite racing batteries have a patented Vibration Guarded design. Plates are mechanically bonded, top and bottom. And press-fitted to stay put, despite 200 mph vibration.

“Racing’s tough on batteries. You’re tougher. You cold-start a lot. That drains fluid and

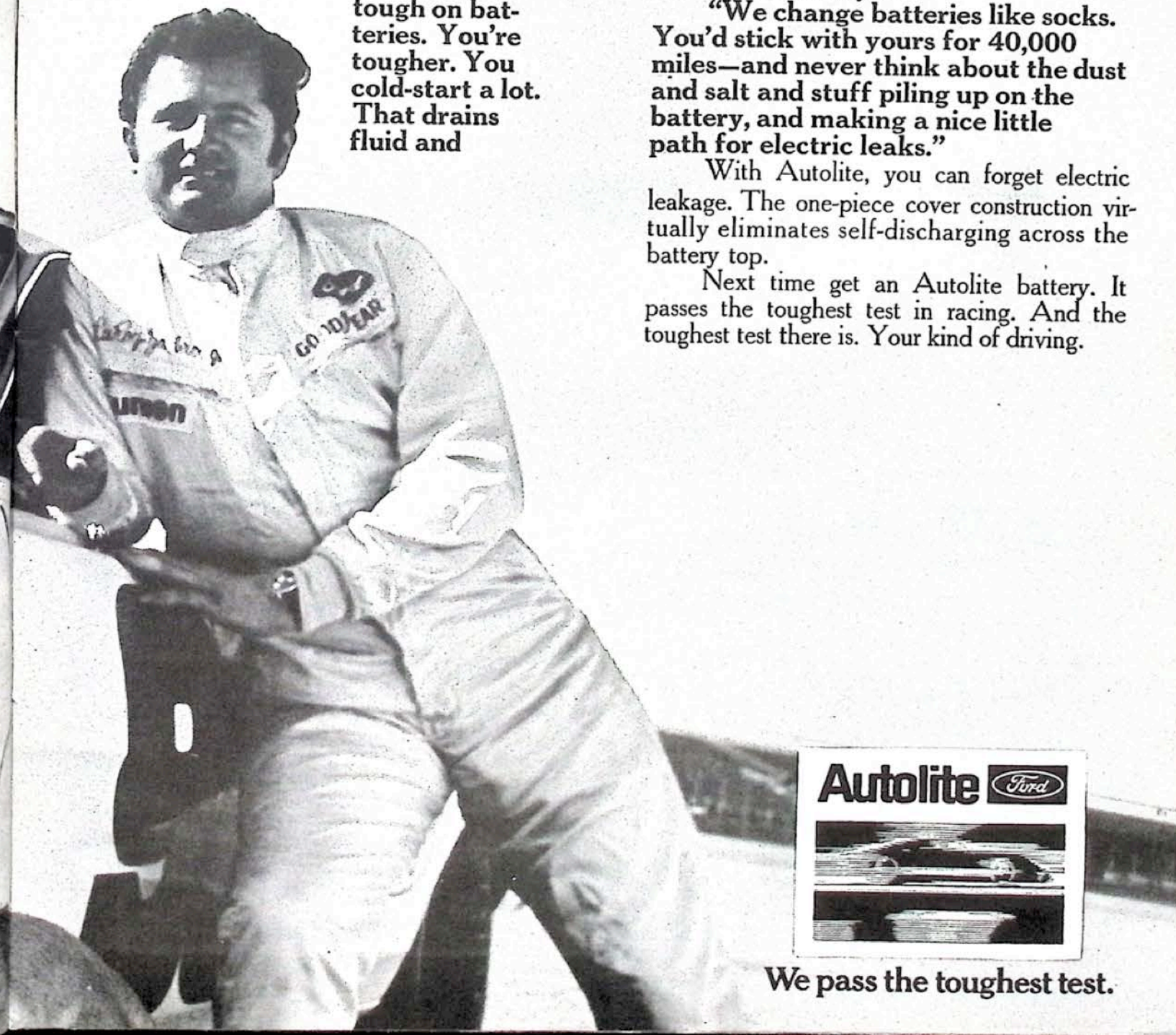
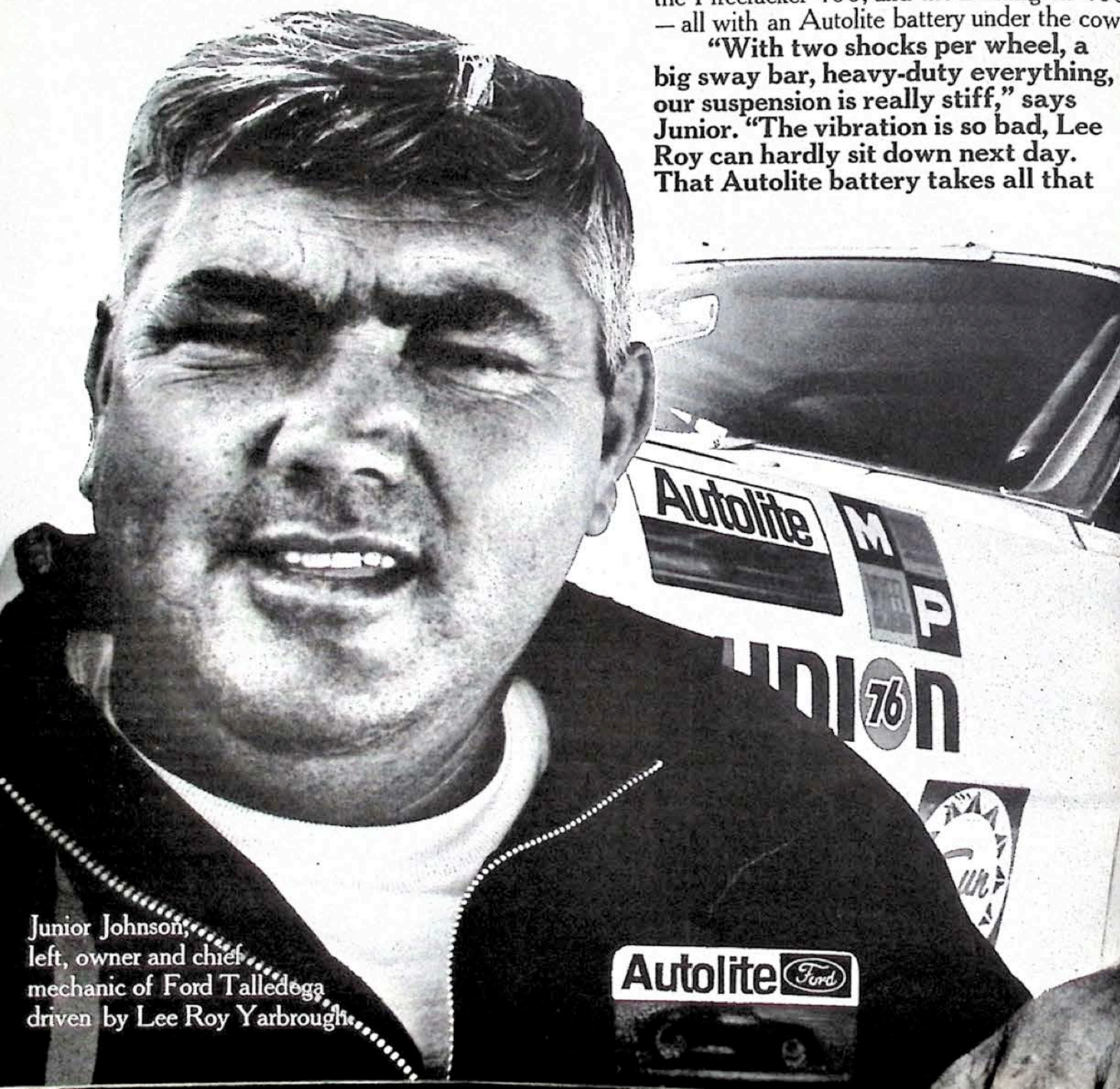
power. And then you don’t let the gas station fellow take time to refill your battery.”

That’s okay with Autolite. Its Sta-Ful reservoir has up to 3 times more water above the plates. And, in normal use, needs filling only about three times a year.

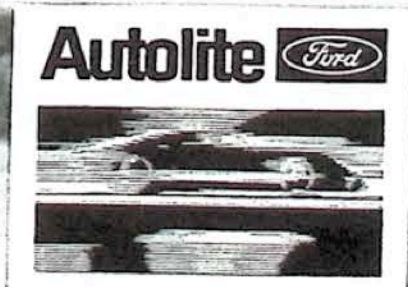
“We change batteries like socks. You’d stick with yours for 40,000 miles—and never think about the dust and salt and stuff piling up on the battery, and making a nice little path for electric leaks.”

With Autolite, you can forget electric leakage. The one-piece cover construction virtually eliminates self-discharging across the battery top.

Next time get an Autolite battery. It passes the toughest test in racing. And the toughest test there is. Your kind of driving.



Junior Johnson, left, owner and chief mechanic of Ford Talledega driven by Lee Roy Yarbrough.



**We pass the toughest test.**

In NASCAR stock car racing, where the drivers have never had much of a say and Bill France has had most of the say, Richard Petty stands out as the closest thing to a firebrand you'll find. He's doing what Curt Flood is doing in baseball, taking the professional athlete out of the grips of the they're-only dumb-athletes-and-have-to-be-taken-care-of syndrome and putting them into the position they belong as a vital, organizing part of the sport. It's rather like the monkey rebelling against the organ-grinder.

It's somehow fallen to Richard Petty to become the spokesman for the drivers on the NASCAR circuit. Part of the reason is the simple fact that he is president of the Professional Drivers Association, a group formed by the drivers to promote their goals, namely track improvements and pension plans. Another part of the reason runs deeper and started earlier, back when his father, Lee, was establishing the record for the most career wins by a NASCAR driver. That record stood until 1967, then Richard broke it.

So it only seemed natural that when we felt the NASCAR driver's story needed telling, we asked Richard Petty to tell it. He gives a brief history of NASCAR, where it is today, and what its future may hold. Most of all, though, he makes it obvious that in the next decade, as racing speeds and purses climb, so will the drivers' influence.

And he means it... for himself, for all the other drivers, and may be even for a 7-year-old boy named Kyle Petty who already likes to draw racing cars and tag them with No. 43.

— Editor

With the start of this new year, we're also getting started on another decade of automobile racing. It's going to be a critical one, especially in NASCAR's Grand National division with which I am primarily concerned.

A day never goes by without someone asking me about the future of the sport. Most of them are thinking about the immediate future, this season, after we went through so many radical changes and suffered so many growing pains last year. I don't have the answers for them but I do have some thoughts and suggestions on where we're headed.

I have always felt that the various organizations which make up the entire sport of auto racing have spent the past 10 years working against each other, fighting for supremacy. This, before anything else, must change if we are to progress. If, in the future, they would work hand in hand I have no doubts that our sport would be number one rather than number two [to parimutuel horse racing — Ed.] in nationwide attendance.

In any examination of the future, though, I think you must first consider where you have been. In racing, especially stock car racing, the history is a short one. NASCAR first ran a Grand National race in 1949 and after 20 years we have come a long way. Most of the progress has been accomplished in the past 10 years.

When I first drove a car in competition in 1959 we were definitely on a minor league scale. Most of the tracks we ran were small ones with dirt surfaces. Daytona, which opened that year, was an exception, as was Darlington. But, for the most part, we ran the little shows and got the little purses. This affected the way we ran our operation. That season we had a little four-stall garage which was pretty much run-down as compared to today's. And we had only four people, including me and my brother Maurice, working on the race cars.

Look at the contrast today. David Pearson won over \$200,000, counting his money from the point fund, and in 1959 the top money winner earned only a fraction of that.

## rap 'n' pinion

"I have always felt that the various organizations which make up the entire sport of auto racing have spent the past 10 years working against each other..."



Richard Petty

Our shop now covers 15,000 square feet and we employ 15 people. The automotive manufacturers have come in with rich budgets and the accessory firms too have added money to the purses. We're spreading out of our southeastern home base across the country.

All that may sound about perfect. It's certainly put us on another plateau, a little higher than the one the sport was on for its first 10 years. But if we are to reach still another plateau, we can't stand still and be satisfied with what everyone has accomplished. We have to keep getting better, and some things have to change for us to do so.

Here's an example of what I mean. With all the progress we've made in 10 years we still run 100-mile races for the same first-place purse, \$1,000, that we did in 1959. We can't afford to sit still like that.

One of the first areas of change to be noticed will probably be the short tracks. As far as the Grand Nationals are concerned there will have to be a separation of the small tracks and the super speedways. There is not enough time and money and people to operate on both and do a first-class job. This doesn't mean that I won't run the majority of the races, no matter where they are, as I have done for 10 years. It just means that the time must come when I, as a Grand National driver, won't be available to run those small ones.

New super speedways have gone up, just in the past year, at Michigan and Texas. They're planning others in other parts of the country. The people behind them are building with a lot of good ideas. They're making the tracks wide and not so steeply banked, sacrificing speed. After all, competition — not speed — makes racing. This is a good trend.

There have also been marked improvements on facilities at some tracks in the past year and this is another positive sign. But this change is not yet complete. Daytona, for instance, stages the most prestigious race of the year with their 500-miler in February, but that track has no lounge or rest rooms or anything for the drivers. The only facilities we have there have been given to us by the accessory firms, who constructed shops in the garage area. We shouldn't have to rely on involved, but nevertheless separated, outsiders for these improvements.

These accessory companies, like Goodyear and Firestone and Champion and Autolite, have meant a lot to us. Purses have increased largely because of their participation. But I feel there should be more free enterprise among these companies. There are a lot of new people who would like to come in and who would be good for our sport but under the present setup the opportunities are almost nonexistent. A change here would mean more money for the participants in the sport and good advertising results for the companies.

Television will also play a very definite role in our future for the next 10 years. This medium had a tremendous influence on the popularity of professional football and golf, and it has also put a lot of additional money into those sports. It can do the same for us, while we can give it a popular product at the same time.

All of these "ifs," though, depend upon management of our sport. When I mention management here I do not mean the management from NASCAR officials alone but also management from us, the drivers and the car owners. You can include the automotive manufacturers and the accessory companies in that, too. Simply, it's just going to take the combined efforts of everyone, talking and planning and going hand in hand. Anything short of that may well result in regression.

— Richard Petty

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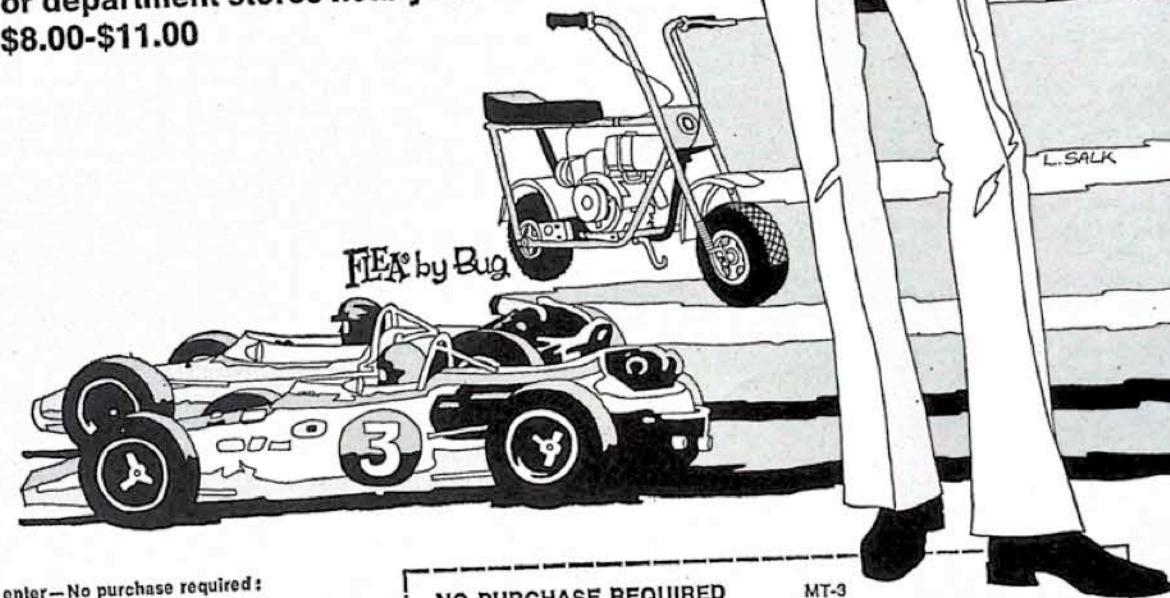
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2. Enter as often as you wish, but mail each entry separately. Entries must be postmarked by April 16, 1970 and received by April 30, 1970.

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# inside detroit

## First sketches of new GM minicar. Supercars take another blast. Safety takes a backseat to pollution.

**POLLUTION HAS REPLACED SAFETY** as the major problem facing the U.S. auto industry. The focus of attention by officials in Washington and Detroit has shifted to efforts aimed at cleaning up emissions from cars and trucks and pollution from the factories that build them. Auto critics have made it plain they're not satisfied with the results to date. Ralph Nader is pushing a nationwide student protest against pollution. Nader says the auto industry's top brass has not recognized the urgency of the problem and urges the government to break up General Motors because it is "indifferent" to the problem. The auto companies have served notice they got the message. Henry Ford II said as far as he is concerned pollution is the most important problem of the decade ahead and he publicly committed Ford Motor Co. to minimizing pollution from its cars in the shortest possible time. Ford and other men say they are even willing to abandon the conventional gasoline engine if need be. General Motors President Edward N. Cole says GM would not hesitate to scrap the internal combustion engine in order to eliminate the car's role in pollution, but warned against hasty action. Cole is zeroing in on the oil companies and says that with their help the present engine can be made "essentially pollution free" by 1980. He says some changes might be necessary in the fuels which power the engines. He recommends reducing the volatility of gasoline, adjusting its molecular structure and removing the tetraethyl lead. Reducing volatility would be particularly important "because it would bring immediate reduction of emissions in all cars — new and used," he said. As for lead, he said it has to be removed if advanced control systems are to be used. He admits that unleaded fuels would result in a loss of engine efficiency because of the lower compression ratios required. But he said it is possible that this loss in efficiency "could be recovered through improved fuels and fuel systems and engine modifications."

**A NEW MODEL — THE GRAN COUPE** — has been added to the Plymouth Fury lineup for 1970 according to Glenn E. White, Chrysler-Plymouth Division general manager. The



Air conditioning, power equipment, and patterned vinyl roof, along with a 383 V8, are standard on Plymouth's new Fury Gran Coupe models.

new car, available only as a two-door sports coupe, features concealed headlights previously found only in the high-line Sport Fury model. "Many desirable options have been made standard equipment at a special price on the Fury Gran Coupe," White said in his official announcement of the new car. Included as standard equipment in the Gran Coupe line are the 383-cubic-inch two-barrel engine; TorqueFlite

transmission; air conditioning; tinted glass; vinyl roof in either the standard Fury style, or a new walnut-colored patterned design; power steering; power brakes; solid-state AM radio; vinyl split-back seat with folding armrest; G78x15 white-wall tires; light package, with headlight time-delay and warning buzzer; outside left remote rear-view mirror; three-speed wipers; full wheel covers; three-spoke steering wheel with horn ring; body side moulding with color-keyed vinyl rub strip; instrument panel wood-grain applique; and ventless door glass. The Fury Gran Coupe is also available sans air conditioning and tinted glass.

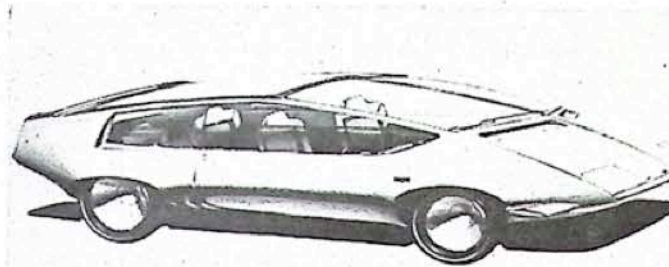
**CHECKER MOTORS IS ON A CRASH PROGRAM** to change the windshield design on its cars to comply with a new Federal safety standard. The regulation, which went into effect Jan. 1, prohibits pop-out windshields. A spokesman for the National Highway Safety Bureau said Checker had a design last summer which it thought would meet the new windshield retention standard. But they tested it and found it wouldn't comply. So they had to redesign it and this involved a substantial front-end change, the government says. The new windshield passes. But the Kalamazoo, Michigan firm which builds taxis and passenger cars said it needed 9 months to retool and begin production with the new design. They asked for an extension until next October 1. However, the government has given the firm until July 1 to make the changes. The safety bureau said it understood Checker could make the changes by that time. In any case, production isn't very large, little more than 5,000 last year.

**A NEW FAST-DRYING HIGHWAY PAINT** may end the nuisance of trying to negotiate pylons around lane striping work. PPG Industries says it's got a striping paint that allows motorists to drive over it track-free within five minutes.

**WHAT'S AHEAD FOR CARS OF THE 1970's?** There will be more innovations geared to the comfort of the user, things like rear window defogging systems. That's according to Harry Barr, new president of the Society of Automotive Engineers.

**THE DETROIT-CHICAGO ELECTRIC CAR EXPRESSWAY** is waiting. The what? A trade group interested in electrics says that the three-phased 220-volt outlets necessary to recharge the batteries on such cars are being installed at Holiday Inns across Michigan between Detroit and Chicago. The inns are "basically accessible to I-94," the group says. No kidding, that's the electric car expressway. This all came out during a press showing for another experimental electric car. This one was unveiled by the Copper Development Association. Their bag is that the car has 125 pounds of copper in its 3,000-pound chassis. The car lacked a body, set to be added this summer. "It may be unglamorous," admitted Len Budzen, the association's electronic market development manager. "But we believe this is the forerunner of a new breed of electric vehicles with unique capabilities. Never before has there been such a combination of acceleration, speed, and range." He said the unit has a top speed of 65 to 70 mph. At a constant speed of 40 mph it has a range of 150 miles. But at freeway speeds that is less than 80 miles. Which explains why there's a string of charging stations across Michigan.

**HAS YOUR LIFE BEEN SAVED** by a seat belt? Maybe your state ought to follow the example of New York State which has started a unique "Saved by the Belt" club. Membership is limited to those who have been saved by a seat belt in an auto accident. There already are a few hundred members in New York. The people got membership certificates signed by Governor Nelson A. Rockefeller. The hope is that by publicizing these life-saving cases other drivers will decide to wear belts, too. Only about 30 percent of the people wear lap belts while less than 5 percent wear shoulder belts.



Ford's car of the eighties has body designed to eliminate sound of wind. Car features sliding doors, no bumper, and Grand Prix tires.

**DODGE HAS A NEW MODEL CALLED THE T/A.** A distinguishing feature are big tires in the rear and small tires in the front. The tire combo, of course, is common on drag racing strips... and is another example of how drag racing has influenced Detroit.

**ABOUT 10 TO 20 PERCENT OF THE TIRES** Ford will use during the 1970 model run will be the new rayon-belted variety. Ford started using the rayon tires in November. Until then, most of the 1970 model cars had glass-belted tires. The exceptions were the Continental Mark III and the Thunderbird, equipped with radials, and the Maverick, equipped with the old standard bias-ply tires. Firestone and Uniroyal began offering the rayon-belted tires late in the fall and Ford agreed to use them after determining they met the same performance standards as the glass-belted tires. So some cars now have rayon, others glass-belted tires. General Motors, Chrysler, and American Motors have held off using the rayon-belted tires, however. A Ford man said "the percentage of rayon-belted tires we are using is still pretty low but we believe it will get up to 10 percent and may total 20 percent for the entire model run."

**GENERAL MOTORS UNDERTOOK A CRASH** program to make a rare running change on all 1970 model cars because of the Federal government's anti-theft regulation. The steering column lock had to be redesigned and retooled. The National Highway Safety Bureau gave GM until April 1 to make the change and GM said it would be able to meet the deadline. It involved what appeared to be a trivial modification to the steering column lock, but the job was a major project because of the midyear change. Ironically, GM began installing the steering column lock on 1969 models, more than a year ahead of the Federal standard which went into effect Jan. 1, 1970. The standard requires that the column, transmission, and ignition be locked when the key is removed. It also requires that a buzzer sound if the driver opens the door and the key is still in the ignition. This is to remind the forgetful drivers and prevent auto thefts. The GM design didn't quite meet the buzzer part of the standard. It was possible with the GM design to monkey with the key so that the buzzer didn't sound when you opened the door and the key was still in the ignition. The government required the change.

**WORK HAS STOPPED ON NEW SAFETY SEATS.** While researchers have now called for auto makers to step up research on safer seats, the firms have halted this work because they have turned all their attention to the air bag system now under development. The air bag is designed to end the need for shoulder belts. It pops open in front of a car occupant in an accident and cushions him. There is talk of putting it on some Ford cars later this year. General Motors says it could begin installing it in quantity in 1973 if there are no development snags. Louis G. Lundstrom, chief

auto safety engineer for General Motors, says of the safety seat, with built-in belts: "I doubt if we will ever get there because of the air bag. It is practically dead. But if something happens and the air bag loses out, then we will have to go back to the seat." Dr. William Haddon, Jr., president of the Insurance Institute for Highway Safety and former director of the National Highway Safety Bureau, says "it is unfortunate that they have stopped other research work because even with the air bag there ought to be room for the integrated seats."

**ANOTHER BLAST AT THE MUSCLE CARS** from safety hawks. Dr. William Haddon, Jr. has said that "the way the auto industry's pushing muscle cars borders on criminal irresponsibility." Haddon says that "instead of talking about safety transportation, they are converting the highway into a place for thrill seekers." All told, the performance cars accounted for some 600,000 sales last year. About them Haddon says, "Because of ad techniques, the image that is being sold at great expense to the American public is that you don't have safe transportation, you have thrills on the highway. Insurance loss rates are greatly higher on these cars. This is not the way for American business to protect the capitalistic system. The automakers are going to face condemnation by society and probably restrictions by government or they will put the curbs on the horsepower themselves. It's long overdue." Asked about the charges, General Motors President, Edward N. Cole, said the cars will be made safer but added that "as long as there is a demand for them I suspect they will be produced. I don't think horsepower was a factor in those accidents."

**NEXT AUG. 27 IS THE DATE** set for introduction of General Motors' new small car. The car will be introduced by Chevrolet Division about a month ahead of the other 1971 models. General Motors Chairman James M. Roche says, however, that on-time introduction depends on construction work at the GM facility in Lordstown, Ohio. The work has been behind schedule; Roche hopes that can be made up. Roche was asked whether it was true that the car would be called GMini, as rumored. "I have heard that name, too," he said. He didn't deny the report which is significant because Roche is noted for his integrity.



Street models of race-designed Plymouth SuperBird await transport to customers. Some 1,920 units of the aerodynamic car have been made.

**EVER DOZED OFF WHILE DRIVING?** Dr. Robert E. Yoss, a professor at the Mayo Clinic in Rochester, Minn., believes it's possible through laboratory tests to identify people who are likely to fall asleep at the wheel. He reports on results of tests on 12 sleepy drivers. The test is based on findings that when a person is alert his pupils are large. When he is asleep they are small and when he is tired they are intermediate in size. Yoss, using a device that measures pupillary waves, runs the test in total darkness. The subject is tested for 10 minutes and Yoss said it is much like driving at night for that length of time. Most alert people have no trouble remaining so for that test. But drivers with a history of falling asleep at the wheel would do so during his test. His 12 test drivers had the history and all failed his test. He said, however, that all 12 are licensed to drive without restrictions. Yoss believes his test is capable of detecting

continued

future sleepy drivers. He wants a widespread test of his device. If the pilot tests prove successful, he hopes that "someday all operators of motor vehicles on the public highways would be required" to take an alertness test just as they now have to take an eye test, a reading test, and a written test. If they prove to be sleep-prone they would have to be treated.

**THE DODGE CHARGER DAYTONA MAY LOOK "FAR OUT"** with its airfoil and all. But some Chrysler engineers say aerodynamic cars like the Charger could benefit all types of ground transportation. They said it "represents a significant aerodynamic improvement over all other present production American automobiles."

**CHRYSLER'S ANTI-SKID BRAKING SYSTEM** will not be along until the 1971 models are introduced. That's the word from top Chrysler officials. It will first be available on the full-size Chrysler cars. Part of the unit is made by Bendix, the auto firm says. Ford pioneered use of the anti-skid system, which is computer controlled, on the 1969 Continental Mark III. General Motors begins offering it this spring on the Olds Toronado and Buick Riviera.

**THE U.S. AUTO COMPANIES MISSED THE BOAT** when they decided to pass up Expo 70, the current world's fair being held in Osaka, Japan. Sure, the auto firms are miffed because they can't get into the Japanese market. But they passed up a golden opportunity to show the Japanese people what they are missing. They could have put up some classy displays and scored some points in the process. Instead, all they did was arouse the ire of some Japanese show officials who accused them of "a spiteful act."

**THE BIG SHAKEUP AT CHRYSLER** early this year isn't going to bring any dramatic changes right away. The company had already deferred some programs before John J. Riccardo was named Chrysler President replacing Virgil E. Boyd who was kicked upstairs to the new post of vice-chairman of the board. Riccardo's successor as head of North American auto operations is Eugene Cafiero, who was in charge of Chrysler's Latin American operations. Cafiero did say the company intends to start emphasizing the quality in its cars. "That is our area of opportunity," he says. Chrysler's sales were down last year. While all the companies seem to have fallen on hard times, things seem about the roughest at Chrysler, perhaps because it's the smallest of the Big Three auto companies.

**FORD'S DEVELOPING A SLIDING DOOR** for its mini-bus. This is to meet the competition from Chevrolet, whose new Chevy Van has one. Ford rested on its laurels for 2 years after bringing out the Econoline. There are some executives who say this type of minibus may well be the station wagon of the future.

**ROBOTS ARE GOING TO HELP BUILD** the new General Motors small car. GM has ordered 62 of the so-called Iron Mikes for the Ohio plants which will build the new car, now dubbed the GMini. They cost a total of \$1.5 million — but they work more than a 40-hour week and without fringe benefits. The robots are built by Unimation, Inc., of Bethel, Conn. The robots, called Unimates, are 4 feet high and have a 7-foot long, hydraulically operated arm. It operates in a radius of 220 degrees and its "hand" can be equipped with a variety of tools to perform a variety of jobs. One place the robots will be used will be in automatic welding operations.

**A LENGTHY STRIKE WHICH CLOSED** the Chevrolet assembly plant in Flint, Mich., has forced Chevy to reevaluate plans for a Monte Carlo convertible. There had been talk of bringing out a convertible model this year. Now it may not come about until the 1971 model run. All of which is no great loss anyhow because convertibles aren't so popular anymore.

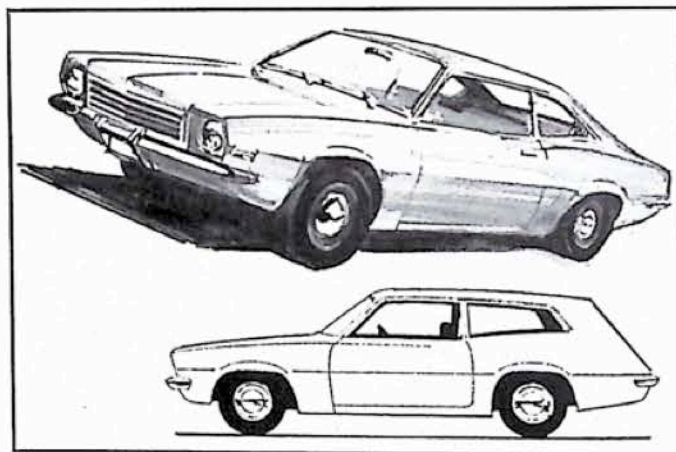
**CAR SEATS SHOULD BE MADE SAFER.** That's the opinion of Derwyn M. Severy, a researcher at the University of California at Los Angeles. Severy says that for a little more money, auto makers could build much safer seats. He wants to see seats which have the safety belts built-in. Seat-backs, he says, should also be built-up so that adjustable headrests

are not needed. This is already being done on some bucket seats. While it would cost more, Severy says "the slightly higher investment to improve motorist protection and comfort would be money well spent. In general, seats, when structured for collision safety, represent the single most important life-saving device available to the motorist."

**FANTASTIC RESULTS** are being reported by Texas authorities from the roadside safety devices they have been installing. About 80,000 break-away signs and poles are now in use. Over 500 cars have struck them with only one freak use. Over 500 cars have struck them with only one freak fatality and just one injury. Concrete abutments are being protected by barrels, with just as amazing results. Police filmed one case where a car traveling close to 80 miles an hour headed into an abutment but was stopped by hitting 38 oil drums strapped in front of the concrete. The two occupants suffered minor injuries. The devices are the work of the Texas Transportation Institute, part of Texas A&M University.

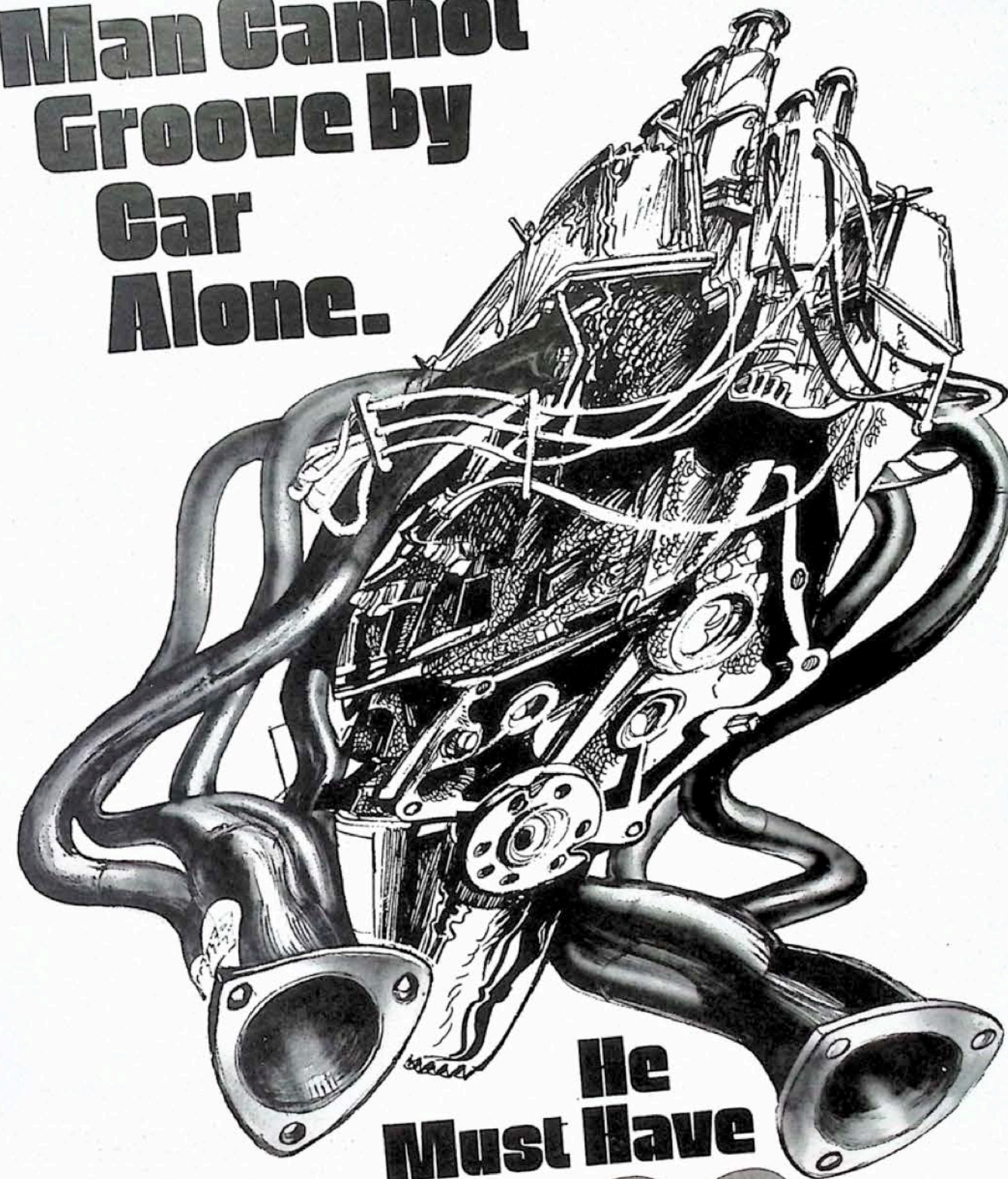
**MEDICAL PROBLEMS MAY BE CAUSING** more highway accidents than has been suspected heretofore. Dr. Julian A. Waller, specialist in preventive medicine at the University of Vermont, said studies have shown that people who suffer strokes have encountered driving problems before the attack. "They began to have deteriorating driving records a year or two before," he said. "Those who are headed for a stroke may have minimum impairment of their driving ability until they are pushed to the limit in a traffic emergency." Waller admits the trouble is that "drivers with medical conditions can't be identified before the accident."

**FIRST SKETCHES OF THE NEW CHEVROLET SUBCOMPACT** show the basic model to be a sleek looking two-door semi-fastback coupe. The car, called GMini, will have single headlights and a conventional grille with horizontal bars. It will not have concealed windshield wipers, according to early drawings. The hood will have a crease down the center and will be hinged at the front instead of at the windshield. And this might make it possible after all to hide the wipers



conveniently. The car has rounded sides with a horizontal sculpture line running the length of the car. It's a four-passenger car with high-back seats in front instead of headrests. The car has a semi-fastback roofline with single rectangular taillights, according to some drawings. Others, however, maintain the car will have two sets of oval-shaped dual taillights. The rear quarter panels also have some simulated air scoops. The engine, of course, is up front and is a single overhead-cam four-cylinder aluminum powerplant. Car is said to be getting over 30 miles per gallon on some engineering test runs. The basic car, about a foot bigger than the Volkswagen Beetle, will be introduced in August. A two-door sport coupe version of the GMini will be introduced in November. It has a fastback roofline and new side windows behind the "B" pillar. In December the company will come out with yet another roofline. This will be a stretched-out and squared-off roof, much like that on a station wagon. This will be sold in two versions — as a two-door utility wagon and as a two-door utility panel truck. It should rival that small Datsun truck from Japan. GM is aiming for a price of \$1,900 for the base two-door model, whose styling carries through into the 1970's the long-hood, short-deck theme popular now for almost a decade. /MT

# Man Cannot Groove by Car Alone.



**He Must Have**

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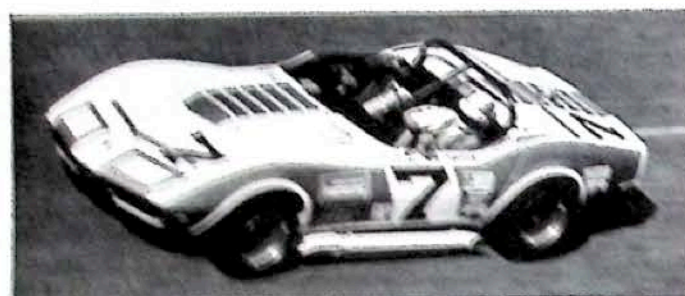
If what you're riding around in is more than just a car to you, your car needs more than just "exhaust pipes." You need an exhaust system from Hooker. Hooker Headers specially designed for your special car. Hookers. The new name for Headers. We would like to show you exactly what we have in mind for your car, and where you can get it. For \$1.00 you'll get our all-new color catalog of "Wild Tubes" plus price lists and the location of your nearest dealer. Another buck will get you a pair of 14 1/2" fender decals or write for FREE 4 1/2" heart decals.



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# ARRC conquered again—by the cars sparked by Champion!

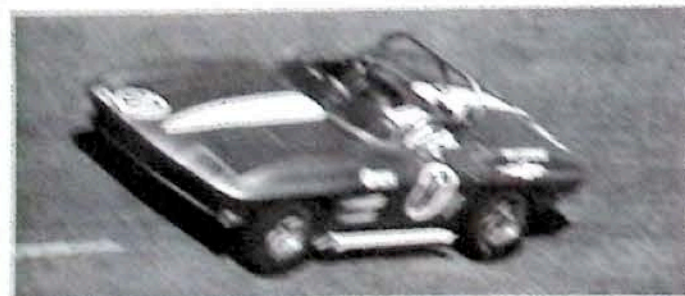
The 1969 American Road Race of Champions was the culmination of over three million miles of Sports Car Club of America road racing. More than 450 SCCA divisional points leaders from across the country came to Daytona International Speedway to compete for 21 national class championships. And 16 of the 1969 ARRC champions used the spark plug brand that fired the piston engine world speed records on land, sea and in the air. They used *Champions*—because they know *Champions* deliver maximum performance in every engine. Good reason to always run on *Champions*—the world's fastest spark plug!



**A PRODUCTION . . .** Jerry Thompson of Clawson, Michigan earns the title in the Champion-fitted Quaker-State Fiberglass team Corvette at an average 126.80 mph.



**E PRODUCTION . . .** Mike Downs of Falls Church, Virginia triumphs in his Champion-sparked Group 44 Triumph GT6 with a 97.05 mph average speed.



**B PRODUCTION . . .** Alan Barker of Jeffersonville, Indiana and his Champion-sparked Chevrolet Corvete take the title with a 102.88 mph average mph.



**F PRODUCTION . . .** Lee Mueller of Lynwood, California wins in his Champion-equipped Kas Kasher-prepared Triumph Spitfire Mk3 averaging 93.73 mph.



**D PRODUCTION . . .** Jack Scoville of Portland, Oregon averages 85.38 mph in his Champion-equipped Datsun SRL to win the D/P championship.



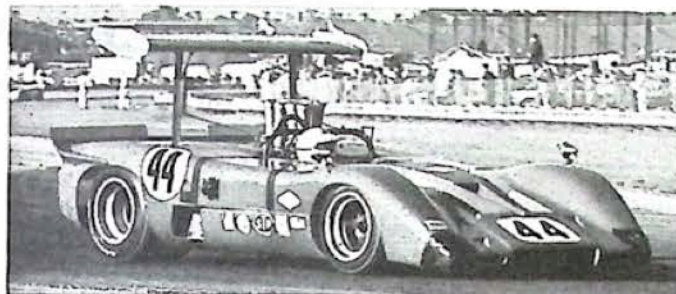
**G PRODUCTION . . .** Paul Spruell of Atlanta, Georgia and his Champion-sparked Alfa Romeo 1300 take the G/P class championship at an average 85.12 mph.



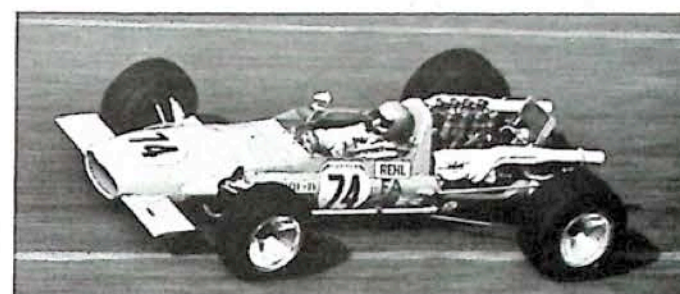
**H PRODUCTION . . .** Randy Canfield of Chevy Chase, Maryland carries home the national championship in his Champion-fired Sprite — averaging 83.15 mph.



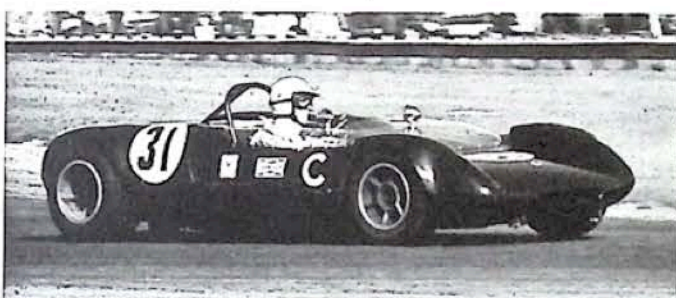
**C SEDAN . . .** Harry Theodoracopulos of New York City captures the national title at an average 88.29 mph in his Champion-sparked Alfa Romeo GTA Jr.



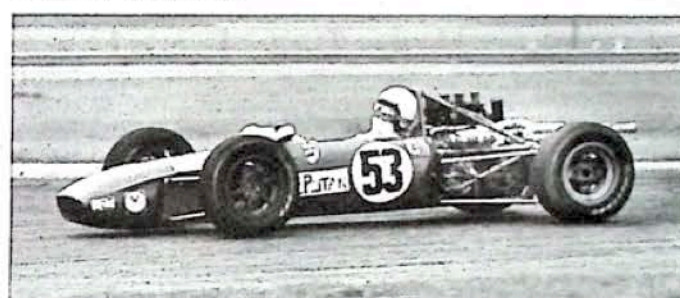
**A SPORTS/RACING . . .** Jerry Hanson of Minneapolis earns his third straight Champion-sparked ARRC title in a McLaren M12-Chevrolet at an average 113.52 mph.



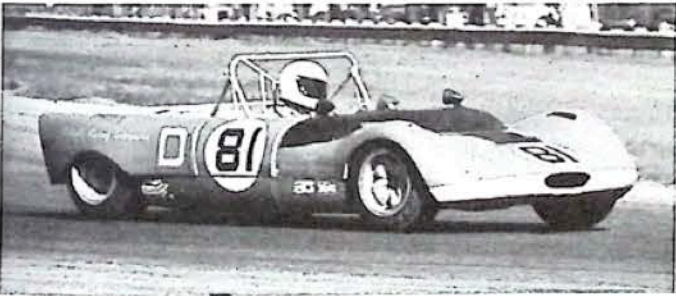
**FORMULA A . . .** Peter Rehl of Easton, Connecticut takes the class championship in his Champion-fitted Cooper T90-Chevrolet averaging 111.02 mph.



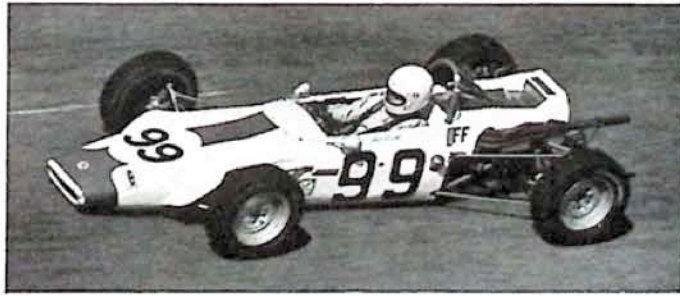
**C SPORTS/RACING . . .** Dan Carmichael of Columbus, Ohio wins the title at an average 95.71 mph in a Lotus 23B-Ford—equipped with Champions.



**FORMULA C . . .** Bill Rutan of Essex, Connecticut wins in his Tecno—equipped with Champions—at an average 102.31 mph over Daytona's 3.81 mile road course.



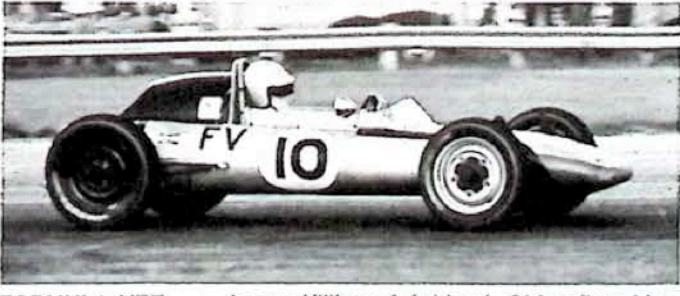
**D SPORTS/RACING . . .** Eric Kerman of Merrick, New York wins the national title by averaging 88.15 mph in his Champion-sparked Arachnid-Honda.



**FORMULA F . . .** Skip Barber of Carlisle, Massachusetts wins the first F/F national championship in a Champion-fitted Caldwell D9 Ford averaging 95.71 mph.



**A SEDAN . . .** Bill Petree of Riverview, Michigan is swept to victory at an average 103.33 mph in his Champion-equipped Chevrolet Camaro.



**FORMULA VEE . . .** James Killian of Ashland, Ohio pilots his Champion-sparked Zink-Volkswagen to the championship at an average 83.40 mph.

# import report

Wanna buy a C111? No way!  
Many new foreign models to come in '70.  
Rotary question goes round.  
BY EDOUARD SEIDLER

## Cars To Come

Last year was a great one for new cars in Europe. Competition being as fierce as it is, 1970 might be greater yet. Simca was first to move. It launched a pepped-up 1301 "special" version on New Year's Eve. The body was unchanged, but the car got a new rear axle reduction ratio and a more powerful engine: 77 hp instead of 66 on the regular model. Speed of the new 1301 moves up from 87 to 94 mph. A brand-new middle-of-the-range economy car is expected from Rootes, a "minicar" from Renault, a large 1.8-liter sedan from Simca, the front-wheel-drive "500," and a 1-liter from Citroën sometime in the fall.

GM's Vauxhall is testing with a new Viva which might also come out under the Opel badge as the next Kadett. Ford of Germany is remodeling its bottom-of-the-line fwd 12M, which is said to come as a conventional drive car. Alfa Romeo is ready to market a coupe derived from the "Montreal" prototype (body by Bertone, 2.6-liter V8). Rover is working on a brand new four-wheel-drive sedan.

British Leyland is due to pep up some of its existing models, and Renault will offer a rallye version of its latest car, the R 12. But two of the most exciting new jobs, to be unveiled in March at the Geneva show, will be a Jaguar and a Citroën-Maserati. The long awaited Jaguar V-12 is production-ripe. Its 5.4-liter engine will have a power output in excess of 330 hp. An eight-cylinder engine is in the works as well, but will probably be launched next year only. As for the Citroën-Maserati job, it will be a large 5-seater GT limousine using a brand-new 2.7-liter Maserati engine, incorporating Citroën's latest hydro-pneumatic suspension developments. Insiders feel that this car, expected to carry a \$7000 price tag, will bring about a revolution in performance, comfort, and safety equal to that which was achieved when Citroën launched the DS series.

## The End of the Lots

Are used-car lots bound to disappear? A group of French advertising executives certainly feels that way. Using mass advertising and an IBM computer, they created an exchange market of their own for second-hand cars. Prospective buyers and private car owners have only to call in their offers and demands, along with their asking or selling price. The information is punched on a card and fed into the computer. Two parties interested in any transaction can be matched in a matter of seconds. While used-car dealers generally

buy a second-hand vehicle at 15 to 20 percent below a semi-official weekly rating, which applies to all transactions, and sell it at 5 to 10 percent above the same rating, private deals are usually closed at 10 percent under rating and are therefore profitable to both parties, with a single risk only: no one will guarantee any car sold outside of the professional circuit to be safe. But the public seems inclined to take such a risk. Less than 6 months after their "private market" was launched, its promoters were making 500 contacts per day, of which two-thirds ended up in actual deals. The promoters request a nominal fee of \$22.00 per transaction and per party, which produces an average monthly gross income of almost \$350,000. Quite enough to cover telephone bills and computer rental fees!

## Rotary Scramble Continues

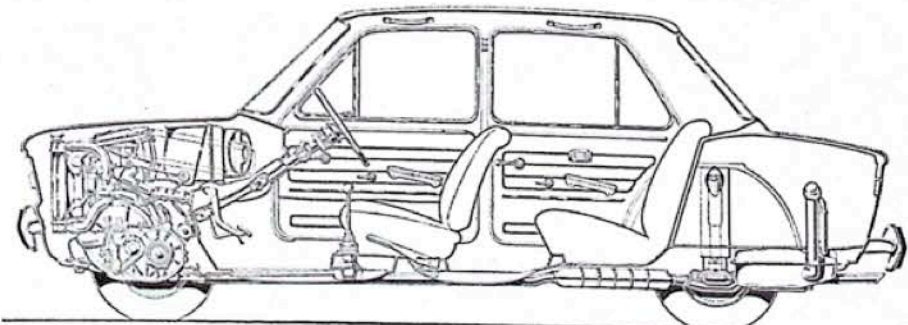
So, Mazda and NSU are here. Even air pollution controls won't stop you any longer from driving the R 100 or the Ro 80. But there is more to come, if you can wait long enough.

We were first to tell you about

Citroën's experimental rotary-powered M 35. Now we'll let you in on another secret: Mercedes is about to introduce a brand-new version of its C111 Wankel prototype, only six months after the first of these exciting butterflies roared out of the Stuttgart-Unterturkheim labs. This one could well be seen at the Geneva show in mid-March. Still-confidential plans call for construction of 50 units of this car. It will have a remodeled body to improve front and rear vision. Most of all, however, it will come with a four-rotor engine to replace the original three-rotor, in an effort to improve acceleration and low-end power.

Pick-up power, as other Wankel-engined cars have shown, is what rotary engines lack most for the time being. This holds true of Citroën's M 35 also. We drove prototype No. 2 (out of a coming series of 500) in the cluttered streets of Paris and on suburban highways, only to find that there was nothing wrong with the car except a rather hard gear shift, a certain lack of flexibility in the city traffic and insufficient response at low rpm. For one thing, this

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Fiat's 128, as yet not imported, has received praise from many European motor journalists as one of the best of the year. Roomy car has transverse-mounted mill and front-wheel-drive.

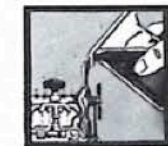
# How do we get more than a quart of lubrication in the can?

Easy. With true Pennsylvania grade oil, whatever the brand, you start with more lube-ability.

There's more oil in the oil from the Pennsylvania region — the finest natural product of its kind found anywhere. Naturally oilier. And it stays that way longer because there are fewer elements that smoke away or turn to sludge.

You really do get something extra in every can that says "made from 100% pure Pennsylvania grade crude oil."

## PENNSYLVANIA GRADE OILS



Oils that stay oilier

PENNSYLVANIA GRADE CRUDE OIL ASSOCIATION  
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stems from the fact that Citroën's 995cc single-rotor engine is presently 160 pounds heavier than an equivalent conventional power plant. Engine weight will be reduced before actual mass production starts, mostly through the use of aluminum parts to replace present steel elements.

Right now, the engine performs beautifully, considering its limited size, once you pass the 4500-rpm mark, and it is perfect at speeds ranging from 50 mph to its maximum 90 mph. It does the standing quarter-mile in 21.4 secs. and moves from 0 to 60 mph in 17.1 secs. The car is not meant to be a racer by any means, and the final engine will power an economy-class job, well in Citroën's long-established tradition.

One thing is sure: the M 35 suspension will be hard to beat, in this class and others. It incorporates Citroën's unequalled experience with hydro-pneumatic suspension, as used on the DS 21. Actually, we expected a lot from the engine, but we had to give best grades to suspension and road-holding, which are as close to perfection as one can come. The engine's major asset, as with all Wankel jobs, is its silence and lack of vibration, except at low speed. The noise level is so low that you can't tell what's going on under the hood unless you watch your rev counter at all times. Should you forget, a buzzer will fortunately remind you that you are in the process of over-revving and that it is high time for you to shift gears — an easy operation if you want to move up into third or fourth, but a much harder job when you want to move into first or second gear.

You won't have the same kind of trouble when it comes to cornering. The car offers hydro-pneumatic suspension on four independent wheels, with automatic correction to keep the car at constant height. The result is superb. The M 35 provides a Rolls-Royce quality ride (as a matter of fact, Rolls uses a Citroën patent on its own suspension) and much easier handling since the car weighs a mere 1793 pounds. This result will have an almost immediate bearing as far as Citroën is concerned, since the same suspension will be used on the new 1-litre flat four-engined car which the French manufacturer is expected to launch in the fall.

As for the M 35, it is no more than a test bed for the rotary-piston engine. Five hundred of these prototypes are to be sold this year to selected customers, in France only — so that Citroën engineers can follow results and failures of every one of them. Selection was a tough job: over 5,000 prospects (each of them driving an average of 20,000 to 75,000 miles per year) showed interest in the car and were willing to pay some \$2,500 to serve as test-drivers for the company. Nine out of ten were left out of the game. As one of them said: "Never mind. We'll probably be better off waiting for the final product, after all bugs are ironed out." That one should be out on the road sometime in 1971.

**Cash As Catch Can . . .**

No use trying. Whatever you are willing to pay, you won't get a Mercedes C111. A few British auto fans wanted to make sure. One of them offered Daimler-Benz 180,000 DM (\$50,000) for the Wankel-engine prototype. No deal. Another one handed Mercedes a blank check and ordered his bank to pay any amount against it up to half a million Deutschmark (slightly less than \$140,000). The check came back from Stuttgart with a laconic note: "Sorry."

**Ford Italiano**

Ever since Henry Ford failed in his attempt to gain control of Ferrari (which his personal friend, but fierce competitor, Giovanni Agnelli, managed to achieve in Fiat's behalf last year), Detroit's number two has been having Italian dreams. Whether Henry II's Italian wife, Christina, had anything to do with it is a matter of speculation. Whatever the case, Ford never gave up trying. Ford's offer to buy Lancia from cement king Carlo Pesenti and the Vatican came too late last year, and Fiat was there again to beat Henry's men to the deal. Now, at long last, Ford managed to turn *Italiano*. As *Motor Trend* was first to report, Ford decided to open a styling center right in the heart of Turin's coach builder's paradise, and it did. After Giugiaro refused the job, Filippo Sapino, a 29-year-old designer, was hired from Pininfarina to head Ford's new styling shop. By year's end, he was joined by a group of thirty stylists and employees whose responsibility it will be to come up with some of Ford's better ideas.

Moving one big step further, Ford also tied up with Turin's Alessandro de Tomaso, the father of the "Mangusta" and a few other odd metal beasts. A car maker and *carrosier* since he took control of the Ghia outfit, Argentine transplant de Tomaso will also be called upon to develop some futuristic styling in Ford's behalf. Beyond this duty, de Tomaso will have one main assignment: construction of a small series of sports cars for Ford, something along the line Carroll Shelby used to do for the Detroit firm. Henry Ford's first order to de Tomaso: between five and ten thousand units of

a mid-ship engine sports coupe, which Ford intends to use in its fight against the coming Chevy Corvette challenge. De Tomaso's car, with a price tag of about \$7,000, will be powered by a 5.7-liter Ford V8. It might be available sometime toward the end of the year or beginning of 1971. Preparing for production, de Tomaso gained control of the Carrozzeria Vignale only days after Alfredo Vignale, 59, was killed in a car crash near his Grugliasco/Turin factory last November.

Further encouraged by his fat contract with the Detroit boys (one billion lire — \$1.6 million — and more to come according to insiders) de Tomaso proceeded to fulfill his life-long dream of building a Formula I car and one of the better English drivers, beer heir Piers Courage, was contracted to steer it through 1970's world championship races. Guess what engine de Tomaso will fit into the back of his racer? A Ford, *naturalmente*.

**Mercedes Tries Again**

Daimler-Benz gained most of its modern glory over fifteen years ago in such events as the 24 Hours at Le Mans and the grueling Algiers-to-Capetown rally. Whether or not Mercedes cars will be seen again at Le Mans is still a big question, though Daimler-Benz has never given up testing with racing prototypes and more recently with the C111 and the latest 300 SEL. But Mercedes was willing to return to Africa right away. The idea, this time, was for a Mercedes 280 SE to pull a 2750-pound trailer all the way from Algiers to Capetown, over 10,000 miles of sandy, rocky, and muddy trails, with four men and 900 pounds of special equipment (including 440 pounds of food) on board.

The six-week-long expedition was to reach Capetown on March 1, and its cruising schedule called for an average 265 miles per day — the shortest stage being 60 miles and the longest 375 miles. Little was changed mechanically on the car. It got heavy-duty suspension, and three metal plates were fitted under it to protect the rear axle, the gas tank, and the engine. The standard 3.92 rear-axle ratio was replaced by the optional 4.08 reduction ratio. The compression ratio was reduced from 9.5 to 7.8 so that

*continued*



Modified Mercedes-Benz 280 SE, loaded with four men, 900 pounds of equipment, and towing a 2750-pound trailer, made a 10,000 mile journey from Algiers to Capetown in 6 weeks time.

# It's a plug for Sunday drivers.

Sunday isn't the only thing they share. They're both being sparked by an NGK plug. But chances are that as far as the driver of the wagon's concerned, if you've seen one spark plug you've seen them all.

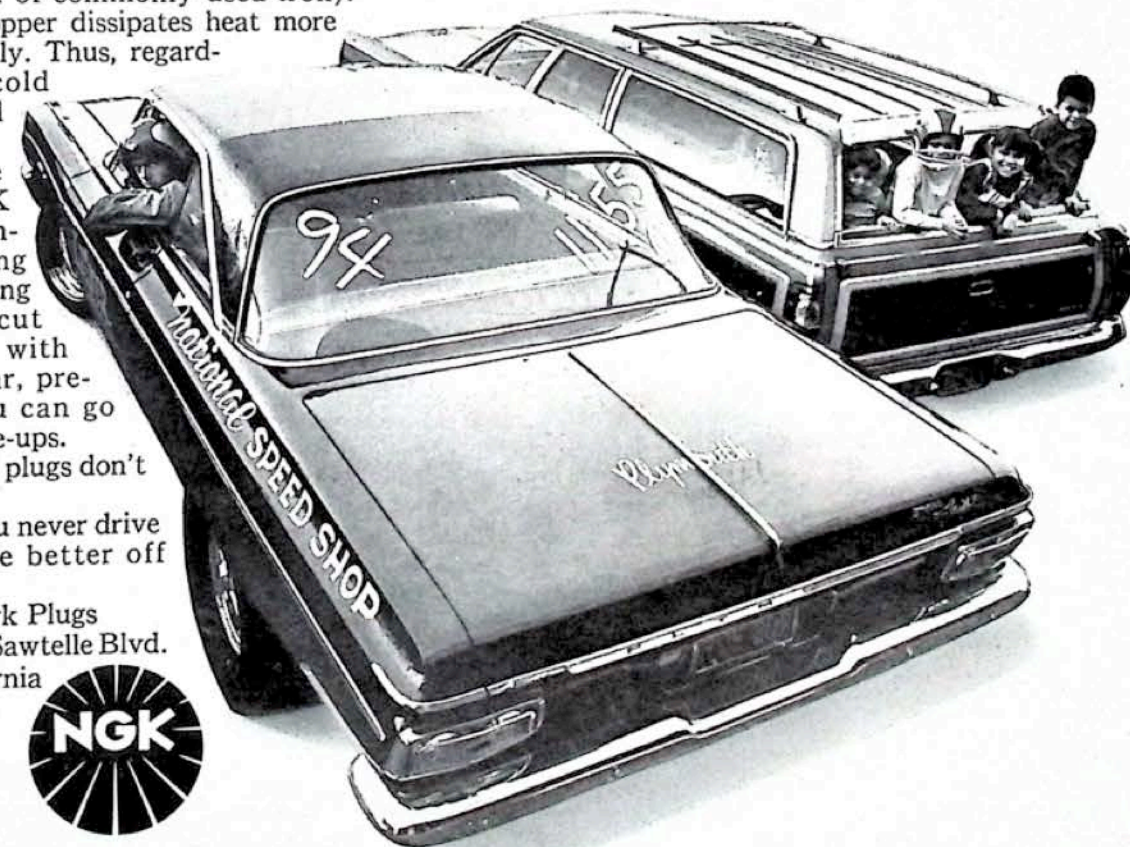
The Plymouth owner knows better.

Down deep an NGK spark plug is radically different with its central core of copper (instead of commonly used iron). NGK's heart of copper dissipates heat more quickly, more evenly. Thus, regardless of a hot or cold engine, hot or cold weather, or normal or high performance driving, the NGK plug delivers a constant, wide ranging performance. Fouling and misfires are cut way down. Along with gas waste, tip wear, pre-ignition. And you can go longer between tune-ups.

And NGK plugs don't cost a cent more.

Even if you never drive on Sunday, you're better off with NGK.

NGK Spark Plugs (U.S.A.) Inc., 4010 Sawtelle Blvd. Los Angeles, California 90066.





# Get Out of Debt In 90 Minutes Without Borrowing!

**'Loopholes' You Can Use to Escape from Hopeless Debt!  
How to Protect What You Have, Pay What You Can, Stop Bill  
Collectors from Pushing You Around!**

Now you can get out of debt—without borrowing! You can be free of debt worries—before you've paid another bill! You can learn facts your lawyer may not know—or be ethically unable to tell you! Stripped of legal doubletalk, in 90 minutes you'll find out:

How you can make yourself judgment and attachment-proof! How to force creditors to settle for a few cents on every dollar of debt!

How to use the little known Law of Debt Relief to protect what you have (your home, car, salary, possessions) from grasping creditors!

How to pay off debts—on YOUR terms!  
How to AVOID bankruptcy by PREPARING for it!

How you can use "Big Money Methods" to solve YOUR debt problems!

Why there are certain old bills you'd better NOT pay or even acknowledge!

How the Government stands ready to protect you against tricky creditors!

Why not owing ENOUGH money can be worse than owing too much!

How you can protect up to \$65,000 in assets, without paying a cent in insurance premiums!

All this and hundreds of other facts are fully and simply explained. These are facts that an international credit organization tried to suppress! With these facts, you can clean the slate, get more for your money, and have more to spend!

**YOUR LEGAL RIGHTS WITH CREDITORS.** How to beat a greedy merchant out of excessive interest charges—and even collect damages!...How and where to get free legal advice...How to win a lawsuit...Which creditors to pay first. The ones who are bullying you probably have the least chance of collecting!...The case for and against bankruptcy—and the help and forms you'll need!

How "going bankrupt" can actually improve your credit rating!...Where you can legally deposit your savings so they're probably safe, even if you go bankrupt!

**POWER OF MONEY MANAGEMENT.** Why you SHOULD be in debt to INCREASE your income! How you can SAVE on up to

**CASE HISTORIES**

A 39-year-old man, with a large family, was out of a job, hopelessly in debt, and lived in an old, rented house.

**TODAY**—Using the Power of Money Management, he has satisfied his creditors, bought an expensive home, 2 cars and a boat! What he did you can do—if you act now!

An engineer, working for one of the large aerospace firms, declared bankruptcy. But, using information contained in The Power of Money Management, he was able to salvage \$6,000.

**TODAY**—He's still an engineer, still working for the same firm. But, using the principles of The Power of Money Management, he invested \$4,000. Now he has a \$50,000 equity in \$200,000 worth of property. He did it! So can YOU!

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## IMPORT REPORT *continued*

the car could run on low octane African gas. To raise the car further off the ground, 15-in. wheels replaced the standard 14-in. wheels. Four hallogen beams were fitted instead of the regular street and road lights. A special bumper extending all over the front of the car was devised along the lines of the "anti-kangaroo" contraptions used by participants in long, gruelling the London-to-Sydney Marathon.

The equipment on board would easily qualify the four-man crew for Rommel's defunct Afrika Korps! They thought of everything, from an 11-transistor short-wave radio to a Winchester .375, an inflatable plastic windscreen, 6 bottles of Scotch whiskey, 10 ready-made spaghetti dinners and 40 cans of tunafish. A gourmet's delight.

"The trip is difficult enough," said group leader Pierre Charvel, a 43-year-old Parisian journalist. "We don't intend to make it tougher by not eating what we like."

The one and only thing Charvel—who set up the operation with factory backing—did not bother to do was to book hotel accommodations: "That's the one advantage you have when you pull your own trailer."

### VW From West to East?

Unlike its French and Italian competitors (Fiat and Renault alone do 80 percent of Western Europe's business behind the Iron Curtain), Volkswagen was never very keen on moving east. The bug people had enough to do west of their home base of Wolfsburg, Germany, all the way to Los Angeles, California. Times could change, though, and no one wants to give up a chance to make some extra profit, even if the cash spells "ruble," right? Since Soviet Secretary for Industry Tarasov was coming visiting to Germany last fall, there was no reason why VW boss Kurt Lotz should not meet with him, or was there? He did. And now you get the result: the Kremlin would be "quite interested" in hearing more about Volkswagen's idea of setting up a production plant somewhere in Soviet Russia, while Volkswagen insists on its "potential and wide experience in building factories even under most difficult conditions," as Dr. Lotz explained to Comrade Tarasov. All they need to do now is talk some more...

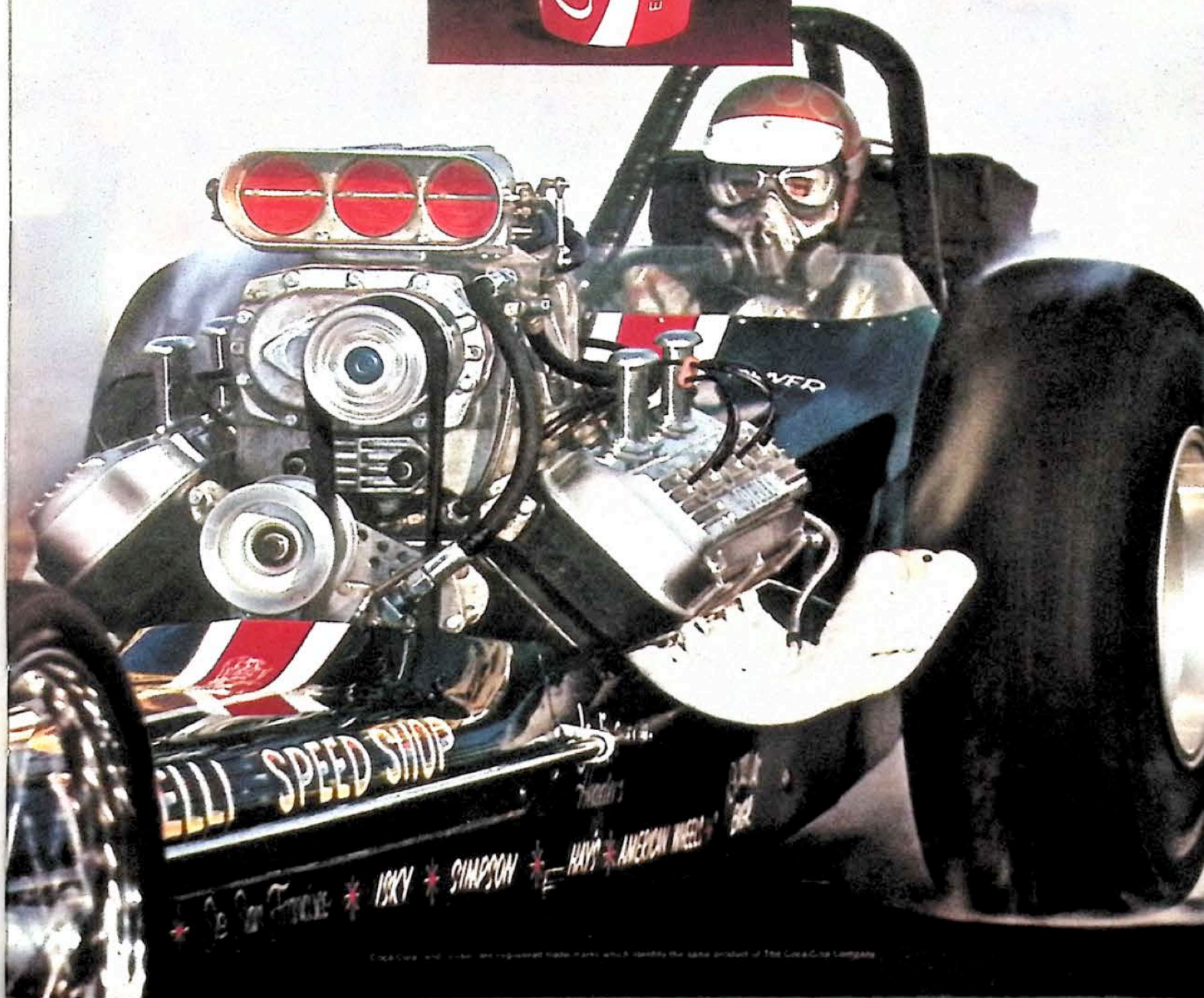
Should things not move fast enough between Wolfsburg and Moscow, there would always be another possibility in the Tokyo area. VW sent Gert Stiler von Heydenkamp, president of its Audi-NSU division, to Japan, where he met with Katsuji Kawamata, president of Nissan (Datsun). Reports from Tokyo had it that Germany's number one and Japan's number two would "cooperate in the financial, technical, and sales areas on all markets outside of Germany and Japan." Hours after the dispatch, a careful correction came from Wolfsburg: Messrs. von Heydekampf and Kawamata had only been "talking." What else do people in the auto industry do these days? /MT

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BY A.B. SHUMAN

The Z/28 Camaro hasn't been around very long, but in its short, successful existence it has managed to establish its own special charisma. Drawing equally from what it can do on the street as well as the track, this palpable aura has surrounded the Z/28, making it a sort of criterion on wheels, a standard by which to evaluate the performance or handling of anything that pretends to be more than mere transportation. It was a car born out of the SCCA rule book and, specifically, the section covering Trans-Am racing. Far from being the ultimate, it was nonetheless the closest that the vast majority of its owners would ever get to owning a Ferrari, and it was one of the few cars you felt perfectly sure could make it all the way cross-country at 6000 rpm. Thus, the '70 version has quite a heritage, but, alas, the Z/28 as we knew it no longer exists. In its place is a sporty "grand touring car" with a smooth ride and low noise level. And they'll probably sell a million of them.

Some will say that the change came about because of the new rules for Trans-Am: the manufacturers no longer have to actually market what they race. But it's not as simple as that, and, besides, Detroit doesn't move that quickly. It really started three years ago, when Camaro engineers got their first look at the styling drawings and clay models of what was to be their '70 car. (Current U.S. marketing philosophy holds that it is styling that sells cars, therefore it comes first; engineering is secondary.) They saw the car not as a snarling racer, but as an American version of the European-style grand touring car. The die was cast. Priorities were set for ride, performance, handling, comfort, etc., and the engineers went about the work of making the fact fit the image. And what they sought they got.

All of this is somewhat strange because Pontiac engineers, looking at basically the same shape, came up with a completely different approach for the Firebird, especially the Trans Am, which is an unabashed attempt to out Z/28 the Z/28. Score one for overkill. Because of this it seems natural to compare the ride and handling of the Camaros and Firebirds, and in doing so we find that the Camaros are, on the whole, more softly sprung, more quiet, more docile, more forgiving. All of this stems from what's under the pretty paint and body work. The single-leaf rear springs have been replaced with low-rate multi-leaf units that produce soft ride in conjunction with the increased vertical travel of the rear axle (made possible by the raised driveshaft tunnel, which also divides the rear seats into two semi-buckets). The shocks are stiffer and stagger-mounted to reduce wheel hop under power. At the front there is a new partial frame section, with larger side rails and a large, single front cross-member where formerly there were two. The front suspension remains independ-

ent, with coil springs and unequal length A-arms, but tread width has been upped 1.7 inches and use of a new steering knuckle which increases the span between the upper and lower ball joints by 1.4 inches has cut suspension loads. The A-arms have also been widened to provide a greater bushing span at the frame mounting points, reducing the force concentrations at the mounts. Like the Firebird, the Camaro has been fitted with a steering box which mounts ahead of the front wheel centerline. Due to differences in their Pitman arms, the overall linkage ratio on the Camaro (.94:1 with power steering) is faster than that on the Firebird, but, due to differences in stabilizer bar sizes, the steering response is faster on the Firebird. All Camaros use a 15/16-inch front bar (with a 1.00-inch option for the Z/28), while the 'Bird bar can be

up to 1.25 inches in diameter. Camaro engineers explain that they were not seeking a high roll rate, but a smooth, stable ride. The variable-ratio power steering, which reaches an overall ratio of 10.9:1 at the limit on the Z/28, has been changed to give twice on the on-center road feel on SS models and Z/28s. Non-power single-piston front disc brakes are standard on all Camaros, with power-actuation optional. All have a proportioning valve which is designed to prevent premature locking of the rear brakes by bleeding off pressure when a predetermined level (250 psi) is reached in the rear lines. This system doesn't interfere with the safety system which supplies full pressure to the rear brakes should you lose the fronts.

There are various optional performance suspension pieces, all grouped under the F41 listing, which are available

## '70 Z/28: THE GRAY DECEIVER



SPECIFICATIONS		Performance Automatic	
Engine type	OHV V8	Acceleration (Two Aboard)	
Bore & stroke	4.00 ins. x 3.48 ins.	0-30 mph	3.0 sec.
Displacement	350 cu. ins.	0-45 mph	5.0 sec.
Max. horsepower	360 @ 6000 rpm	0-60 mph	7.0 sec.
Max. torque	380 @ 4000 rpm	0-75 mph	9.9 sec.
Compression ratio	11:1	Standing start 1/4 mile	15.4/94 mph
Carburetion	1 4-bbl.	(auto), 14.9/97 mph (stick)	
Transmission	automatic and four speed	Passing speeds	
Final drive ratio	F60x15	40-60 mph	3.4 sec.
Tire size	3.73:1	50-70 mph	4.0 sec.
Steering type	variable-ratio power	Speeds in gears at rpm	
Turning diameter	36.8 ft.	1st	48 mph @ 6000
Brakes	power front disc/drum rear	2nd	81 mph @ 6000
Front suspension	independent, coil	3rd	119 mph @ 6000
Rear suspension	multi-leaf	Stopping distances	
Body/frame construction	combination body-frame with separate front ladder frame	From 30 mph	20 ft. 11 in.
Wheelbase	108 ins.	From 60 mph	146 ft. 6 in.
Overall length	188 ins.	Stability	Fair to good
Width	74.4 ins.		



Chevrolet told us it wasn't a racing car... and, you know, it isn't.

to beef up the basic handling. The Z/28 comes with an 11/16-inch rear stabilizer bar, the option on everything else is 9/16. The idea is to have good ride with acceptable roll, so each F41 package is tuned to the engine, transmission, and tires on the particular car for which it is ordered. The result is that wheeling the car through tight turns at high speed does produce a good bit of roll, but the machine is always easy to control. If it does want to get away from you there's usually enough advance warning so that you can back off the throttle or otherwise correct before you lose it completely. The car seems easier to run through left hand turns though, as the center console provides a good place against which to brace your right leg. (The bucket seats, while better than last year's, still don't have as much lateral support as they should, though there was an abortive attempt by some of Chevy's young Turks to get better seats from an outside source. The blasphemous plan was doomed from the start because Fisher Body's got a monopoly on such things, supplying the complete finished body, from firewall to rear bumper; the individual divisions supply the chassis and the front end sheet metal.

The engine choices start with the humble 155-hp six and 200-hp 307-cubic-inch base V8, quickly fleeting up to three varieties of 350 V8, including the 360-hp LT1 in the Z/28; 350- and 375-hp 396s (which are actually 402s); and, inexplicably, a soon-to-be released 454, the 450-hp LS6. A three-speed manual transmission with Inland floor shift linkage is available with either of the base engines, but all the others require a four-speed or Turbo-Hydro. The

one exception is the 300-hp 350 which can also be had with Powerglide for those masochists so inclined. They've taken away the 302, but have tried to make up for it by making the Z/28 available with an automatic. Even though this is not merely a Turbo-Hydro 350, but the stronger Turbo-Hydro 400, driven through a special 2400 rpm stall speed converter, it wasn't altogether a good trade. But, at any rate, we felt that this was the combination which would generate the most interest, and spent the majority of our test session on it, getting partial figures for the stick Z/28 for comparison.

We found that when left to its own devices, the automatic shifted right at 6000 rpm, sending the car through the quarter-mile in 15.4 seconds with two aboard, causing editor Dahlquist to remark, "Isn't this abominably slow compared to the original 350 Camaro?" Torquing it up and shifting it manually it still turns the quarter in 15.4, but you do have a greater feeling of personal accomplishment while winging through the lights. The four-speed car was just about a half-second quicker, hitting a best of 14.9 on the drag strip. The figures aren't that bad, but are still below expectations in view of the supposedly stronger engine, basically a 350-cubic-inch 302. The only real difference is in the camshaft, which has been changed to give greater low-speed torque.

The old engine was rated at 290 hp, the new one at 360. The old torque figure was 290 lbs.-ft., the new one 380 (at 4000 rpm). The whole thing is still built to run at high speeds, with extruded aluminum pistons, forged crank, and forged rods. We only ran it to 6000 rpm in top gear (119 mph with the standard

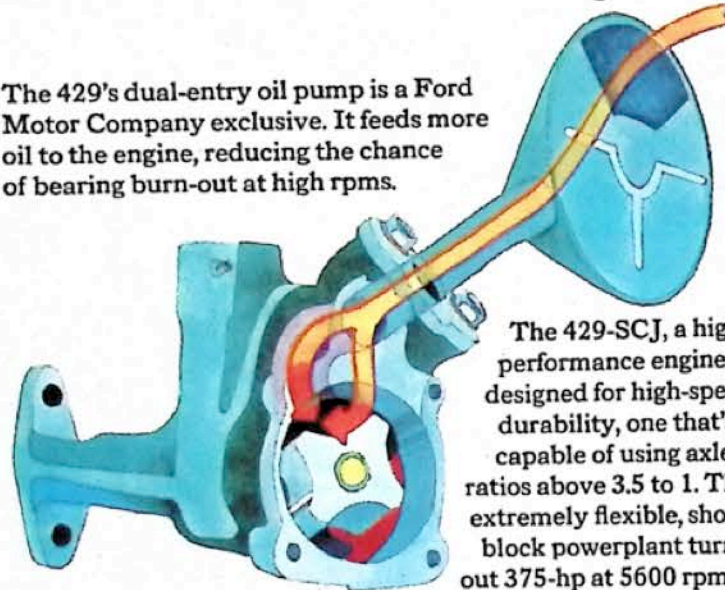
3.73:1 gearing and F60x15 tires), but it felt like it would go past the redline to 125 mph.

In testing the braking of the stick and automatic Z/28 we encountered differing results. The first stop from 60 mph in the automatic car produced an unbelievably short distance of 114 feet. Subsequent stops all required over 145 feet, some accompanied by severe shuddering and shaking. The four-speed car exhibited none of this and, in fact, resisted all efforts to lock up the brakes, stopping in essentially the same distance as its mate (146'). It's difficult to analyze the source of the trouble with the automatic car, but it may have resulted from the extreme usage visited upon it the day before at the general press preview. Both cars had new front brake pads installed prior to our tests, but the problem may have been related wear on the brake rotors themselves. The stops were all very straight, with only an occasional slight tendency toward a rear skid at the very end of the stop. In any case, there was never a problem of getting sideways or taking up more than one lane.

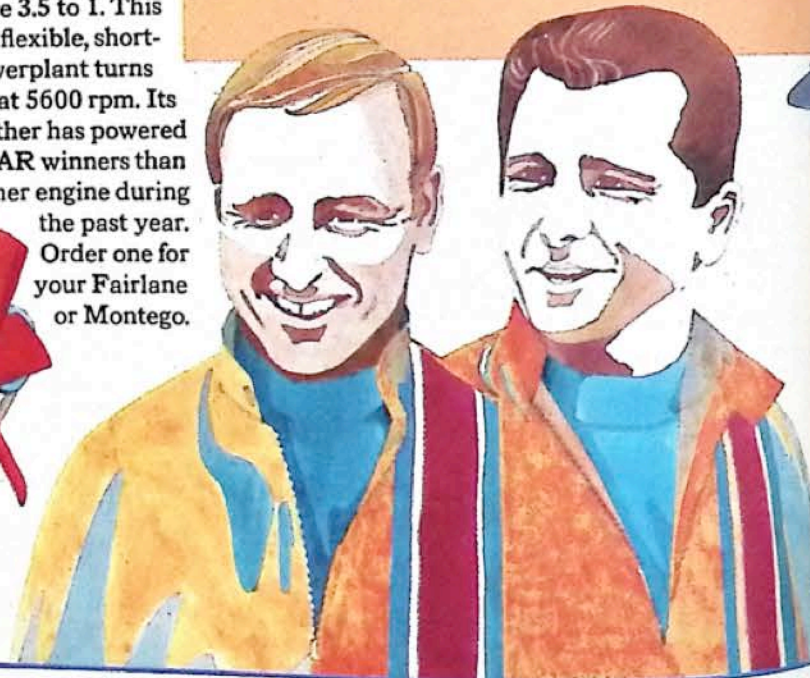
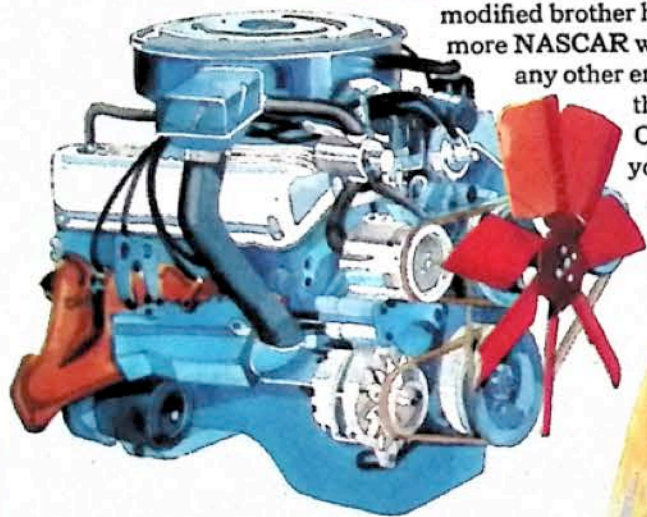
In general driving, the cars are all exceptionally quiet, the product of extensive effort at sound-proofing, sealing, and acoustics engineering. The base cars, like the 250-hp 350, are silent to the point of distraction. They are also slow to the point of distraction. Handling-wise, they can no longer, with any integrity, be referred to as "huggers," but they are safe, predictable and easy to drive. Beyond that, they look good and will probably be successful in sales. They might even be all that their new owners want of them; they will not, however, be all that they were. /MT


# With every 429-SCJ, we toss in a bit of LeeRoy & Cale, some high-banked ovals, and a dual-entry oil pump.

The 429's dual-entry oil pump is a Ford Motor Company exclusive. It feeds more oil to the engine, reducing the chance of bearing burn-out at high rpms.



The 429-SCJ, a high-performance engine designed for high-speed durability, one that's capable of using axle ratios above 3.5 to 1. This extremely flexible, short-block powerplant turns out 375-hp at 5600 rpm. Its modified brother has powered more NASCAR winners than any other engine during the past year. Order one for your Fairlane or Montego.

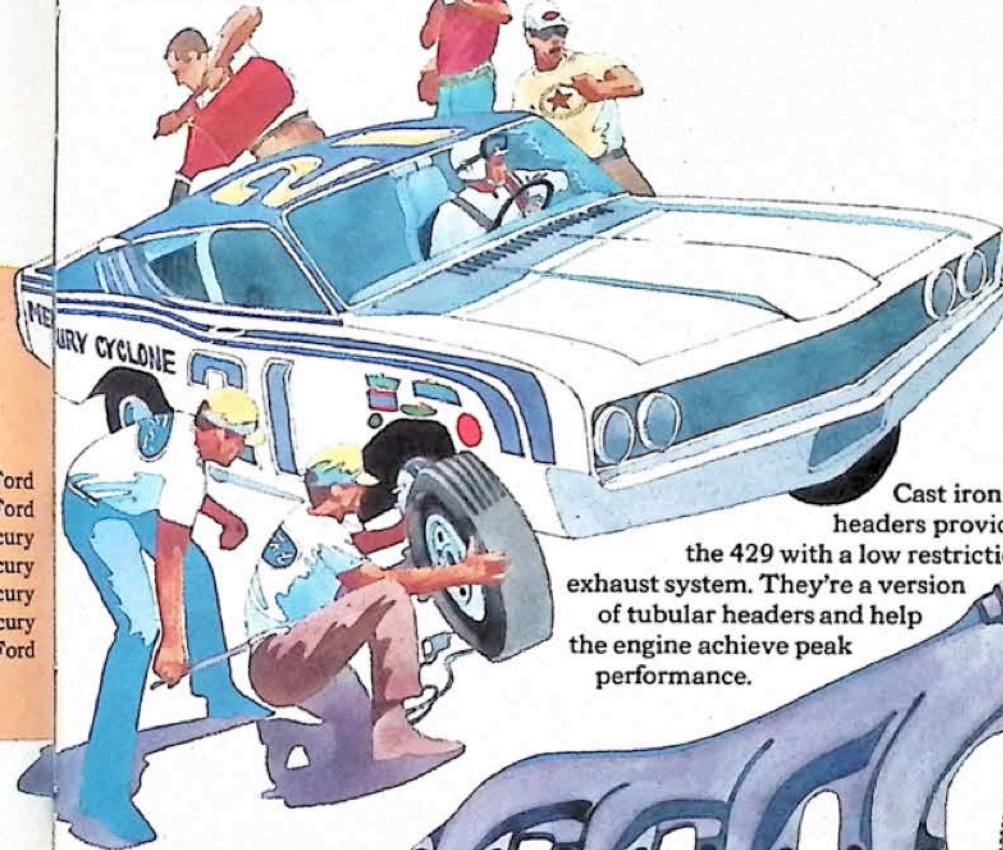


POWER BY 

### WINNING THE BIG ONES

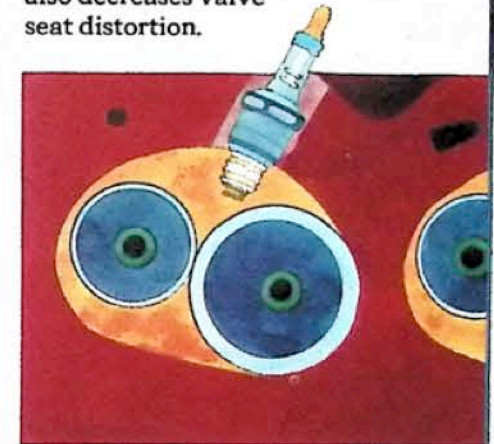
- |                          |                        |
|--------------------------|------------------------|
| 8/13/69, Dixie 500       | L. Yarbrough, Ford     |
| 7/4/69, Firecracker 400  | L. Yarbrough, Ford     |
| 6/15/69, Motor State 500 | C. Yarborough, Mercury |
| 5/25/69, World 600       | L. Yarbrough, Mercury  |
| 5/10/69, Rebel 400       | L. Yarbrough, Mercury  |
| 3/30/69, Atlanta 500     | C. Yarborough, Mercury |
| 2/20/69, Daytona 500     | L. Yarbrough, Ford     |

Coming out on top after 500 grueling miles at places like Daytona and Atlanta takes more than luck. It takes better ideas like dual entry oil pumps. And many of these same better ideas that put "Power by Ford" cars in winner circles all over the southland, will be found in our production engines—like the 429-SCJ.

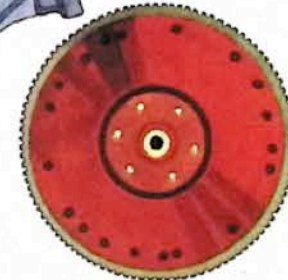


Cast iron headers provide the 429 with a low restriction exhaust system. They're a version of tubular headers and help the engine achieve peak performance.

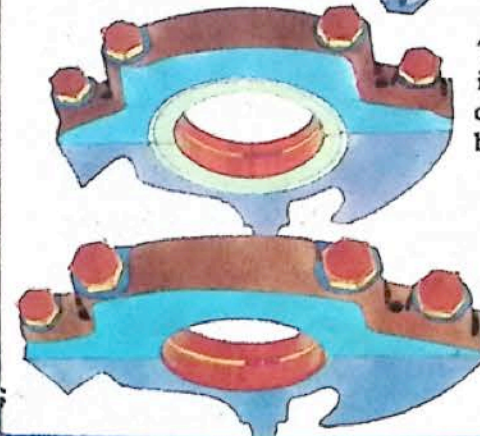
With all its racing heritage, you'd expect 14-mm plugs in the 429. Fear not, they're there—resulting in more water around plugs and valves. This extra water not only means better breathing and cooling, but also decreases valve seat distortion.



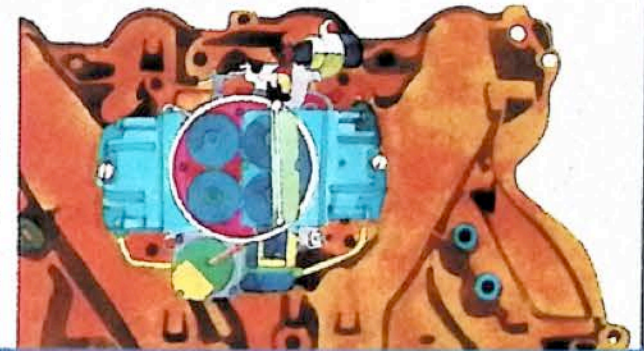
The nodular-iron fly wheel is a safety feature. Since it's stronger than usual gray cast-iron wheels, its burst speed is greater.



The 429's modified block includes 4-bolt main bearing caps (at 2, 3 & 4 positions) for better high-speed durability.



You won't find the 429 suffering from lack of oxygen. Its Holley 4-BBI carb, rated at 780 CFM is coupled with a high-rise intake manifold. That's what breathing is all about.



We compete at the track for the same reason we experiment in the laboratory. To develop better ideas to make the "Power by Ford" cars you buy, run stronger and last longer.



... has a better idea.

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A 24½" x 33" poster showing a 429-SCJ exploded engine assembly. Plus two "Power by Ford" decals. Send your check or money order for \$1.00 payable to:

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This offer expires August 31, 1971

MT-3



It was shortly after the turn of the century. A young Swiss engineer from Geneva, Marc Birkigt, journeyed to Barcelona armed with plans for an automobile he had designed. A precise, albeit fledgling, engineer, Birkigt found a wealthy Spaniard, Señor Damien Mateu, who shared the young man's interest and fascination for cars, and soon thereafter the *Sociedad de Automóviles Hispano Suiza* was incorporated, so named because of its bi-

national origin (*Hispano*, Spanish; *Suiza*, Swiss). Hispano Suiza is a label familiar to all connoisseurs of fine motor cars, for it is among the few that dares lay claim to being the most sophisticated in design achievements, indeed the most advanced automobile of its time, a product of engineering excellence. And a motor car whose proud heritage spans a 50-year history of automobile piston engines to Grand Prix racing to aircraft

engines and synchronized motor cannons to nuclear engines as recently as 1962. The car shown here, a 1925 model, has been meticulously restored and maintained by its owner, M.L. Bud Cohn of Los Angeles, himself a collector of, and respected authority on, fine vintage automobiles. Mr. Cohn's "Hisso," as they are frequently referred to, is a French model, as were all built from 1911 on, after

PHOTOGRAPHY: FRED ENKE



# HISPANO SUIZA

*A silver stork gracefully adorns one of the most extraordinary automobiles ever created, and serves as a splendid symbol of its proud heritage.*

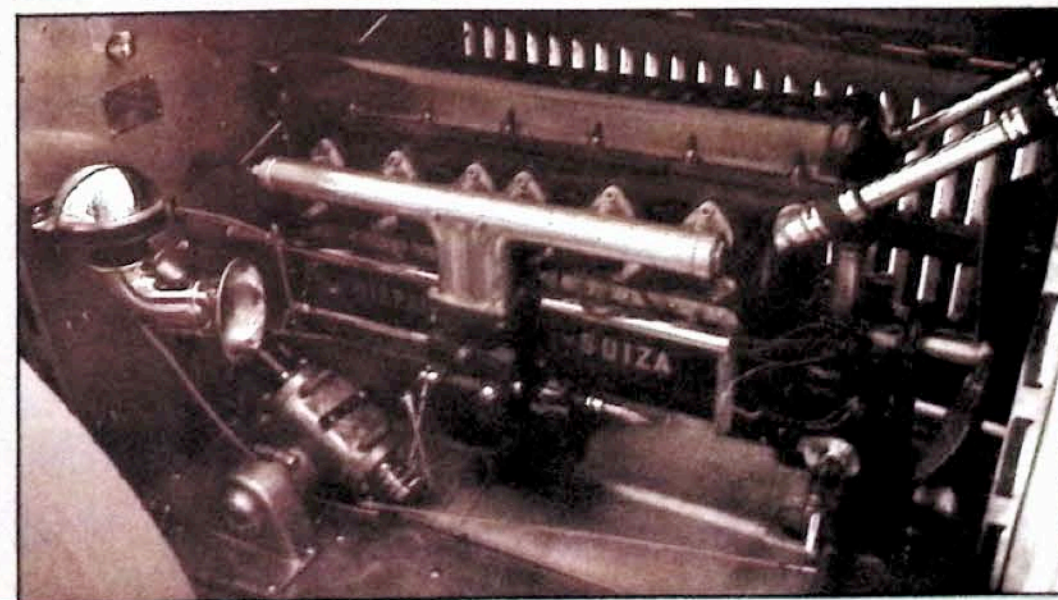
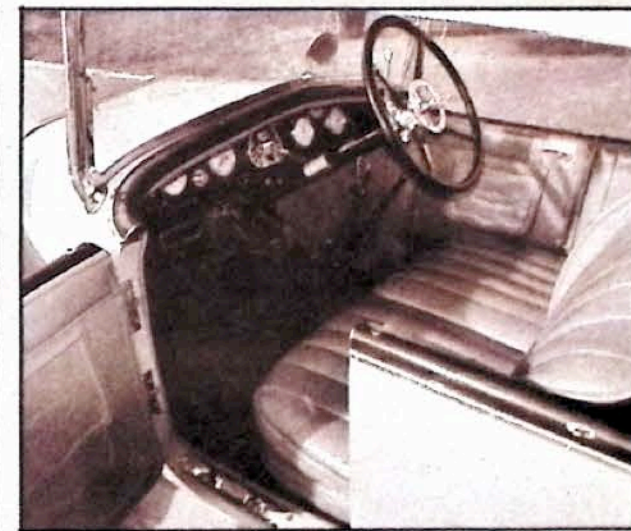
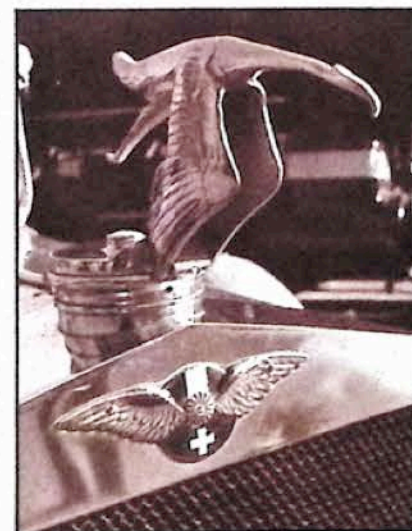
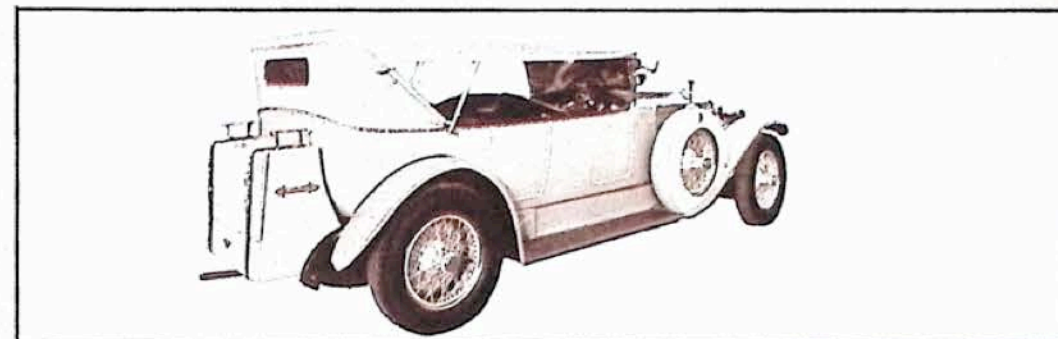
production in Spain proved to be in a bad market and in a country whose roads were very poor. The Cohn Hisso chassis (number 10502) was manufactured in 1925 at Bois-Colombes (Seine), and sold for \$13,750 (bare chassis only). The hand-built, flawless body, by Million-Guett, increased the original vehicle cost to some \$25,000.

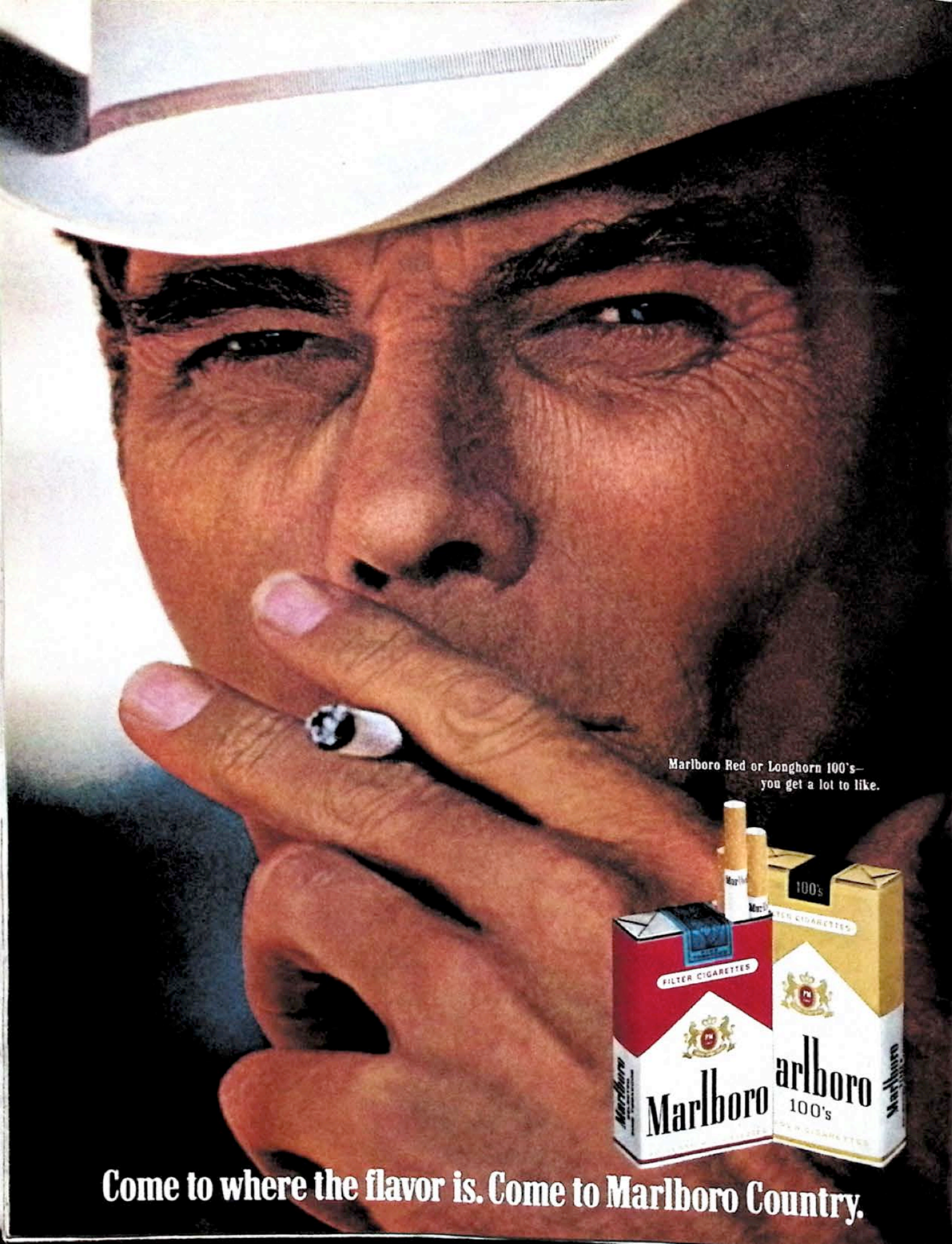
Equipped with the H6, 6-cylinder engine of 6,597cc, a derivative of the famous Hispano V8 aircraft engine, the Hisso delivers 135 horsepower at 2,750 rpm. The light alloy cylinder block, with overhead camshaft and seven-bearing crankshaft, is of 100mm bore and 140mm stroke. With ease, the Hisso travels 120 mph; it is said that the gearbox, with three speeds forward, is superfluous since top-gear starts are accomplished with ease. The H6 Hisso reportedly will lope along at 4 mph in high gear without difficulty.

The 144-inch wheelbase, on 7.00 x 21 tires, delivers a vibration-free, floating-power ride that knows no peer even at its 120 mph top speed which is accomplished and maintained with ease, and the driver can be confident that there is no danger of engine damage.

Hispano Suizas incorporated a medley of engineering features which were advanced for their day, among them servo (power-assisted) brakes which made the Hisso the most stoppable car on the road. So advanced was the brake design that it could still be found on Rolls-Royce cars until the Silver Shadow went over to discs in 1966; and Sir Henry Royce paid Marc Birkigt for the privilege of incorporating the brake design into the Rolls.

Hispano Suiza, designed by a Swiss engineer for a Spanish company and built in France: the most advanced car in the world at the time of its introduction. And still today, a product of exacting craftsmanship that awes even the novice viewer. /MT





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you get a lot to like.



Come to where the flavor is. Come to Marlboro Country.



## '70 RACING PREVIEW

Flat-out, coming down the front straight, the pack has bracketed and is roaring head-long into the golden age of automobile racing. It is the dawn of a new decade, a time that will be as significant to wheeled sport as the early fifties were to pro football. The old competition structure is shaking from the pell-mell realignments of the last days of 1969 and we are suddenly faced with something called Trans-Am, possibly being the biggest single series on the calendar. Interesting that the cars which form its nucleus weren't created 8 years ago. That's something you should know about. And so is Can-Am and NASCAR's Grand Nationals and Indy cars and, yes, Super Stock drag racers. You never can tell what a new year will bring, let alone an entire decade, but in the next 16 pages there's a lot of dope on what's just down the pit road. □ The 1960's were a 10-year-long spending binge. Slowly at first, then in more rapid bursts, the automobile, petroleum, and tire industries poured forth the one thing racing needed most: money. The bank rolled the sport to respectability. Television will likely do the rest. /MT

## TRANS-AM



## MUSTANG

Ford Mustangs have often been the swiftest, but not often the winningest of the Trans-Am cars. Bud Moore plans to change all that.

Ask Bud Moore about the 1970 Trans-American series and he will reply with guarded confidence. Confidence, because he knows what to expect from his Mustangs. Guarded, though, because he's not so sure about the competition.

Moore, formerly a NASCAR stock car specialist, will represent Ford Motor Company's interests on the Trans-Am circuit for the second consecutive year. The efforts from his Spartanburg, S.C., based operation produced impressive but not dominant results last season and there is no reason to expect any decline in '70. To help matters along, Fran Hernandez, who headed Ford's Trans-Am program in the winning seasons, is back to assist this year.

Two-time 1969 winner Parnelli Jones will again be in one of the Moore Mustangs, but at press time the driver for the second car was undetermined. Some felt it would be A. J. Foyt. Versatile stock car ace David Pearson, NASCAR's most capable road course driver, was a likely choice until late December. Then, with Cale Yarborough going to the sidelines with injuries and Richard Petty bolting back to the Plymouth camp, Ford felt it could ill afford to lose another front-line NASCAR performer.

"I feel pretty good about what's ahead," said Moore, who has never had reason to feel any other way during a long and successful career of building race winners. "I won't say we'll be a whole lot better than anyone else. There's no way to tell that now. But I will say we'll be on a par with anybody."

The major reason for Moore's opti-

mism is the Boss 302 engine with canted valve heads. It pulled more horsepower than any other on the circuit last year, holding a slight power edge over the Camaros which Mark Donohue rode to the series title. Moore is proud of the engine life his cars enjoyed in '69.

"We lost only one engine for the whole series," he explains, "and that was only because of a broken valve spring. I have to be happy with that, when you consider that this includes 2 cars for 12 races, 24 races for engines."

Moore was not, however, happy with the won-lost record. Despite putting either Jones or second driver George Folmer on the pole 9 times in those 12 events he converted only 3 first-place starts into first-place finishes.

"We finished second six or seven times in addition to those three wins," said Moore. "Our cars managed to lead every race and we were usually leading when we went out, the few times we failed to finish."

As Moore built five cars for 1970, he made slightly different preparations from '69. Trans-Am rules, after allowing use of two four-barrel carburetors last year, now permit only one four-barrel with a 302-cubic-inch displacement limit. Also changed for the new season is the fueling system, which in 1969 employed a fast fuel tank mouth on the trunk lid. New procedure calls for the use of two 11-gallon cans and a standard 2 1/4-inch filler neck, the same setup used on NASCAR Grand Nationals cars. Much safer than last year.

"I don't mind the change to one car-

buretor," Moore said. "It'll affect everyone else just as much as it will us. Besides, I don't think it will change that much. Gas mileage, for instance, will stay right around four miles per gallon."

"I'm all in favor of the new fuel system. That other one couldn't have been more dangerous. Time-wise it was great. We could put in 22 gallons in 6 seconds. But we had a fuel tower over each pit holding a 60-gallon tank of gas. There was a 15-foot hose with a 4-inch nozzle coming from it, and there was a lot of spillage on each pit stop. Can you imagine what would have happened if someone had dropped a cigarette?"

Moore's primary concern in building the 1970's is durability. The stress and strain of road racing makes this a most valuable asset, he feels.

"The guys use every part of those cars severely during a race," said Bud. "We have to have a good set of disc brakes, for one thing. Then on the transmission, there's all kinds of wear when you change gears maybe 18 times on 1 lap. The drive train really catches it."

Durability was good on the 1969 Mustangs and it should be the same this season. The engine is the same, except for the reduction to one carburetor. And the body, with only minor differences on the grille and the taillights, is almost the same.

The only change Moore awaits, then, is in the number of victories his team produced last season. He feels that total can be increased... depending, of course, upon the competition that concerns him so much right now.

To accept the Roger Penske/Mark Donohue approach to Trans-Am racing you have to hold one truth as being self-evident: that all the ponycars are more or less identical. If you're under the heady spell of the makers' ads that spin tales of glorious superiority it's not easy to agree that on the track they're all the same. But after the '69 Trans-Am was over Penske said, "We could have won the series with any car this year." Now he plans to prove it with the Javelin, the car that ranked fourth out of four makes last season.

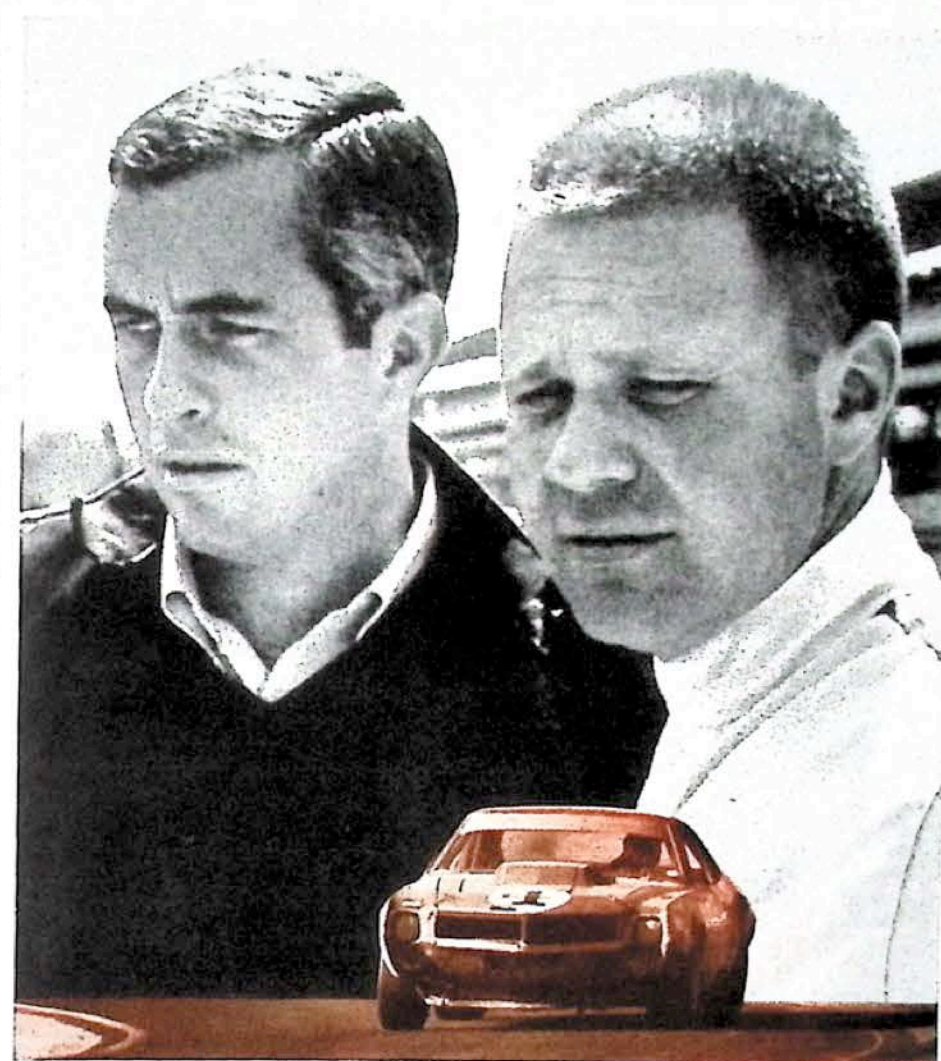
In a rare off-guard moment, Penske admitted that the switch to Javelin was "either the greatest move or the worst we've ever made." Tired of being considered a mere front man for Chevrolet, not receiving credit for the tremendous job his crew has done to win races for Camaro, he's set out to prove beyond a shadow of a doubt that it was the Penske formula that produced success. The 3-year contract with AMC makes the job worth doing, and gives him time to do it, though there's no reason to think the contract would be binding if AMC can't give Penske Racing the basic hardware it does need to build decent race cars.

The hardware, it seems, is pretty good. At the end of October Penske took delivery of all the AMC material from the Ronnie Kaplan regime and started to scan it. Their conclusion was that the Javelin racers had been concentrating most on engine development and had neglected the niceties of chassis setup. Taking one of the cars, squaring away the suspension and "massaging" it only mildly is the Penske manner.

In November, before the pact with Kenosha was public knowledge, the first Javelin "bodies in white" had arrived at the Penske shop in Newtown Square, a suburb of Philadelphia. First impressions were favorable. This was a full integral body without the separate front sub-frame that has to be reworked so extensively on a Camaro or Firebird to make it part of the main frame without being illegal. Construction of the Budd-stamped sheet metal looked good too, stronger and more precise than the Fisher bodywork of the Camaros.

About two months' work went into the preparation of the basic body of the first Javelin, the one slated to be driven in the Daytona 24-hour race by Donohue and Peter Revson on January 31. "It will be good aerodynamically," Donohue promised, referring to the rear spoiler and other bodywork features that are being homologated for the cars that AMC may market as the "Mark Donohue Special."

Koni adjustable shock absorbers will continue to figure in the suspension specs of Penske-prepared cars. This year they'll be relying less than they have before on rubber bump stops to give the springing a progressive effect, getting better results from the springs and shocks themselves. At the rear, what they've learned with the Camaros about making a leaf-spring suspension work is almost directly transferable to the Javelins. They rely on a Panhard rod, anti-roll bar, and springs that are relatively



## JAVELIN Roger Penske and crew set out in '70 to prove that pony cars are created equal.

stiff over their front portions for good torque control.

For the rear axle the likely choice is the simplest one, a reworked stock axle. How about the possibility of a quick-change? "Frankland's is the most easily reworked to suit one of these cars," Donohue mused, "but I'm not sure I wouldn't rather see our guys work a little harder and have less going on back there."

From the time this car hits the track at Daytona, January 17, for its first tests, until the official Trans-Am season opens in April, there are several chances for mind-changes on items like axles. With the Camaro there was only one set of gearbox ratios. Now with the Borg-Warner box in the Javelin they'll have additional sets from which to choose.

One decision that had to be made early was the choice of the base engine for the '70 Trans-Am Javelin. The new rules allow almost unlimited flexibility in making the internals, which can be completely special if the displacement is right. So Penske picked the new AMC 360 CID block instead of the 290 CID engine that was the basis of earlier T-A Javelins. It has taller decks to accommodate the longer stroke that was inserted to expand it to 360 from last year's 343 CID. At the same time it was given

goodies like larger, stronger head bolts to make it better for racing use.

When Javelins first went racing two years ago, Jim Travers and Frank Coon of Traco Engineering set up the first engines but weren't asked to continue to maintain them. Now they'll do the latter, as well, under contract to Penske. To bring the displacement down, new crankshafts are being machined from billets by Detroit's Moldex. With the stock bore of 4.08 inches, a stroke of 2.90 inches will bring the unit inside the 5-liter limit.

The cylinder block change obsoleted all previous Trans-Am intake manifolds, so Traco is looking at some new ones. Ultimately an all-new manifold will be developed to suit the engine, in conjunction with one of the makers Traco's working with, among whom Edelbrock is included.

Trans-Am racing is so competitive that it's impossible to pick the winners in advance. The smallest margins, the slightest differences, decide between the winners and losers. How can Penske be so sure he'll bring home the bacon for American Motors? Because he's a specialist in those details that make all the difference. That's why he'll still have an edge, real as well as psychological, in the race for the Championship. /MT

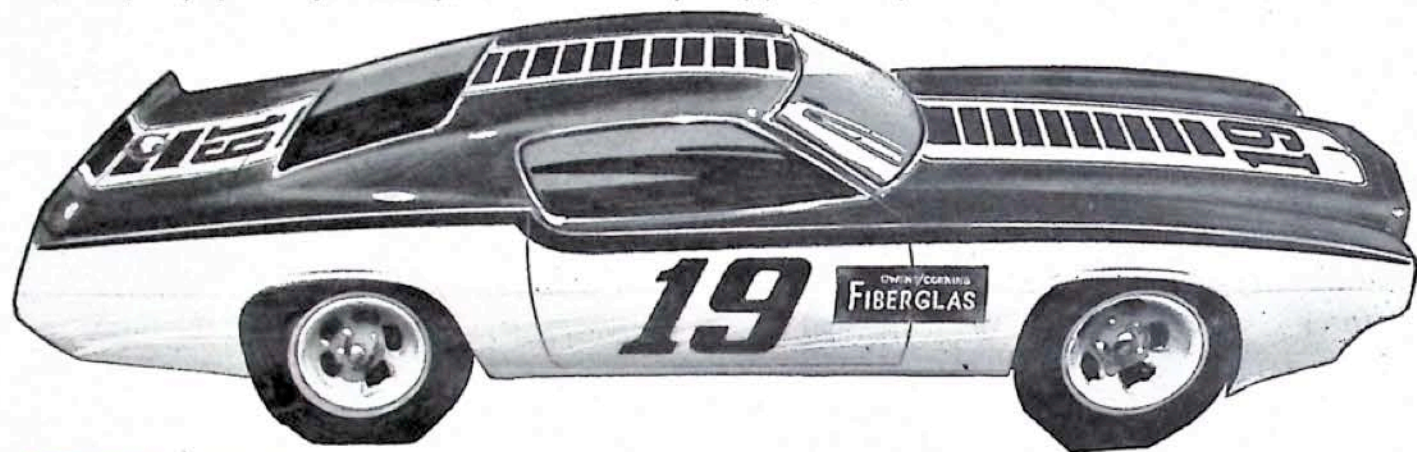


Jerry Thompson (left) and Tony DeLorenzo, fresh from SCCA championships, take on the pros.

engine. How strong? "Do you want to talk *real* horsepower?" Collins asked. "We should be off 20 horsepower from last year, with the single carb. That means we should have about 440."

With full-time chief mechanic Art Jerome, youngest-looking in a team in which Thompson is the patriarch at 31, the butt of countless jokes about his advanced age, Jerry picked the pieces that went into their Camaros. Firestones were the early choice for rubber.

Tests, hopefully beginning on one car in mid-March, may settle some of these questions. They may show whether the new floating single-piston front disc brake, now stock on Camaros, is any good for racing. Koni adjustable shocks,



## CAMARO

Penske is gone to Javelin and Camaro's hopes rest on Jim Hall and two young SCCA champion Corvette pushers. By KARL LUDVIGSEN

If it was all Bruce and Denny last year in Can-Am racing it was all Tony DeLorenzo and Jerry Thompson in SCCA "A" Production racing. In their booming red and white Corvettes, Tony DeLorenzo and Jerry Thompson won 11 out of 11 SCCA Nationals entered. In eight of those races the two Owens-Corning team cars finished first and second! They capped their year with Jerry Thompson's victory in "A" Production at Daytona in the American Road Race of Champions. They announced the same day they'd be running a team of Camaros on the Trans-Am circuit this season.

"Today we're amateurs, tomorrow we'll be professionals." That's the way Tony DeLorenzo saw the changeover for the team from Troy, Michigan. But if they were amateurs before, they were some of the most professional amateurs making the SCCA scene, with their massive tractor-and-semi rig hauling a van full of Corvettes. "We've licked that part," said Jerry Thompson, "hauling two cars and a spare all around the country. We know how to do that. It's no problem."

"Okay," I said, "but if you're picking up Camaros where Penske left off, it means you're trying to match Traco in the engine department. Does that shake you up at all?" After an exchange of knowing smiles, Tony and Jerry ushered me into a cubicle and introduced me to Tom Collins and Mike Swarthout.

"There's no secret to it," I was assured by Messrs. Collins and Swarthout, barely visible behind six engine blocks, manifolds, crankshafts, and Stroh's beer cartons full of rods and pistons on their way out for machining and testing. "We have access to all the same information Traco does."

Competition Services did concede one point: "We'll probably use Traco valve springs. They're the best we've found." Through Midwest Auto they've obtained General Kinetics camshafts, and headers come from Kustom Equipment. With the requirement for a single "readily available" carburetor, it's back to an 850 cfm Holley and the aluminum manifold used on the Z/28 through 1967.

About the carb, another rule states that the "throttle bore" can't be larger than 1 1/4 inches (four barrels are allowed). "I've heard that some guys are thinking of putting the throttles in the middle of the venturii so they can be 1 3/4-inch in diameter," Tom Collins said, "but I think they'll be caught on that one." There's no special high hood for the new Camaro, so they'll space the carb as high as they can within the room available to increase the size of the plenum chamber beneath it inside the manifold, which will also be hogged out.

With a record of zero major engine malfunctions and only a few minor ones during 1969, working on the ZL-1 Corvette engine, Competition Services is confident it can make a strong Z/28

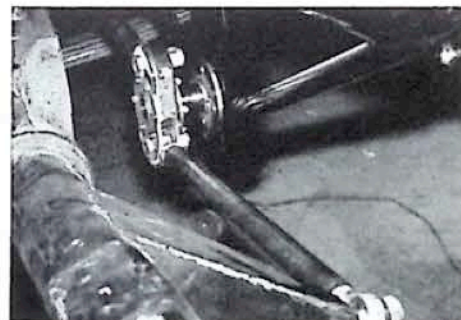
proven on the O-C Corvettes, are the pick for the Camaros too. Advantage will be taken of added freedom in the rules to relocate the rear leaf springs to control the axle more effectively. An anti-roll bar and a laterally-locating Panhard rod will be added. There's not that much new in the frame and underbody of the Camaro, which will be tied together with the usual roll cagery of big tubes.

I'd think the '70 Camaro would do well to be about as quick as last year's, perhaps matching its reduced power with slightly smaller frontal area and a slipperier shape. Will that be quick enough to win? That's what they run the races for: to find out. Which brought up the subject of drivers. Having failed to intimidate this brash young team on any other point, I asked Tony DeLorenzo how he'd feel out there on the track racing with Parnelli Jones, Mark Donohue, and Dan Gurney. He didn't disappoint me: "I can hardly wait."

Of course there'll be other Camaros in the Trans-Am this year. Jim Hall will field one, with engine work by Gary Knutson, one of the best in the business. Hall has to be rated a serious threat. He's never worked with production machinery, though, the kind of obstinate iron and sheet metal that Thompson, DeLorenzo, Jerome, and company have been wrestling with for several dozen man-years. That has to count for something. /MT



Jerry Titus (above) will be on equal ground with others this year after rules problems last year. Watts-link (below) is same as '69 version.



## FIREBIRD

If Jerry Titus can do well in an old car, just think what he'll do with a brand new one.

BY ERIC DAHLQUIST



It's funny how the old Detroit wheel goes round and round. Remember the '69 Z/28 Camaro? The one with the keep-the-revs-up 302, and the honest-to-goodness four-wheel-disc brakes and the rock 'em, sock 'em suspension? That car was the child of SCCA's production requirements for eligibility and when the rule changed, the child grew up.

And the Trans-Am Firebird, how about that? It was an attempt by a manufacturer to capitalize on what may be the biggest single thing to hit U.S. racing. When the rules changed, Pontiac went the other way. The spoilers became super-functional, the suspension was brought up to GT specs, and the general demeanor of machine toughened. All very interesting, but Chevy has a back-to-back championship going for it—the one by Penske/Donohue. The Penske/Donohue team who now run Javelins and seem to have precipitated a whole series of team realignments. In point of fact, all the Trans-Am combinations are new except the Pontiacs by T/G Racing.

If you hold with the theorem that there isn't going to be a lot of latitude between the best and the worst of the Trans-Am entries, and that advantages are going to be found in execution rather than design, you almost have to give the Titus/Godsall effort an edge. Jerry Titus spent a lot of Sundays last year finding out what was wrong with his Firebird while nursing it to regular finishes in the top five positions—enticingly close to victory lane.

One of the Firebird's main problems last year was brakes, or rather lack of them, due to inadequate fluid supply. Even if it doesn't work, the new braking arrangement is noteworthy if only because it will be optional equipment on several '71 GM models, previewing Detroit's direction. You actually have two alternatives to better brake application: increasing line pressure or capacity. The former elevates the fluid's boiling point and the latter needs a big servo to make it work. As it happens, Bendix had a deal for trucks that uses the power steering pump to activate the

brake servo as well. This allows a substantial capacity jump as well as eliminating those times in a vacuum-assisted configuration where there is no vacuum, like during quick deceleration with radical-cammed engines. In preliminary tests, Jerry found the response was good, almost too good, in fact, so they have mostly put the problem behind.

Because of a rules fluke, the Pontiacs have been forced to use small-block Chevys for the last year and a half. Not that that was all bad, because there is still nothing like one of these babies to get the job done. With the new regulations, however, a very short deck Ram Air IV 400-inch block is going to be the number. Bore is 4.16 inches and stroke, 2.87, so it's plenty oversquare. All Ram Air Pontiacs have four-bolt main bearings and increased oil capacity and T/G Racing will use the new, beefy, forged rods and crank as well. Compression is right up around 11.5:1 with TRW forged aluminum pistons.

Since manifolds this year will be anything you care to use that incorporates a single four-barrel carburetor, T/G appears to be toying with some kind of ultra-long runner type that will fit nicely under or through their shaker hood arrangement. Using several of the proposed shapes, horsepower was up to 450 at 6,400 by the end of January. Titus was particularly happy with good power readings from 4,200-6,000, not a bad range. Chassis-wise, the switch to a new Firebird body did not demand many re-thinks from what they had. The leading-arm steering is better, of course, as is the situation allowing forged-steel spindles if you want them. At the rear, the '69 Watts-link is used.

As of this moment, Penske's Javelins are the cars to beat, mostly because of Roger's thorough preparation. In back of him, the rest of the teams fall into some kind of loose order, Pontiac somewhat of a question mark in the middle. We previewed the 303 short-deck last summer (MT, Oct. '69), in our infamous 140-mph run down the Ohio Turnpike and it felt plenty strong. A couple of Camaros will tell you that. /MT

# 'CUDA/CHALLENGER

This year Chrysler gets serious about Trans-Am.

I don't think it should be thought of as just Trans-Am by the public. It should be called a Trans-Am Manufacturer's Championship. It's actually big league because it's got five, possibly six, manufacturers fighting each other who are awfully interested in what it does for the sale of their automobiles. This same thing doesn't exist anywhere else except to a certain extent in Grand Prix racing although not as big. And even in the long distance stuff like Le Mans, it's not as directly related to their own sales, their own profits."

That's about the first thing Dan Gurney said to us when we went down to All-American Racers in Santa Ana to see how the Trans-Am Barracudas were progressing. His intensity was surprising, yet it was understandable, for one of the rare times in American automobile competition, almost everybody is in the Trans-Am act. With sort of a double-your-pleasure, double-your-fun idea, Chrysler Corporation is in twice, fielding both Barracuda and Challenger teams. Which only makes sense, since the cars share a certain similarity and can be mostly put together by one constructor - AAR. Once Gurney's outfit gets the basic chassis finished, the Challengers will be delivered to Ray Caldwell's Autodynamics for final assembly and detailing. From there Caldwell and driver Sam Posey will work out their own combination.

Essentially, you build a Trans-Am sedan the way you build a NASCAR sedan - start with a production automobile and throw a lot of it away. The 'Cudas and Challengers were stripped to their basics and then all the spaces between the spot welds heliarc'd in and a complete roll cage added which will help stiffen the floor platform as well as protect the driver. To frustrate any wheel hop possibilities, a pair of leading lines come off the top to the rear axle, go through the floor and anchor in a boxed member in the floor that runs across the car where the back of the front seats would normally be. During these early stages there was no Watt-line hook-up, though there may be later to stabilize the rear axle on its parallel leaf springs.

In the past, the SCCA was pretty specific about maintaining what was essentially production suspension but that has gone with the proviso allowing relocation of the pivot points. Chrysler has been in racing long enough to recognize the general direction they need to go but some of the specifics are unclear. If there are any basic difficulties with the 'Cudas and Challengers, it will come from a lack of track testing to sort out handling.

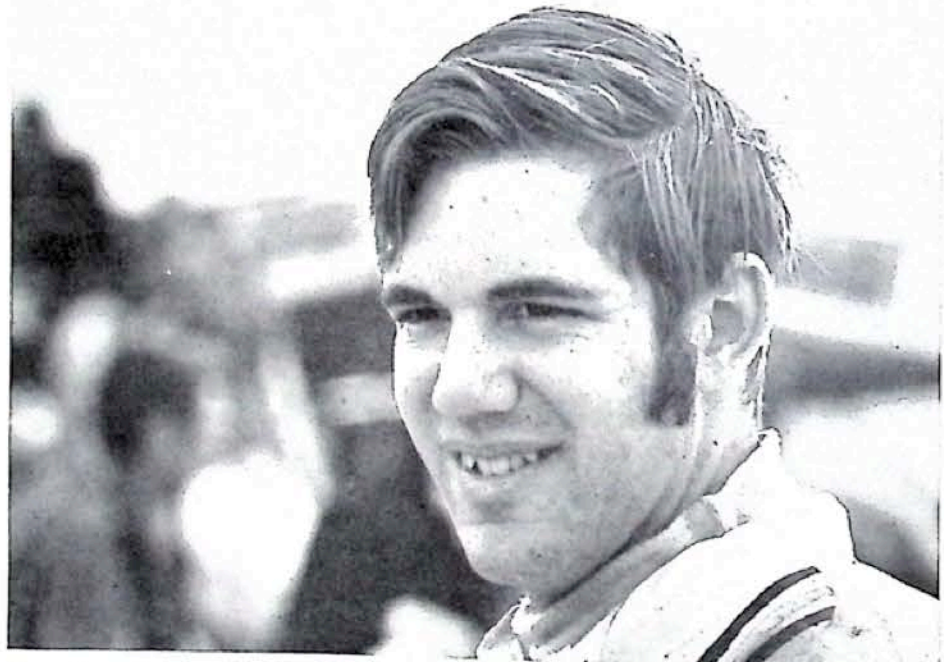
Fresh from his Indy exploits, and probably because of them, Pete Hutchinson was elevated to manager of Chrysler's Trans-Am program and will do most of the engine development work from Keith Black's shop as he did last season for USAC. And this arrange-

ment, the Hutchinson/Black alliance, is precisely why most of Chrysler's adversaries grudgingly concede them the horsepower crown. It's all that time they spent on the dyno in 1969 with the Indy stuff, you see. A lot of the testing work of essentially identical pieces was brought directly over to Trans-Am and even early in the game, Pete could show 440 corrected horsepower at 7200 rpm.

Still, he wasn't satisfied. "I'd like to get something on the order of honest 450 hp in race trim," Hutchinson allowed, "that is to say, with race oil pan, race windage tray, and racing exhaust system. Right now we have a multi-pronged effort to get there. We're running the basic camshaft development plus some manifold evaluation. We have engines running here and we're running others down at Gurney's place, mainly to determine the final windage tray and oil pan configuration. We also have some exhaust system work being



Pete Hutchinson (above) heads Chrysler Trans-Am program. Sam Posey (below) and Ray Caldwell of Aerodynamics will field the Challenger team during the 1970 racing season.



done down there where we're determining the final exhaust configuration."

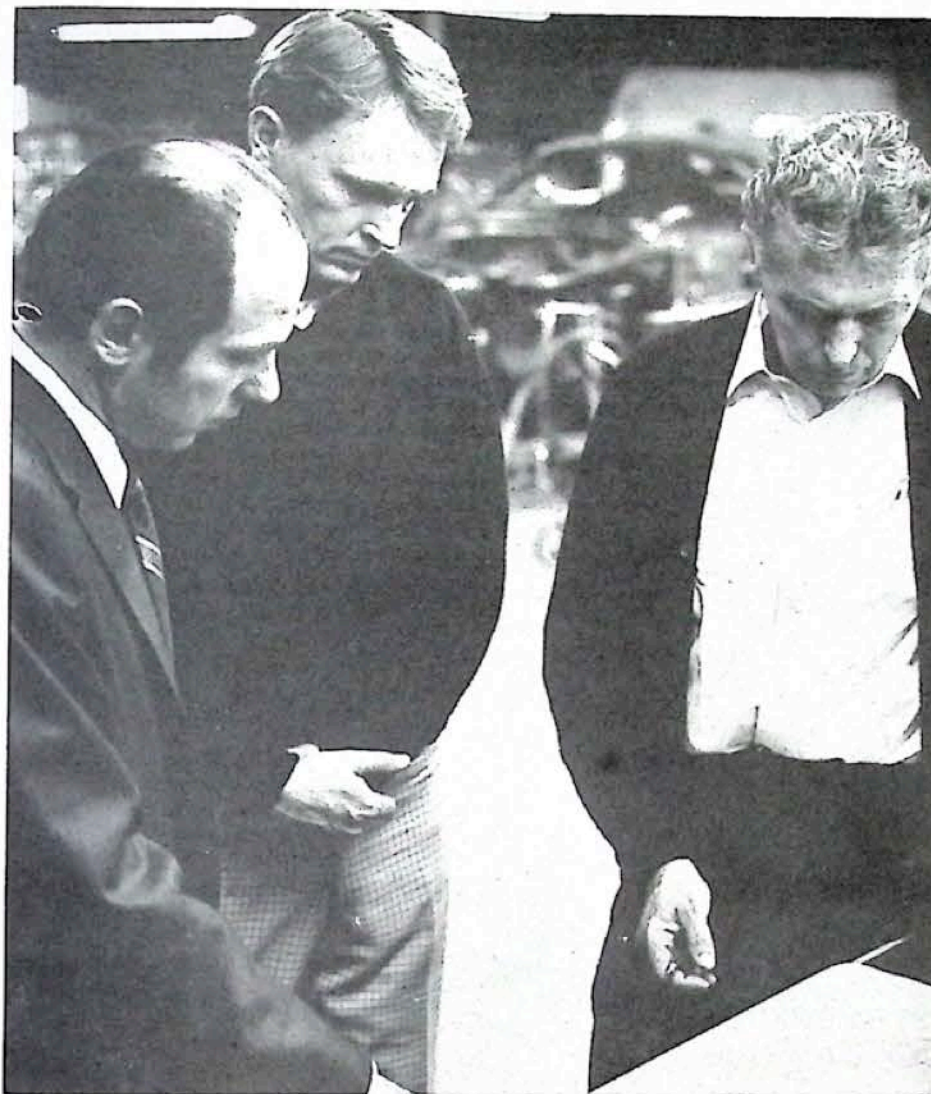
"Right now, we're in the process of getting different things done different places, then bringing them all into one spot and putting the whole package together before we come up with our final horsepower.

"As soon as you're dealing with a limited time situation, which racing invariably is, there is no other approach you can take, reasonably. If you take the purest approach of trying to do one thing at a time and being very concise about your testing and all, you don't make the race. Now you may have the fastest car, but if you don't get to the race track you don't make it. So, what you have to do is sort of make these trade-outs, these compromises to get all the work done, at least get something accomplished in each area so that you have some feeling for what you're do-

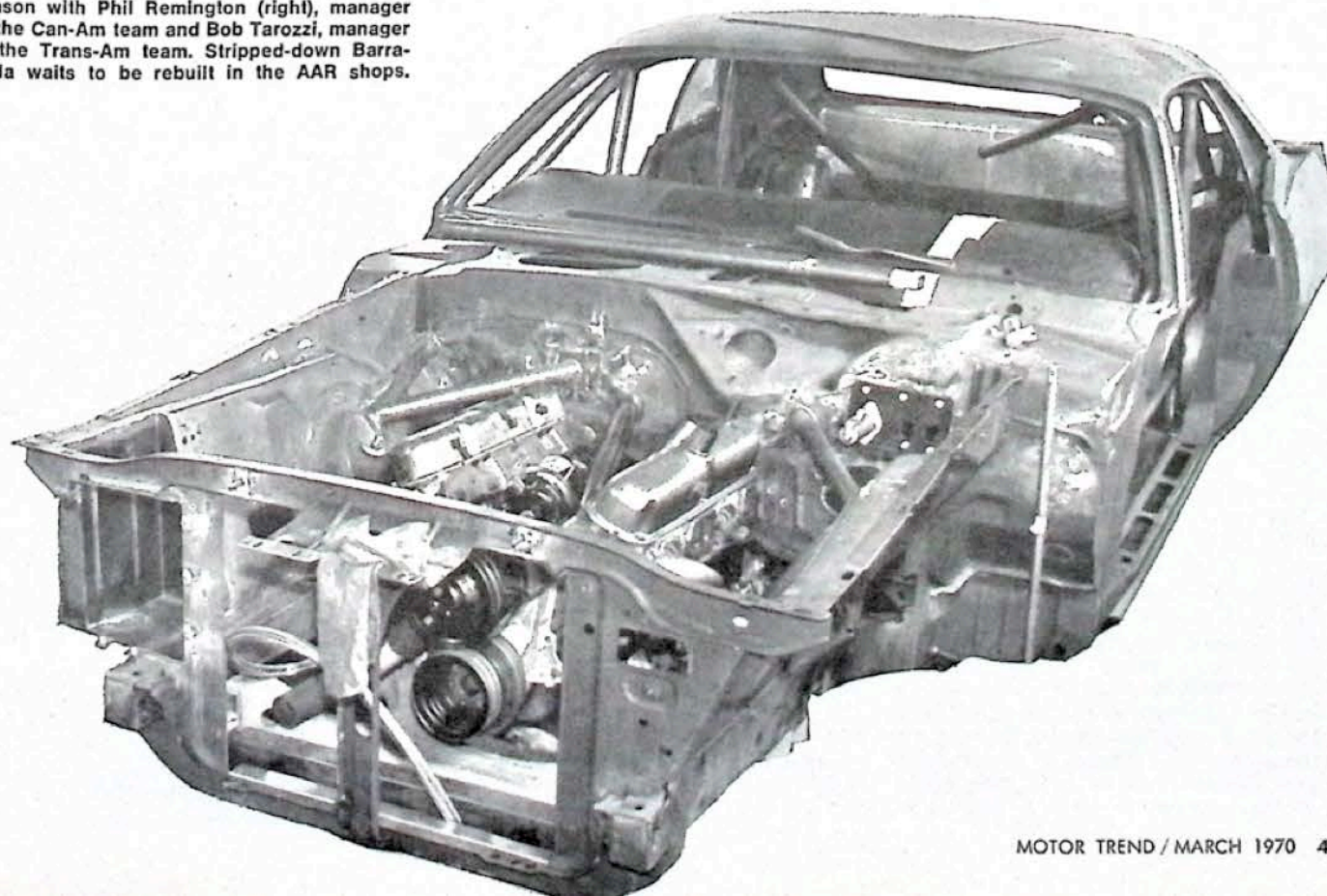
ing there, and try and bring together the best possible package in time to get enough of them built for the first race, as you can intuitively. Half of it is intuitive when you get all done."

Hutchinson feels they have put together a collection of people with racing backgrounds so varied that their approach cannot help but be successful. A Dan Gurney, whose experience touches Formula I, Le Mans, and Indianapolis; combined with a Keith Black, whose drag and boat engines need no preface; plus a Ray Caldwell, who has done exceptionally well in the purest sports car sense with Formula Vs and Fords, have to be formidable when pulling together.

Perhaps the most interesting thing Chrysler and their merry men have created is a unique Trans-Am cylinder head with its push-rod holes moved slightly, allowing bigger ports. The



Dan Gurney goes over plans for the upcoming season with Phil Remington (right), manager of the Can-Am team and Bob Tarozzi, manager of the Trans-Am team. Stripped-down Barracuda waits to be rebuilt in the AAR shops.



Indy Weslake aluminum heads were priced out of the question, but by careful air-flow work, the new cast-iron jobs actually pass more air, if that's possible. Because the 4.040 x 2.960-inch bore/stroke, 303.8 cubic race motor has the identical bore size of a 340, the new heads will bolt directly on.

And that, racing buffs, is part two of Chrysler's Trans-Am adventures. Of course, they want to dominate the series, win every race, capture the Championship and hopefully sell more cars because of it. But at the same time, they have doubly dedicated themselves to breaking, once and for all, the dominance of the small-block Chevy. With justifiable pride and unmatched zeal, they bring you in and show you the new forged-steel cross-drilled crank, 4-bolt-main-bearing block, stout, forged rods good to 8500 rpm, and trick, stacked-gear oil pump.

In stark contrast to nearly all the other manufacturers' racing, they want people to know what Chrysler has and that the very same pieces will be available, the heads, all of it, in as great a quantity and at as low a price as possible. "Trying to keep the 'factory stuff' for only a select few is defeating the whole purpose of the program," Hutchinson reflected. Considering that it took 14 years before a Chevy won a USAC Championship race and Plymouth just two, he might have something there. /MT



The 1970's. A decade for change and a decade for decision in NASCAR's Grand National stock car division. It will be, in the end, a decade for rich success on the national level, but success will not come without more controversy and more growing pains.

The 1970 season, already underway, brings with it promise of competition at a peak we have never before seen. But there cannot be competition without scheduled races, and there have also been ominous warnings that conflict may cloud the action.

Forget, for a moment, the Professional Drivers Association; Talladega, Ala.; restrictive entry blank clauses; purse reductions; and all the explosives of 1969 that may leave wide-spread effects over 1970. Think instead of what lies ahead on the high-banked raceways of the Southeast and the ever-spreading showcases of speed being constructed across the country.

Look first at Ford Motor Company, undisputed champion of the late 1960's. The king returns with a tarnished crown, having lost super drivers Richard Petty (to Plymouth) and Cale Yarborough (idle with an injury). Add to that the suspicion that the 1970 Torino will not get the job done on the high banks and you can see that this is a weakened lineup. The dynasty, at first glance, stands on weaker legs.

Look then at Chrysler Corporation, second in a two-company chase for the consumer's attention in 1969. The forecast here dictates change, with the appearance of the super aerodynamic Dodge Charger Daytonas and the Plymouth SuperBirds. The lineup is strengthened with the return of Petty. Whether or not this will mean a change on the NASCAR throne cannot be answered at this stage but it is safe to assume that the level of competition will be tighter than ever before.

Ford's driver lineup will continue to be strong, growing pale only in comparison with the potent 1969 list. The Petty vacancy will not be filled, leaving the company with four teams. David Pearson, three-time Grand National champion, will again be in the Holman-Moody Torino. Super speedway king of last season, LeeRoy Yarborough, will drive the Junior Johnson Torino. Former modified star Donnie Allison returns with the Banjo Matthews entry, and this partnership — the least effective in the Ford family in 1969 — appears ready to change the script. Finally there is the Wood Brothers Mercury, the car usually occupied by Cale Yarborough. It is here that the picture becomes hazy.

"We hope Cale will be back before too much time passes," says Ford performance chief Jacques Passino. "But we would be foolish to try to say just when that will be. As a result, we will have to solve this problem one race at a time."

Yarborough went to the sidelines in the Dec. 7 Texas 500-miler at College Station, a collision with the second turn guard rail breaking a shoulder bone. Doctors say he will race again but they refuse to offer a timetable.

## '70 RACING PREVIEW *continued*



**Chrysler has a new car and Ford stays with the old one.**

# NASCAR

BY LEONARD LAYE

Photos: Don Hunter

Cale, adamant in his desire to return, says it won't be long. He has asked Ford not to give up his seat for the Atlanta 500 in March.

Ford's appearance will be altered also with the decision to run last year's model, when aerodynamics dictate, on the super speedways. The '70 Torino was used at Riverside on Jan. 18 for the Motor Trend 500, but wind resistance was not the major factor there. It will be, however, at the giants of Daytona, Talladega, Michigan, Texas, and Charlotte and it is on these tracks that Ford will run the 1969 Torino Talladega. The decision to run year-old automobiles when new car sales are so important was not an easy one. The choice may well be the proper one, though, with the thought that a victory for any model Ford is better than a victory for a new Chrysler product.

Ford was faced with this problem when it decided to scrap plans for the 1970½ King Cobra, another model in the super aerodynamic line that would have been difficult to beat.

"This decision was made because we felt we shouldn't develop the specialized vehicle," explained Passino. "We want to race cars very close to the ones we sell. At present I know of no plans to revive the King Cobra."

With that decision secure, Ford took a team of drivers to Daytona's sprawling 2½-mile speedway on Dec. 8 for

one week of tests. Drivers Yarborough, Pearson, and Allison ran the '69 and '70 Torinos and Mercury Cyclones, and in every case the '69 was better. Neither of the '70 models cracked the 190-mile-per-hour barrier, and it was after this fateful week that Ford firmly decided to go with the proven cars of a year ago.

"Ford is concerned, sure, that it will be harder to sell the 1970 cars when they're running the 1969's," admitted one driver. "But while they may not get the effect of winning with the new ones, they feel it will be better than giving Chrysler what may have been a sure thing. If they win, they can always say they beat Chrysler with a year-old car."

Defeating Chrysler, however, will not be an easy task this year, no matter which car any company elects to run. Dodge will come with the identical Charger Daytona of a year ago, with only the model year being changed. The car is proven, after Bobby Isaac captured the Texas 500 in one, and the look-alike Plymouth SuperBird should be just as capable.

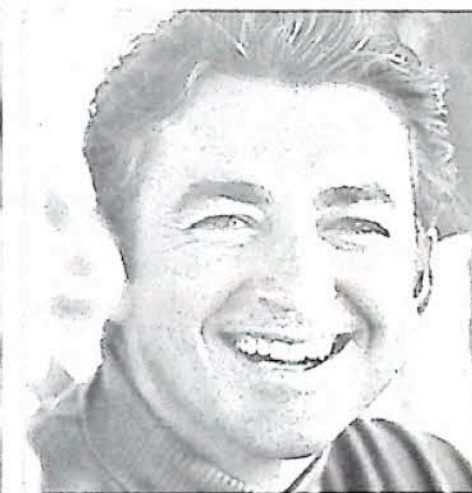
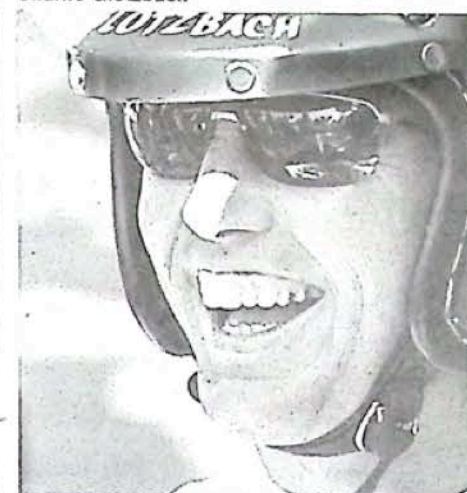
Isaac will be one of three factory-sponsored drivers in a Dodge. Others will be Bobby Allison with car owner Mario Rossi, and Buddy Baker with car owner Cotton Owens. In addition, Dodge will have Charlie Glotzbach in an independently sponsored car from

Richard Petty



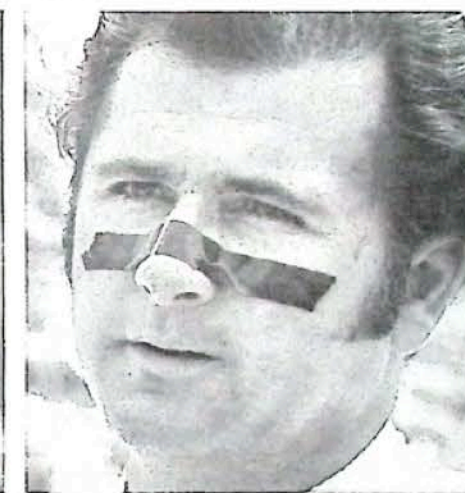
Buddy Baker

Charlie Glotzbach



Bobby Allison

David Pearson



LeeRoy Yarborough

the Ray Nichols shop. The team will be supervised by Paul Goldsmith.

Dodge encountered some early problems with its streamlined racer when the Daytona was introduced to the high banks late in the season. Tire wear, for instance, became a problem in one race as the cars gave adhesion and stability on the track that could only be termed "too good." Engineers felt at the time, however, that these things would be worked out through tests and the Texas race proved them right. This car, with the sharply sloped nose and the wing on the rear is, at this stage, the one to beat in 1970.

Plymouth, with its SuperBird built on similar lines, may be just as hard to contend with. There is only the question of proof, since it was untested in competition as the season began. The Plymouth lineup, while small in numbers, is a good one. First there is Petty, the most successful driver in number of wins in the history of NASCAR. He goes back to the corporation after a one-year absence.

Petty will again run all races, as will Isaac in the Dodge. His team will include the young and very promising Pete Hamilton, who ran on the Grand Touring circuit last season. Hamilton will have a car only for the major races.

"Except for the body, this Plymouth is not much different at all from the one we ran year before last," says

Petty. "I'm very optimistic about it since we have been so familiar with Plymouths over the years. I'm not disappointed with Ford. We had a fine relationship with them last year. But I'm glad to be back and I think we can have a good season."

The changes in 1970 will not be limited to the automobiles themselves. Of primary concern, with everyone involved, is a Grand National schedule that is growing rapidly and placing excessive demands on the competing teams. Seventeen major events were shown on an early slate, at tracks from one end of the United States (Charlotte, N.C.) to the other (Riverside, Calif.). One particularly demanding part of it shows 400-mile races on back-to-back weekends at the widespread sites of Jackson, Mich.; Riverside; and College Station, Texas. The emergence of new speedways and the compactness of the schedule is forcing both manufacturers to alter their plans which have been more or less stable over the past several seasons.

"Our schedule is not yet complete," said Passino in January. "However, I think it is safe to say we will run 16 to 18 major races. We will not be at some places this season that we have run in the past."

Both Ford and Chrysler are expected to omit such Southeastern racing landmarks as Martinsville, Va. and

Bristol, Tenn., from their schedules. They have normally competed with full teams in the 250-milers there. North Wilkesboro, N.C., which offers another 250-miler, would have been excluded also, but this race is now included in plans for national television and the manufacturers will not miss this chance for national exposure.

"The Grand National schedule is a back-breaker," says Bobby Allison. "It really makes it rough to be competitive everywhere you go, for there is only so much time left to prepare. But overall I think it's a good sign. It's a mark of the growth of our sport."

Everything appears to say "go," then, on the track itself. Only in the background of internal workings does a problem still persist. NASCAR President Bill France and members of the PDA, formed only last year, remain at odds over such things as pension plans, track conditions, purse reductions, and clauses in various entry blanks which, the drivers feel, restrict them too much. Time will cure all these ills. Only the methods remain unsure.

Throw out the politics and 1970 should be the most competitive season yet. "It has to be," says Petty. "This is a business for all of us, and any losing business is a bad business. You're going to see a lot of different winners this year." /MT

# '70 RACING PREVIEW SUPER STOCK

**On the drag strips, the news is heads-up eliminations; no handicaps, no breakouts.**



The car to beat in NHRA Pro Stock will be the Sox-Martin-King 9.5-second Hemi 'Cuda.



There is no question that the segment of the drag racing sport which through the years has steadily grown to become of greatest interest and popularity is the Super Stockers. A visit to any drag strip reveals that the folk in the grandstands are not naive; they are aware that a Super Stocker is indeed a production automobile. No superchargers or nitromethane: the Super Stocks are all carburetors and gasoline and four speeds, all that good get-your-hands-greasy grass roots stuff that anyone can identify with.

The fans may wig out watching a fuel dragster turn the quarter-mile in less than 7 seconds elapsed time in excess of 200 mph, but when the Super Stocks file out to the starting line and begin competition, the cheers from the crowd are deafening. If Bill Jenkins or Ronnie Sox or Dick Landy or Don Nicholson wins Super Stock Eliminator, then it reinforces the spectators' personal product choice of Chevy, Plymouth, Dodge, or Ford. The cheers are for the drivers and the cars, by make and model. It's known as product identification and it sells.

Detroit believes in this theorem of immediate and direct identification by the prime consumers in the performance car market, and it is here that the majority of the factory backing lies. The manufacturers, in recent years, have fostered the Super Stock division and contributed generously to its phenomenal growth and success. Although there have been some budget cutbacks

in racing expenditures, there is every indication that the manufacturers will not relax their interest and objectives in the coming year. Marketing endeavors surrounding performance automobiles sold a lot of cars in 1968 and '69; the strategy should be equally as productive in 1970.

Last season, the major drag sanctioning body — National Hot Rod Association (NHRA) — continued their multiple-class Super Stock structure that had been employed for many years: class competition was featured, with each class winner, supplemented by the cars turning the quickest elapsed times during runoffs, making up the field for Super Stock Eliminator. Competition was based on a handicap system, where existing National Records at the time of the event were used to determine the handicap advantage of the slower cars.

Meanwhile, the American Hot Rod Association (AHRA), offered heads-up competition with handicapping done on a weight basis and all races featured even, side-by-side starts. Consequently, a new type of match and circuit racing evolved: the thing was big-name heads-up Super Stock racing. AHRA tracks continue to feature this type of show.

Late in the season, specifically at the National Championships in Indianapolis, NHRA's procedure was revised and a qualifying system employed. All Super Stock drivers qualified their cars for a position in the Eliminator finals, the same as fuel and gas dragsters. This

not only did away with class competition entirely, but because the handicap starts were based on qualifying times, it was also intended to avoid any possibility of "sand bagging" in the Super Stock Eliminator ranks.

For 1970, NHRA has introduced a still newer system, basically a pro-am classification for Super Stocks. Group I, Pro Super Stock Eliminator, is a new category which consists of production type automobiles of 1968 or later vintage. Group II, the amateur contingent, is known as Super Stock Eliminator, and the competition in this division is essentially the same as in years past, a category for early and late model stock production cars, handicap starts.

In effect, the new NHRA Pro Super Stock Eliminator plan is simply heads-up racing. Rules were designed to eliminate any bickering among drivers and car owners seeking an advantage. Despite hemispherical heads (Mopar), multiple overhead cams or "tunnel ports" (Ford), or aluminum cylinder blocks (Chevy), no engine is permitted a special advantage or dispensation. All cars must be built on the basis of 7.00 pounds of vehicle weight per cubic inch of engine displacement, with a 2,700-pound minimum car weight permitted (thus inadvertently dictating a minimum engine size of 385.5 cubic inches). The 7.00 pounds/inch is the important factor. Mammoth 500-inch engines can be employed in reasonable 2,989 pounders; and 385-inch engines in scanty

2,700-pound lightweights; but all will use the same yardstick. Production engines are required as a base, but any internal modifications are allowed as long as the engines are normally aspirated, burn pump gasoline, and use no more than two 4-barrel or four 2-barrel production carbs.

Basically, modifications to the cars are a bit more stringent. To maintain the Super Stock "image," the cars used are to be no more than 3 model years old; the wheelbase cannot be "shuffled," and has to be at least 97 inches in stock form; the cars have to be of American manufacture; engine make has to correspond with body make; and fiberglass duplicates of the stock front fenders and hood can be used.

Thus, NHRA has created a heads-up Super Stock Eliminator for 1970, one which is not only welcomed by the car owners and drivers, but is in compliance with their suggestions — as well as those of track operators and supporting industry — to NHRA at the close of the 1969 season (prior to the association's extensive rules conferences in the fall).

What can be expected, therefore, in Super Stock racing, 1970, is a totally new "look," with two divisions of competition: pro and amateur categories. And, there is important increased industry support. NHRA has put up \$280,000 in cash prize money for their Big Seven series of events in 1970, and that's backed with \$1.5 million in contingency money from industry sources. Combine that with more than \$605,000 for 35 World Points Championship races during the season, and the outlook is, quite simply, very rich... a total of \$2,285,000.00! For Super Stock alone, NHRA has announced a total possible purse of \$126,000 for their 35-event World Championship series.

#### THE CARS AND DRIVERS

The same un-racing relationship that didn't exist last season between Chevrolet and the Team McLaren or the Penske Trans-Am operation won't continue to flourish with a select few Camaro Super Stock racers. While this subliminal, almost invisible un-support of the factory worked well for Chevrolet in the 1968 season, it was less effective last year with Bill Jenkins' sweep of the Super Stock Nationals and a third consecutive NHRA Manufacturers' Cup the only Chevy coups.

The top Chevy contenders are Bill Jenkins (Pa.) and Dick Arons (Mich.). They are backed by a second echelon which features names like Wally Booth (Mich.), Dave Strickler (Pa.), Mike Fons (Mich.), the Kimball Brothers (Mo.), Dick Harrell (Mo.), Bill Hielscher (Texas), and Jim Hayter (Okla.). Although fewer in number than the Ford and Mopar racers, they are a stout breed and usually seem to produce more wins on a week-in, week-out basis than their thin ranks might indicate. Jenkins easily outdistances the pack in Super Stock racing and is equalled in effectiveness only by the Sox-Martin-King Plymouth operation. Arons is somewhat amazing in light of his young age, 25.

Both Jenkins and Arons reportedly have possession of 4.44-inch bore aluminum blocks similar to those used by McLaren in the Can-Am. When combined with a short 3.47-inch stroke crank, a 430-inch displacement of near ideal internal geometry (bore/stroke ratio) is achieved. Harrell may field a conventional 4.25-inch bore ZL-1 aluminum-blocked 427, while the remainder of the independents will run cast iron 427s and the like due to the \$1,400-each bare ZL-1 block price tag.

Because of the aluminum block and heads, along with four-speed and rear end parts that are lighter than the corresponding components of the competition, the Camaro seems to have an inherent weight advantage. It may be the only car capable of achieving the desired 55 percent of static weight on the rear wheels. Also, the ability to "diet" a Camaro to 2,700 pounds legally will permit the use of a 385-inch engine, an interesting combination.

The effectiveness of Chrysler's 1969 Super Stock drag efforts can best be summarized by pointing out that Plymouth won all Big Four NHRA events. It was a clean factory-sponsored sweep: Don Grotheer nabbed the Winternation-

**With extensive match-race experience, Bill Jenkins will be leading the Chevys. He's rumored to have a Can-Am type block for his Camaro.**



als; and the Sox-Martin-King combo grabbed the Springnationals, Nationals, and World Finals. There's no denying that the Hemi engine itself, backed by a hypercapable factory racing staff, produces results that are unequalled by any other factory effort.

The Mopar racers can be divided into two clans. The Plymouth racers are led by the phenomenal Ronnie Sox-Buddy Martin (and engine ace Jake King) combination from North Carolina, and backed up by Sooner Don Grotheer and Ohioan Arlen Vanke. The Dodge fleet is captained by Dick Landy of California and a newly added second clinic racer, Bill Tanner of Georgia. Fringe factory sponsoree, Bill Bagshaw, of California, definitely exhibited an outstanding performance for Dodge in '69, and there is no reason why he will not continue to do the same this year. But the real strength of the Chrysler operation is in their unequalled depth, as literally dozens of formidable and dedicated racers back up the six Chrysler front-runners mentioned.

Although GM was the first factory to recognize the import and capitalize upon the influence of Super Stockers upon enthusiasts, 'way back when, Chrysler today commands a lead in this field. An excellent race parts distribution program, combined with careful allocation of the budget, has resulted

in more muscular Mopar contenders than all other makes put together. While the Chrysler equipment is generally heavier than that of Chevrolet, there is a general feeling that this factory has the power edge with their 426 Hemi engine.

Ford's recent endeavors into the Super Stock picture can best be described as a giant effort. If the sport thought the Chrysler backing of Sox and Landy represented big factory money, it proved to be a mere pittance when Ford opened their coffers to finance the Hubert Platt and Ed Terry Ford Drag Club clinics.

No other factory unloaded such a wide array of performance engines in a short space of time as did Ford with their low-, high-, and medium-riser 427, SOHC 427, the tunnel port 427, 428 Cobra, Boss 429, and recently, Cobra Jet and Super CJ 429 wedge.

Among the Ford team racers there are two notables: Don Nicholson, formerly "King of the Funny Cars" with his SOHC Mercury, trounced his share of the competition in late '69 with a stop-gap SOHC '66 Mustang. Rumor has it, however, that Nicholson may return to Chevy's camp for 1970, an

irreplaceable loss. The second outstanding member of Ford's racer talent is Canadian quasi-independent Barrie Poole. This bright, young handicap racer was runner-up to Sox at the Springnationals, won both of his local circuits, held many records, and most important, garnered more points for Ford in the NHRA Manufacturers' Cup race than just about all the other factory boys put together. He'll be back in '70, winning for Ford, although not as a factory-sponsored team member.

Looking ahead, it appears that the new NHRA heads-up racing may become more popular than anything in the past. Sox is already running 9.5's with his '69 car, near the legal 7.00 pounds/inch weight, and to predict that Jenkins and Sox will account for at least 60 percent of the winning this season is not out of the question... but anything can and probably will happen. Despite the excitement engendered by heads-up racing, plus the "names" which will forsake handicap Super Stock racing to race the new way, the life prospectus for handicap Super Stock racing is still better than ever. At presstime, NHRA's Winternationals entries indicated almost 33 percent more Super Stock entries over Pro Super Stock Eliminator contestants. So both categories apparently are going to be the crowd pleasers once again in 1970.

A dumb question was asked the exhausted winner of the last Can-Am race of 1969: "Bruce, in a race like this, how important is the car in relation to the driver?" McLaren had an interesting answer to the dumb question: "I'd say the car is 100 percent important. Any of the top five drivers here could have won in my car."

This was a statement of fact, not a sample of the well-known McLaren graciousness and diplomacy. There is a simple reason for the importance of the car in Can-Am racing. The formula is for all practical purposes an unlimited one, which means that there are likely to be more radical differences between cars than, for example, in Grand Prix racing or at Indy where all have to have the same size engine.

Since the car dominates the Can-Am scene so strongly, it's actually inappropriate that the Championship is awarded to the winningest driver. It might better go to the most successful chief engineer! Last year it would have gone to the same man, Bruce McLaren, by an even wider margin. And we now know that the car's design will dominate the series even more in coming years, with confirmation by the Sports Car Club of America and the Canadian Automobile Sport Clubs that the rules will be changed in no major way from those of 1969 through the next three years, through 1972. The main plan will be to tighten up on some rules that were loosely enforced before, like fender

coverage of the wheels and open cockpit space for the "passenger."

At first it seemed that the longer 1969 Can-Am season, greatly expanded, would allow a team to catch up if it were behind at the beginning. This proved to be wrong. Those who were behind at the start found themselves behind at the finish. But new cars were introduced during the last six races, an average of one per race, cars which in some cases showed great promise for 1970. Promise, however, doesn't win. In 1969, as in the preceding two years, the Bruce McLaren Motor Racing Team demonstrated that it was not so useful to have a new car as it was to have a better one.

Without exception the 1969 M8B McLarens showed an improvement in speed amounting to 2 to 3 seconds a lap, depending on length and type of track, on circuits like Elkhart Lake, Laguna Seca, and Bridgehampton that hadn't been changed since 1968. When necessary, as it was at Texas International Speedway, to hold off an attack on the "pole" by a Firestone-tired car, Goodyear could roll out some extra-sticky tires for qualifying. Rim widths available on the McLarens included 10 and 11 inches in front, 16 and 17 inches in the rear.

Rumors persisted through the season that the McLaren team cars had huge engines, as much as 480 cubic inches in size. But they have in fact been only 430 cubic inches, in the five special

short-stroke versions of the ZL-1 aluminum Corvette engines made for them by Chevrolet, but rebuilt by ex-Californian George Bolthoff at Colnbrook, England. With strong torque and an extended rev range, reaching peak power of about 650 bhp, the "430" is entirely adequate if used in a light-weight car. "We tried a 465 once," Bruce McLaren said, "but it almost shook itself to pieces, and we never used it."

In 1970 the 465 version should be sufficiently well-developed to be used by McLaren. It uses the "430" block, which has a 4 $\frac{7}{16}$ -inch bore instead of the 4 $\frac{1}{4}$ -inch size that's normal on the alloy ZL-1. In the 430 c.i. edition its stroke is only 3.475 inches. Installing the 3.76-inch "arm" of the 427 Chevy brings the displacement to 465 c.i. For the ultimate in cubic capacity the crank of the new 454 engine can be fitted, opening the engine to 495 cubes. Horsepower with this combination can exceed 700 and torque could be more than 650 pounds-feet.

Three M8B McLarens were on hand for the 1969 campaign, but only 1 $\frac{1}{2}$  of them were new, as Bruce explained it. Denny Hulme's car had been built new from scratch for 1969. Bruce's was half new, using some components from his M8A of 1968. One of these left-over parts was a lower rear suspension wishbone, including the one on the left-hand side that broke at Riverside, sending Bruce careening off the track in his

most hair-raising experience of '69.

In the last race in Texas, Bruce won in the team's spare car, which was a rebuilt and modified version of Denny's 1968 machine. This had been raced twice before during 1969. Dan Gurney drove it in Michigan, taking it from the back of the grid to place third. Chris Amon faced the same challenge at Laguna Seca where he was up to sixth place when he bent the body against another car. He finally retired with a sheared hub: "The brake caliper was the only thing holding the wheel on the car." McLaren finished in Texas with the car very sick, out of water, low on oil pressure, and broken in sundry locations.

With suitable repairs, that reworked 1968 team car was sold after Texas to Lothar Motschenbacher. Lothar, a McLaren factory representative who does his own engine work and races with Leader Car sponsorship, had only a mediocre season in 1969 with a "production" McLaren M12A, placing seventh in the Championship. With his ex-works equipment and his experience, he should do better this season.

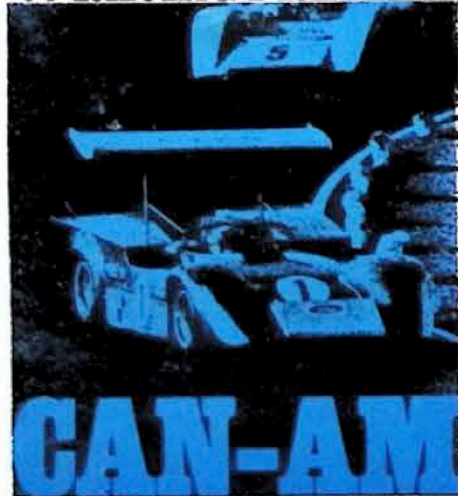
make, and difficult to maintain. To help press it down on the road a gigantic central wing was attached to the 2H for Laguna Seca, then removed after Riverside practice. A new and quick driver, Tom Sutton, crunched its long nose in early practice at Texas and kept it from running in its home state.

Hall's plans for 1970 are, as usual, uncertain. His Camaro program will detract from his Can-Am efforts, both for his race mechanics and his captive engine builder, Gary Knutson. He could rebuild the 2H, but there's no time for him to prepare an all-new 1970 Chaparral of his own. Late in '69 he was already test-running Chevrolet's latest experimental Can-Am car, which uses two fans to suck air up from the bottom of the car, creating an effect of "gluing" it down to the road for better cornering grip. It works, but it keeps

nature of the car which was not designed specifically for Can-Am. Yet it performed well in the series, in spite of exploding from accidental over-revving at Elkhart and problems with oil leakage at Riverside.

Experience with the Porsche showed that it needed more front-end aerodynamic downthrust for best handling in the hotly contested 2-mile sprints of the Can-Am. To get this it was given "elephant ears" on the front fenders, but in the pace lap at Laguna Seca, Dan Gurney knocked one of these off, ruining the Porsche's handling. Before Riverside, Richie Ginther and the Porsche-Audi crew had a new nose made in Culver City for the car, one with a sharper wedge profile that would add downthrust without being vulnerable to damage on the track. Tony Lapine's Porsche stylists will refine

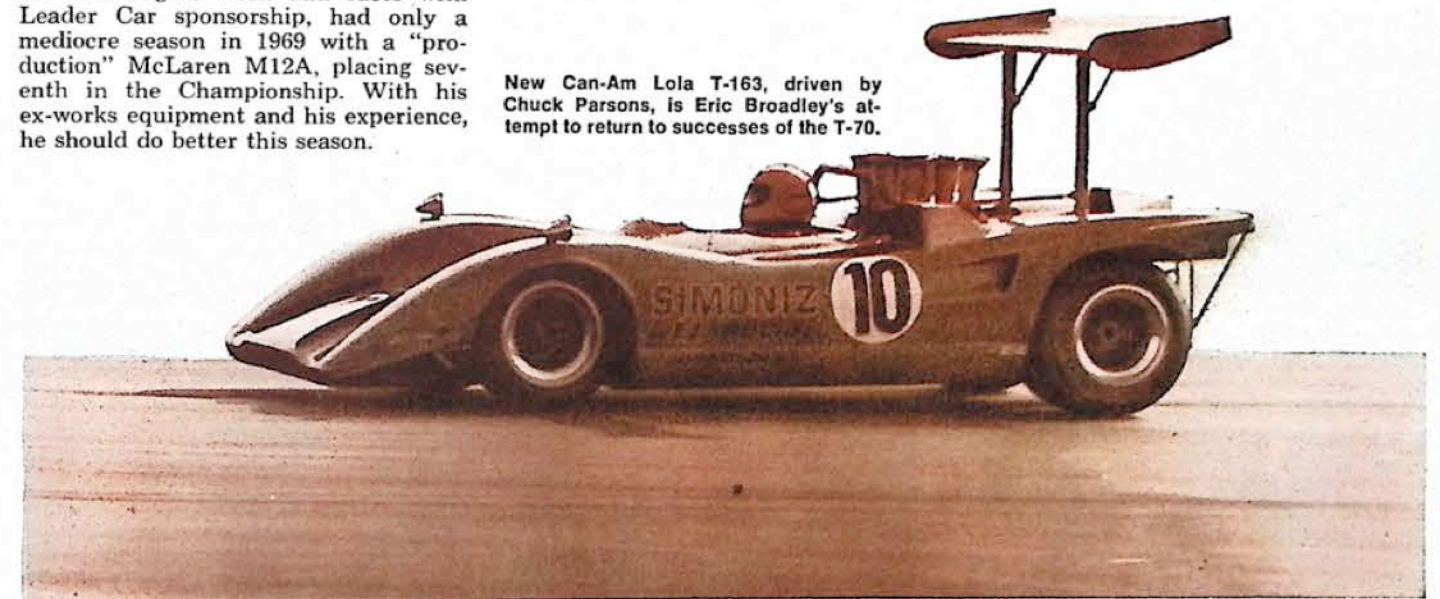
## '70 RACING PREVIEW



**Titanium, Japan, AVS, Broadley, Hall, and Gurney will all try to unseat Team McLaren.**

BY KARL LUDVIGSEN

Bruce McLaren will find it more difficult to win in 1970 as Can-Am opposition strengthens.



New Can-Am Lola T-163, driven by Chuck Parsons, is Eric Broadley's attempt to return to successes of the T-70.

Another M12A McLaren raced fairly successfully five times last season, had the potential to be a challenger to the factory cars if its owner had desired. But Jim Hall wasn't interested in developing his white McLaren with the huge red-tipped wing except as a test-bed for his new Chaparral. In that role it wasn't very successful. It ran with the low-profile crossover manifold designed to suit the 2H, one which later tests showed cost 30 bhp. With the small inlet air boxes and exhaust pipes used on the 2H a total of 100 bhp was sacrificed compared to a more conventional layout.

Lack of power was the last thing needed by the Chaparral 2H, which had been designed early in 1968 around a concept of low drag, low frontal area, and low weight, relying on super-wide Firestones to put its power on the ground. To get the low frontal area, Jim Hall made the 2H very narrow, 7 inches narrower than the M8B McLaren and 16 inches narrower than the Ferrari 612P, too narrow for best cornering and handling. To get it light, the whole front of the car was a fiberglass monocoque: complex, exacting to

breaking. If it can be made reliable we'll see it in action this year.

The pipeline from Detroit to Midland is still intact, but a new one is also functioning to Colnbrook, England. On the engine side it'll be shortened this year, as McLaren plans to relocate George Bolthoff and his engine shop from England to Detroit, which will become the Can-Am operating base for the Championship team. Using the one all-new 1969 M8B as a test-bed, leaving the suspension pretty much alone, McLaren started testing new engine and aerodynamic ideas early in '70. For power, Bruce is working on a new cylinder head design with two intake valves and a single exhaust. Aerodynamically he's certain to try a front wing as well as the rear one that worked so well last year.

In August last season the big news was the arrival of Jo Siffert in the Porsche 917, a combination that scored points in five of the last seven races to be ranked fourth in Championship points. Its best placement was third at Bridgehampton, where the entry list was unusually thin. Speed was limited by the engine's valve gear and the heavy

this for '70. Under the rear deck there'll be more power this year, likely from turbo-supercharging of the flat-12 instead of the rumored 16-cylinder version of the engine.

Also much heralded was the McLaren for Mario Andretti, an M6B model which Holman-Moody had rebuilt and rebodied to accept Ford's RX-412 engine, also known as the "494" for its cubic-inch capacity. Hemispherical chambers gave this huge engine ample power but nothing like the rumored 800 bhp. In its last race at Texas it was much improved, with Lucas injection replacing Hilborn. There it developed just over 670 bhp at 7000 rpm, enough to qualify it second fastest on extra-adhesive Firestones. Andretti's blue Ford placed fourth and third at Laguna Seca and Riverside, showing that the new hemi-head engine from Dearborn might be a worthy Can-Am contender in the future.

At one of the two all-new tracks in the '69 series, Michigan International, Dan Gurney rocked the balance of power in the Can-Am hot war with a switch from Ford to Chevy power. His

*continued on page 108*

## '70 RACING PREVIEW



**New engines, new chassis, new shapes, new people, new tracks — ver-ry interesting.**

# USAC

The United States Auto Club may have trouble taking care of turbines, but it's pretty good to all the other engines. That's one of the lessons of the '69 season, which saw victories in Championship events by six different kinds of power units. Among the winners were the stock-block Chevy, stock-block Plymouth, unblown four-cam Ford, unblown four-cam Repco, and turbocharged versions of both the Ford and Drake Offy. There's nothing dull about a series that can produce that kind of variety!

USAC has done its best to stabilize the rules that led to these interesting results. The engine sizes that were in effect during '69 will remain on the books through 1971. During the same two-year period, four-wheel-drive cars will be prohibited, which relieves the Indy fraternity of another design variable to worry about. But I hope USAC will vote to reinstate this progressive feature in 1972.

Several influences are reshaping the Champ cars of 1970. USAC has clamped down hard on the rules that affect the size and shape of wings and airfoils. Last year the relevant rules were sufficiently vague to make it almost impossible to police them effectively. This year they're much more precise. They

state that the car height, measured from the lowest to the highest part of the chassis tub or body, can't be greater than 28 inches. Excepted are mechanical parts like the roll bar, intake horns, exhaust headers and turbo-charger waste gate. Completely excepted, of course, are the tall front-engined dirt-track cars.

Any aerodynamic device has to be framed within this height limit and the already-established boundary on car width, held at each side to a longitudinal line connecting points three inches outside the inner edges of the wheel rims. And they can't be movable, or even firmly screwed onto the body. Any part that has an aerodynamic influence on the car has to be an integral part of the main body shell. Teams like McLaren will be doing their early testing with nose pieces with adjustable wings, then will come to Indy in May with several different basic noses that they're pretty sure will work.

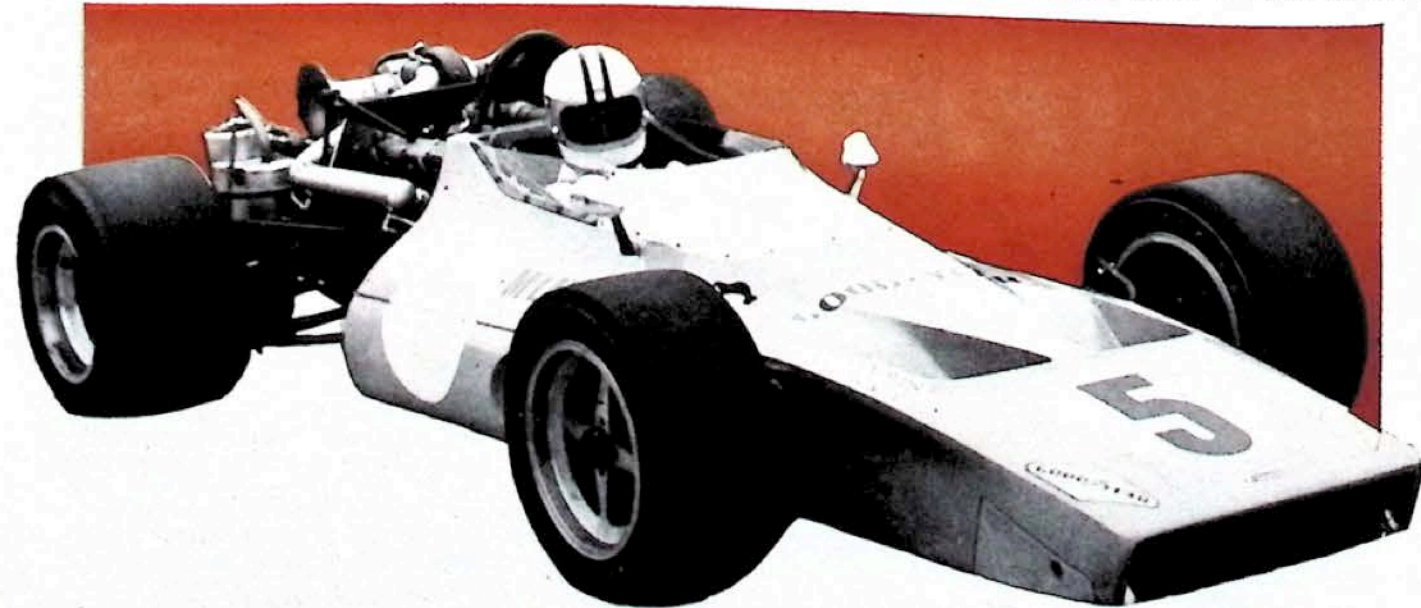
The wedge shape, adopted prematurely by builders like Gerhardt and Gurney last year before it was fully understood, will be discarded by most USAC entrants just as fast — maybe faster than it should be in view of the new wing rules. A marked wedge shape will still be most effective on shorter,

slower tracks, where its downthrust will be useful and its increased aerodynamic drag won't be a handicap. Indy and Ontario will call for much slipperier shapes. In fact, with its wide variations in types of oval tracks, plus races on road courses, USAC faces its car owners and mechanics with a more challenging range of track conditions from one weekend to the next than are encountered by other professional racers.

At least Ontario is just about like Indy. What works at one track should work at the other. And what a track! The Ontario plant, just 40 miles east of downtown Los Angeles, is shaping up as the most important single thing ever to happen to auto racing. The mere existence of its 500-mile Labor Day race with a \$750,000 golden pot at the end of the road is bound to sweeten the 1970 outlook for those USAC teams that are capable of competing for top finishing positions.

Next to Ontario, the biggest news in USAC's scene for '70 has been the switch in the factory Ford engine program from Louie Meyer to A.J. Foyt. With skill, affability and open-handedness, Louis Meyer and his family handled the sales and service of Ford four-cam Indy engines from their Indianapolis shop since late 1964. But they didn't own the pieces; Ford did. Ford asked the Meyers if they'd like to pay about \$500,000 for some \$800,000 worth of parts in the inventory to take over the whole works, tools and all. They demurred, leaving the field open to another three-time Indy winner. With the establishment of the A.J. Foyt Engine Corporation, Foyt has moved all the engines and pieces to his expanded Houston shops.

The Louis Meyers Senior and Junior weren't in racing themselves, but the A.J. Foyts Senior and Junior very much are. Since the announcement it's been a standing joke in USAC circles that all the Fords but the one in A.J.'s car will expire mysteriously in the course of this year's big races. Without question, Foyt will have the edge over any other Ford user. He may or may not, for example, decide to make available



the special turbocharger manifold that Stuart Hilborn worked out for him last year.

Foyt will have an edge for another reason: His Coyote chassis work well. Shaped classically and smoothly for Indy and Ontario, they're neatly matched to the power curve of the turbo-Ford. Carl Williams bought one of the 1969 Coyotes, and new ones will be in the making for A.J., of the same basic Lotus-derived design.

Another formidable team will stay with the blown Fords that served them so well this year: Vel's-Parnelli Jones Racing. With Al Unser at the wheel and George Bignotti in the pits they showed that the Lola chassis with turbo-Ford power was a winning combination. It will be further refined this year, obviously on Firestone tires, with the help of an expansion of Bignotti's Indy

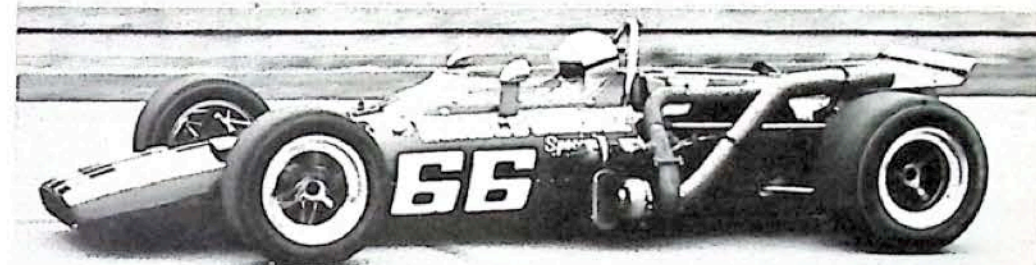
be a test and backup car for an all-new 1970 Indy Lola chassis. After his smooth '69 showing and stellar Rex Mays performance, Donohue has to be ranked a strong contender for a win at both Indy and Ontario.

Then there's Mario. He and Andy, it seems, were a little miffed that they didn't get the Ford engine deal. For a while it appeared that they might break from their former expression of fidelity to Ford power for 1970, but at last report the red STP cars will still be using the V8 that won Indy for them in 1969. Andretti's newest Hawk will be a backup chassis in 1970. All-new cars are being built for Granatelli's STP team, reportedly by an organization that's new to USAC, West Germany's Mc-Namara Racing. They've been known mainly for their Formula Vees before.

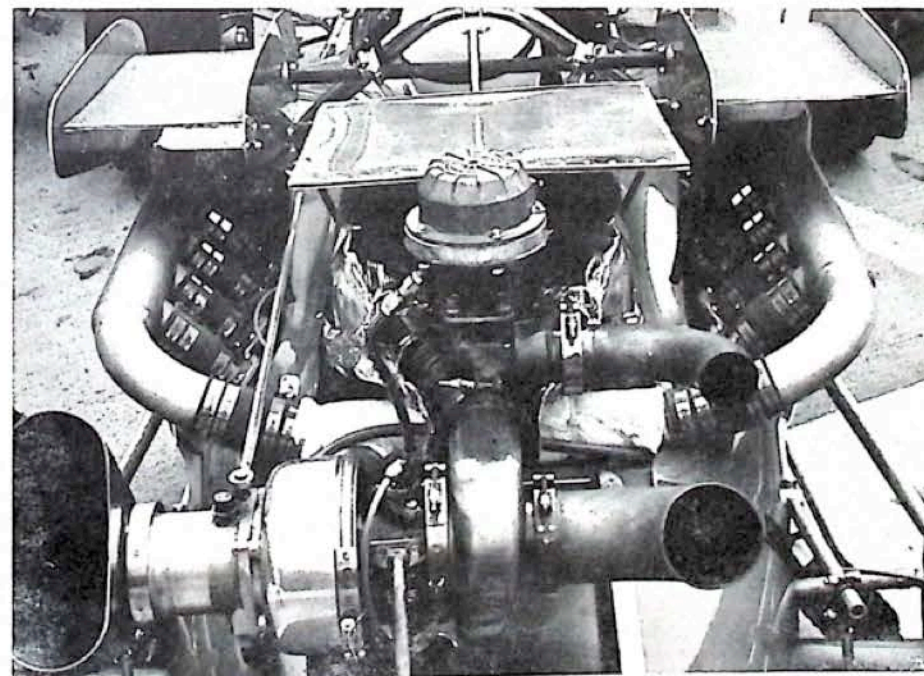
Continuing the season-to-season car-

go the turbo-Ford route late in 1969, at least at Indy, where his stock-block engines have been outclassed by the supercharged units. Then along came Plymouth, on the Trans-Am side, followed by the announcement of the Ford switch to Foyt. Result: Mister Gurney picked up the phone, dialed Dale Drake at his new plant just down the road in Santa Ana, and ordered some Offys.

Tony Southgate, who designed the '69 Eagle, is back in Britain working for BRM. For detail engineering of his 1970 model Dan turned to free-lancer Len Terry. Briton Terry had been responsible for the design of the original Eagle, one of the more impressive exhibits in his portfolio. His new design for AAR breaks away from Southgate's flat-bottomed body to a more rounded belly that Dan hopes will be aerodynamically superior on fast tracks.



McLaren Indy Car (left) should be top contender with Hulme and Amon. Penske-Donohue combination (right) goes to Ford power. Foyt turbo-Ford (below) could be winning power.



shop after its purchase by Vel Miletich and Parnelli Jones. Somewhere in back they'll park their reworked four-wheel-drive Lotus wedge, the most costly and elaborate white elephant of the entire 1969 season.

During Firestone's late, '69 tests, Al Unser lapped Indy at 172.8 mph and ran 40 miles at more than 170 mph. Performance like this helped convince Roger Penske and Mark Donohue that they'd be well off with turbo-Ford power in a new Lola chassis this year. First they'll put a blown Ford in their current Lola, the one that's been running the road courses with a Chevy in it. That'll

switching that can't be doing him any good, Bobby Unser will be seen this year with turbo-Ford power in a brand-new Eagle chassis from the shops of All-American Racers. This time Bobby may have jumped the right way. Others who are expected to sign on the line for a new Eagle are Gordon Johncock, Johnny Rutherford and Lee Roy Yar-brough. They can use either the Ford or Offy, thanks to an extra week of engineering that went into the new bird from Santa Ana to ensure that it could fly both ways.

This flexibility helped Mister Gurney himself. Dan was reportedly ready to

Complaints about limited fuel space in earlier Eagles have been eradicated by extending the monocoque rearward along the sides of the engine again, filled with fuel bags. Terry has tucked the front coil springs back inboard, where he had them on the first Eagles, and neatly shrouded the outboard rear coils. Suspension geometry is along what ARR calls the "1969½" lines, benefiting from the several weeks of steady practice the team put in at Riverside before the Rex Mays race. On the road courses Dan will continue to use the Gurney-Eagle-headed Ford engines, perhaps with Swede Savage in a second car. But at Indy he'll concentrate entirely on a single car for himself, with a backup machine. I get the impression Dan would like to win that race this year.

Gurney and company are also interested in the blown Offy engine because many of its recent difficulties have been with pistons, a part of the engine with which AAR's John Miller is well acquainted. In January they'd already begun dyno-testing an Offy to find out about its care and feeding. Other California testers, already familiar with the venerable four-barrel, saw 750 bhp on their dynos this winter as they tried out the entirely new turbocharger that had been developed by AiResearch just for this engine.

Dale and John Drake and designer Leo Goosen can be pretty sure their Offy isn't dead yet. Well-settled into their sparkling new plant, they've ordered something they've never had before, not in the long history of the Offy engine: their own dynamometer. They'll have something to try out on it, too. Hardware is in the works for an exper-

imental short-stroke Offy with a bore and stroke of 4.281 x 2.750 inches instead of the "stock" 4.030 x 3.125 inches. If this doesn't create new piston problems it could help the engine live longer at the five-figure speeds it's being asked to turn to stay competitive.

Veterans of the turbo-Offy like Lloyd Ruby will certainly return to it this year. No matter what he drives, the phlegmatic Ruby will be challenging, at some point, for the lead at Indy or Ontario. But next to Gurney one of the most interesting users of the blown Offy this year will be Bruce McLaren. Strictly speaking it won't be Bruce himself, as he says he won't be taking the wheel, but rather Denny Hulme and Chris Amon in the cars that Bruce built. They'll have two McLarens plus a backup car, the same one that was tested at Indy last November. After only two races, Indy and Ontario, the cars will be sold.

Typically the new M15A Indy McLaren is a simple, practical racing car. With its one-piece upper body removed it looks like what it is: a low, flat fuel tank with a dent in it for the driver and the engine bolted to the back. McLaren and designer Gordon Coppuck made it like a rounded version of the 1969 Eagle, using the engine as part of the frame structure at the rear, supplementing it with triangulated tubes to the special cast magnesium clutch housing that's the junction point for the rear suspension attachments.

Built in only five weeks, the M15A uses many suspension pieces from the M8B Can-Am cars. In fact, it had Can-Am brakes at first, which were judged much too big for the job and likely to be replaced by smaller Grand Prix brakes. After some 300 miles of testing at Britain's Goodwood track came last November's Indy runs, when Amon had a brief chance to try it and Hulme lapped at 168 with a mild engine that was strictly for testing. One of their toughest initial problems was the Offy's fierce vibration, which was setting off sympathetic shivering and subsequent breakage in some important frame tubes. In further tests in March they'll see whether they made the correct improvements.

Other brand-new Indy chassis are

being crafted by the capable hands of Eddie Kuzma, builder of the frame of the Hawk that won last year. Eddie's new cars will hold the full 75 allowable gallons of fuel to suit the thirsty turbo-charged engines, and will take either the Offy or Ford. Clint Brawner and Jim McGee will be tuning one up for their new driver, Roger McCluskey, and Jack Beckley will be getting another Kuzma in shape for Wally Dallenbach. As a backup machine the Brawner/McGee crew, formerly with Mario Andretti, has also acquired the Lola that Bobby Unser drove during 1969.

What of the Meyers, Senior and Junior? Were they content to watch the big truck drive away with all the four-cam Ford parts on board, retiring to the farm with their memories? Not on your life. Sonny Meyer has been hard at work on a Ford that will fit USAC's category for blown stock-block engines up to 203.4 cubic inches (3330 cc) in displacement, a class that will be worth watching in the future.

First, you take a Cleveland-built Boss 302 engine. Then you insert a turbo-Ford crankshaft with its 1.903-inch stroke, bringing the displacement down to 192 CID, from which the bores can be cleaned up to the category limit. You use the rods, oil pan and pumps from the Indy Ford engine, with special pistons made by George Salih. At the front you use a Gurney-Eagle accessory drive revolving an Engle cam, and you worry a lot about finding suitable rocker arms. Top it off with Bendix fuel injection through eight individual throttle bores and a Schwitzer-Cummins turbocharger and you have a heady cocktail for the Speedway.

In their new shop, complete with dyno, the Meyers are trying this combination with iron heads before considering the Gurney-Eagle aluminum heads, which they'd also be able to run. Familiar as they are with turbocharged V8 engines, the Meyers might just be able to get this one to work.

Meanwhile, the inveterate independent, Jack Brabham, has a Ford-based scheme of his own for USAC. With Repco out of the racing engine business, the wily Australian is developing some specially modified cylinder heads to run on an unsupercharged 320 CID version

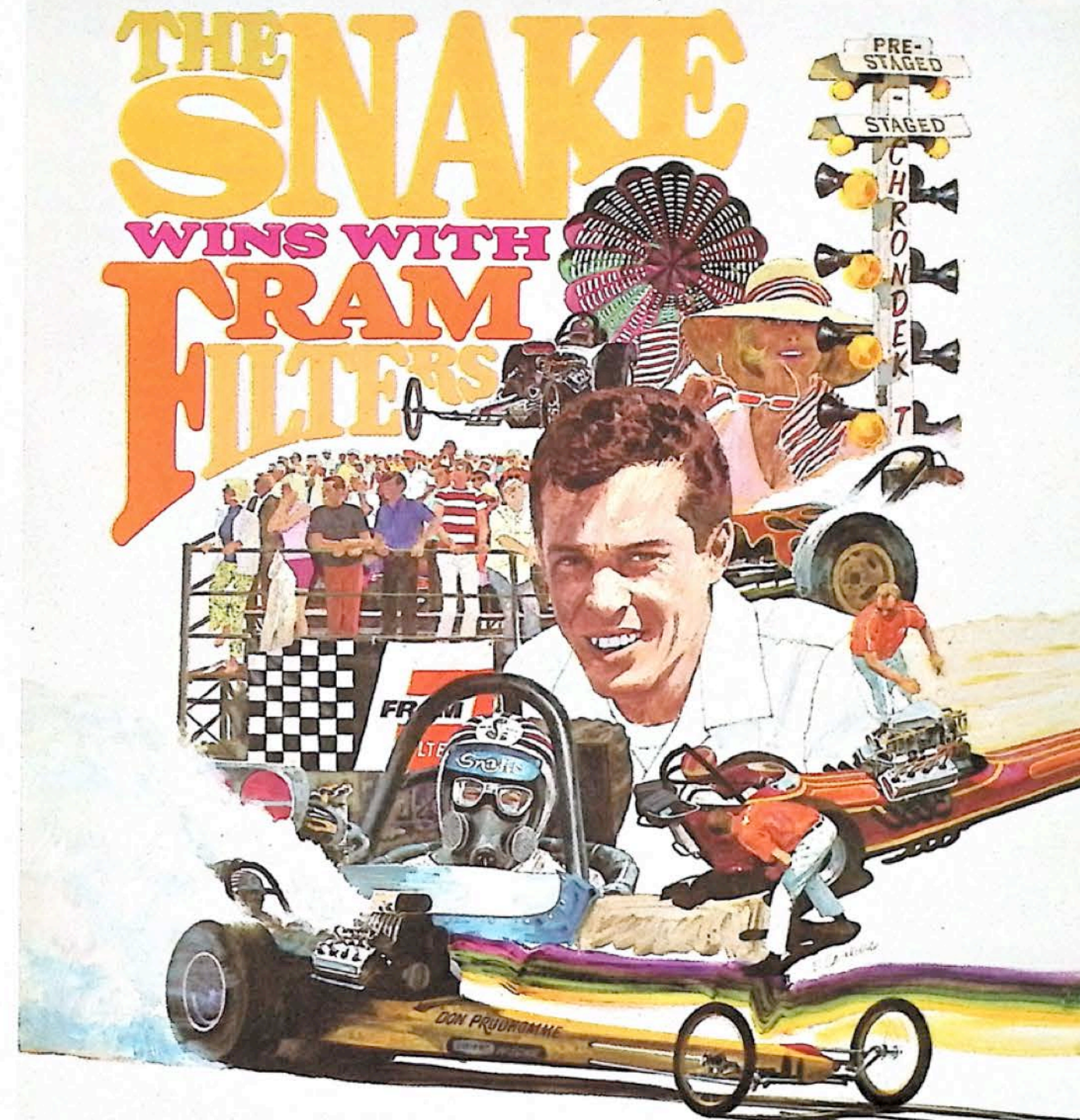
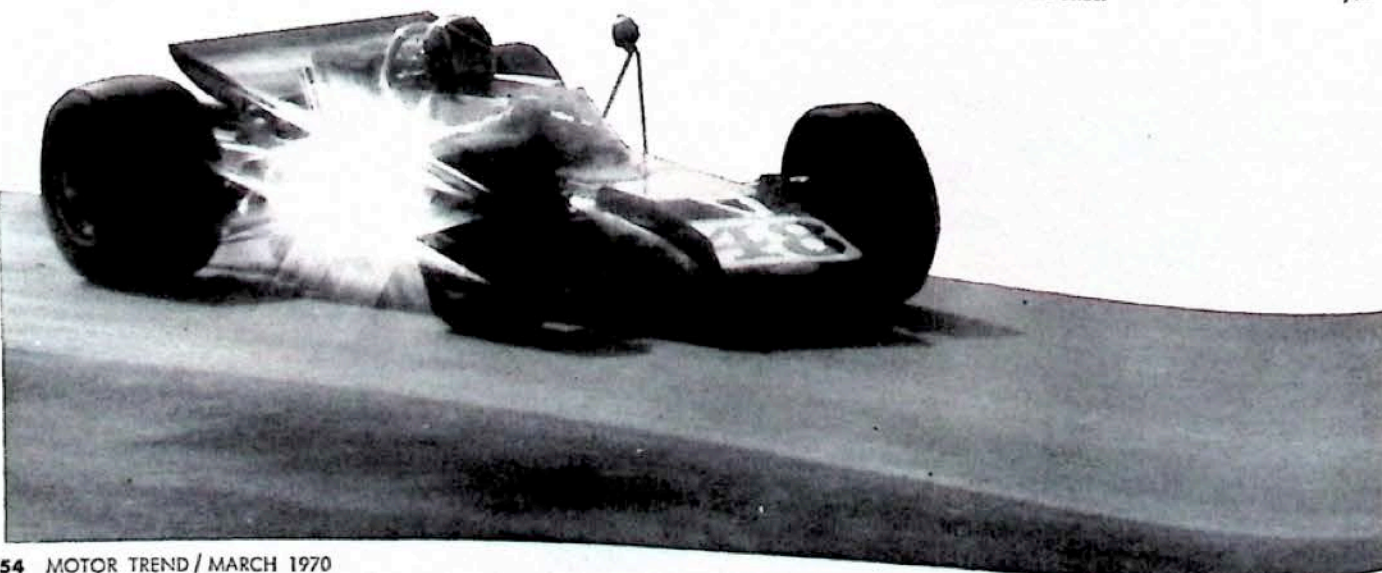
of the Boss 302 engine. There may be a link with Carroll Shelby in the work that's being done on a special camshaft and 180-degree crankshaft for this Brabham-Ford. On a longer-range basis, perhaps for Ontario this year if not for Indy, a turbocharged 203 CID version of the same engine is in the program.

Encouragement for such undertakings is provided by the success Bruce Crower has had so far with his special out-board-intake cast iron heads for the 320 CID Chevrolet engine. Created to help the faithful small-block Chevy breathe more effectively in the range above 7000 rpm, the heads seem to be doing the job. An output of 610 bhp on straight methanol is spoken of, which if true is something like 50 bhp more than the Gurney-Eagle delivers on the same diet.

Performance on the dyno isn't the same as speed on the track, as Jerry Eisert found out last year with his pioneering turbocharged stock-block Chevys. Using an adaptation of an AiResearch-Hilborn blower setup designed for drag racing, some impressive 700+ bhp figures were recorded, but the cars with the engines didn't run well enough to try to qualify at Indy. This year they might be ready.

Eisert's chassis equipment and Gurney's aluminum heads for the Boss 302 engine will figure strongly in Marvin Webster's attempt to qualify a car at Indy this year. Webster's first car, with Jerry Grant in the cockpit, made a few appearances on the trail in late 1969. He's extensively modified the stock Gurney-Eagle heads, installing larger valves, titanium spring retainers and a super-radical cam grind. Webster's car will be handled at Indy by a newcomer to the track and to American racing in general, Australian Kevin Bartlett. Continuing an association he began with Frank Matich, Webster is introducing Aussie talent to U.S. tracks.

Variety? There was enough for the most jaded fan along the Championship Trail last year, and 1970 will top that by a wide margin. Thanks to the interest of the TVS television network you'll be able to see eight of the races on the tube this year, plus others that ABC-TV will pick up. Maybe this new-fangled oval-track racing is starting to catch on at last. /MT



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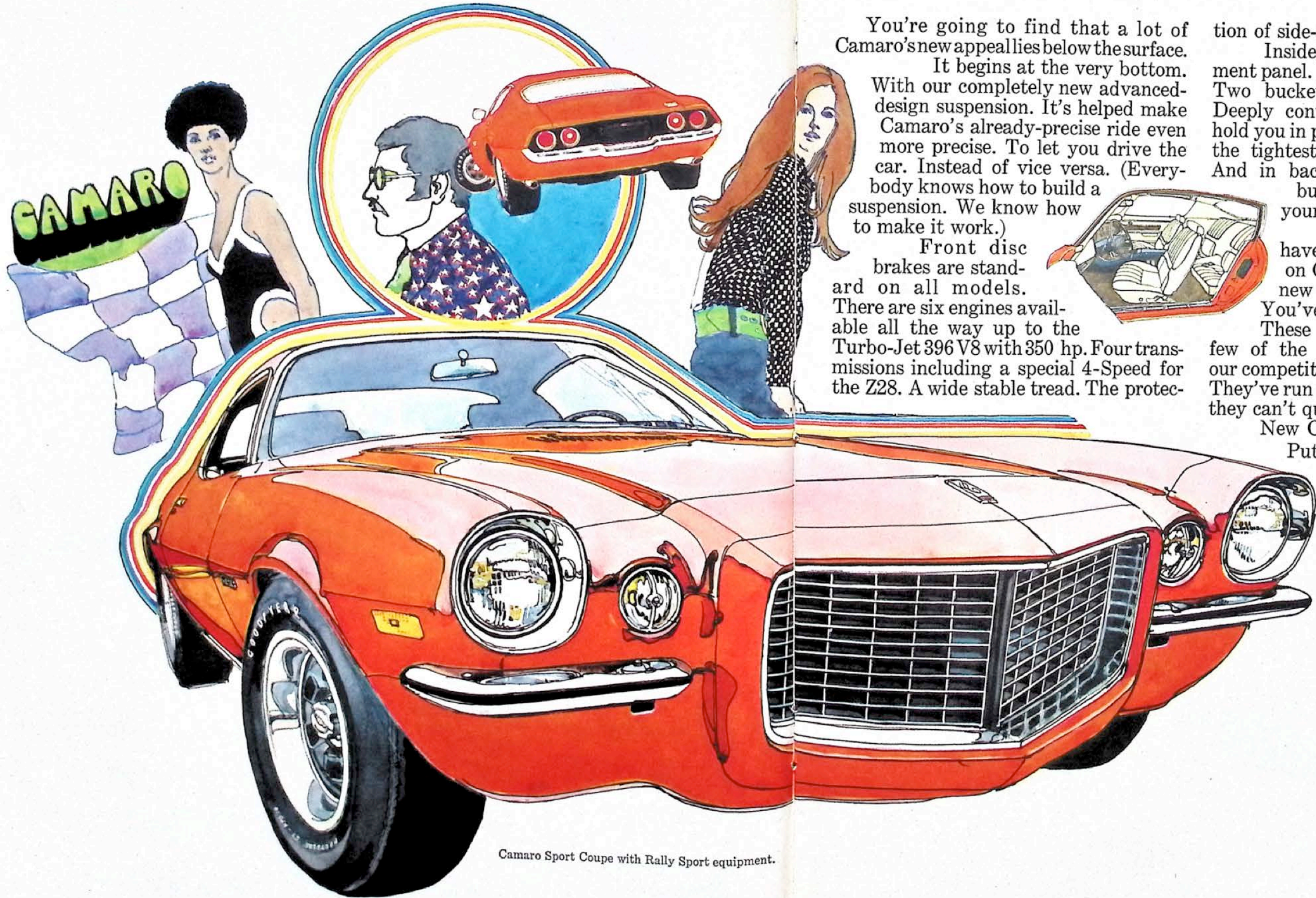
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# New Camaro.

# Now our competitors know how the captain of the Titanic felt.



Camaro Sport Coupe with Rally Sport equipment.

You're going to find that a lot of Camaro's new appeal lies below the surface.

It begins at the very bottom. With our completely new advanced-design suspension. It's helped make Camaro's already-precise ride even more precise. To let you drive the car. Instead of vice versa. (Everybody knows how to build a suspension. We know how to make it work.)

Front disc brakes are standard on all models. There are six engines available all the way up to the Turbo-Jet 396 V8 with 350 hp. Four transmissions including a special 4-Speed for the Z28. A wide stable tread. The protec-

tion of side-guard beams.

Inside, a new instrument panel. And new seats. Two buckets in front. Deeply contoured. To hold you in place through the tightest maneuvers. And in back, two semi-buckets that do the same for your friends.

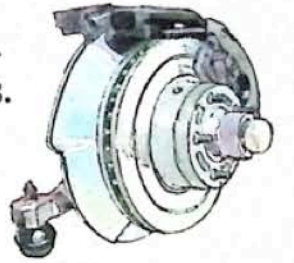
And, of course, we haven't even touched on Camaro's sleek new appearance.

You've got eyes. These are just a few of the reasons why our competition is on edge. They've run into something they can't quite handle.

New Camaro. The Super Hugger.

Putting you first, keeps us first.

See it, Feb. 26th. At your Chevrolet Sports Dept.



# '70 Corvette. What else.

Here it is. It's not really a whole lot different looking. But in 17 years, we've never changed it just to change it.

And there's one thing that hasn't changed at all.

The Corvette idea.

It's still a car that's built for the

person who drives for the sheer excitement of it. For the driver who enjoys the true feel of the road.

Yet, it's still a car you can drive at

10 mph in a traffic jam.

It's still a car you can swing out to the beach in. Or pull up in front of a theater with your girl dressed to the teeth.

No, it isn't a hard-core sports car. There are too many nice things about it. No, it isn't a luxury car. It was made to perform. And it does just that.

No, it's not the smoothest riding car you'll find. But then again, it won't rattle your bones.

What it is is a new Corvette. It's refined for '70. The 4-Speed is standard. So is tinted glass. There are even a couple of new engines. All the way up to the 460-hp Turbo-Jet 454.

But if we know you, you'll find out all that for yourself.

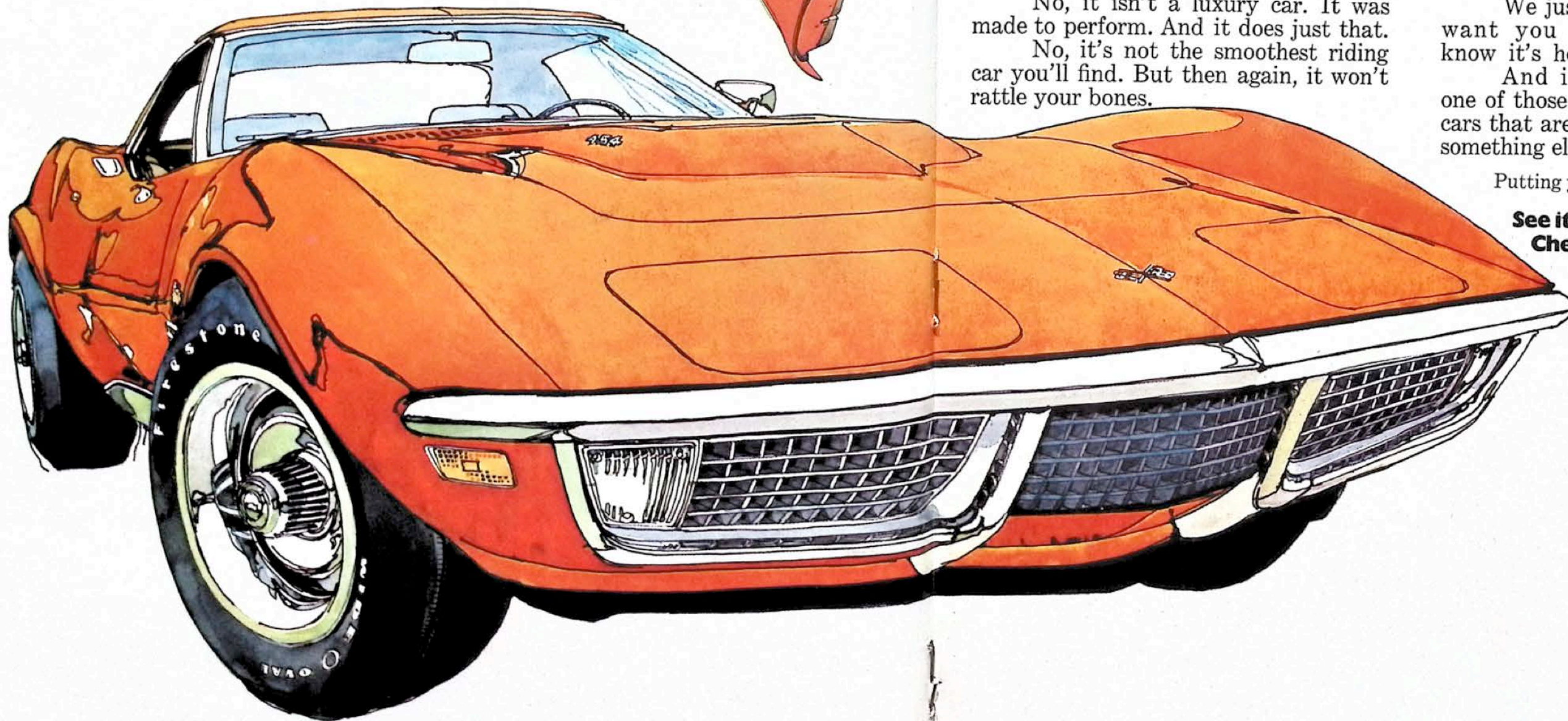
We just want you to know it's here.

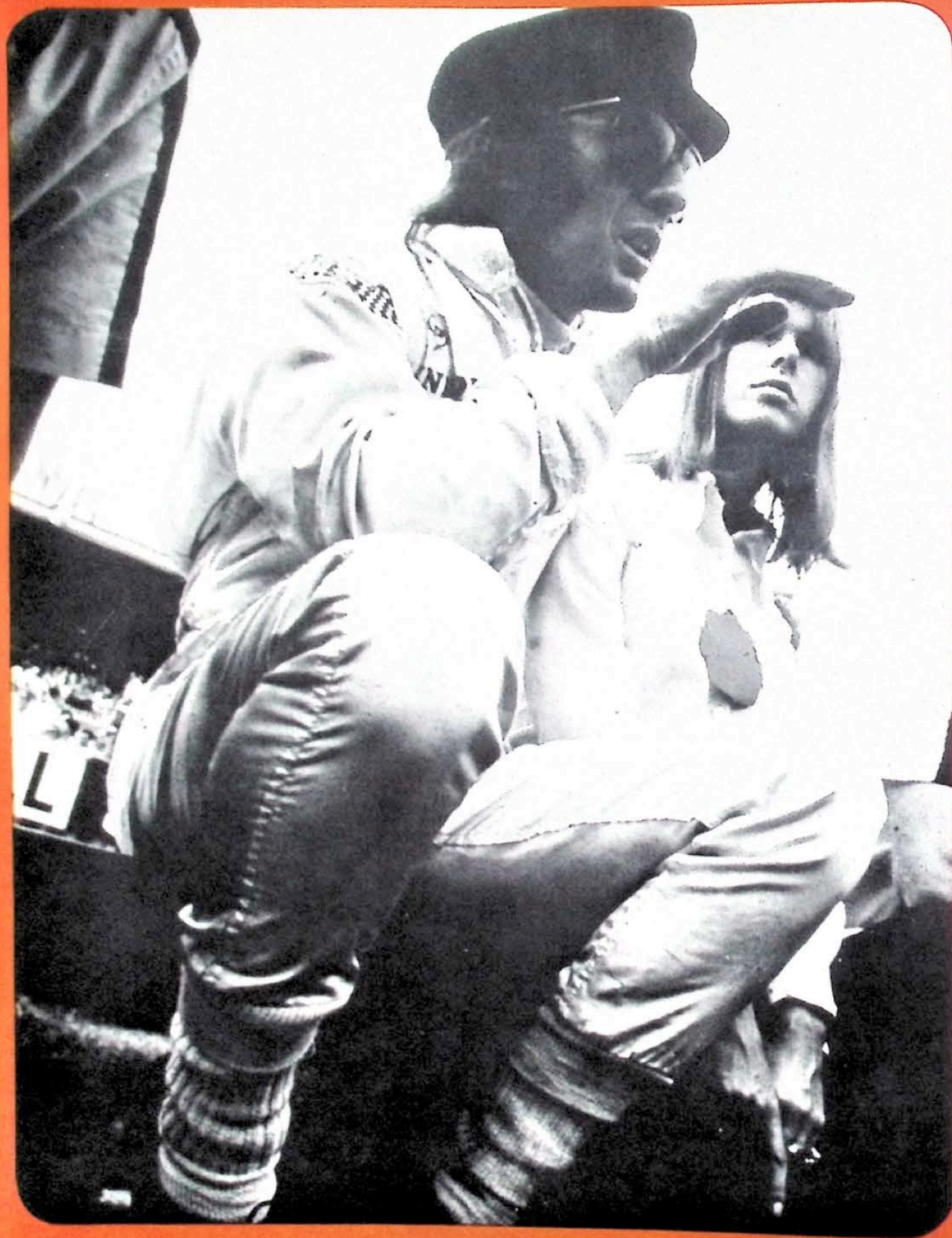
And it's one of those few cars that aren't something else.

Putting you first, keeps us first.

**See it, Feb. 26th. At your Chevrolet Sports Dept.**

**CHEVROLET**





## JACKIE STEWART

*A professional driver gets paid to drive. Jackie Stewart is a professional. He gets paid and paid and paid and paid and...*

BY EDOUARD SEIDLER

**D**on't get him wrong. Long hair does not necessarily mean your ideas are short. And you might look and dress like a hippie without especially living like one.

"I wear my hair long because Helen likes it that way," says Jackie Stewart. "But basically, it was all an accident. For awhile, I did not find time to have it cut. Then I went to a barber in Los Angeles. A specialist. You know, one of those men who take care of all those Hollywood celebrities. He said long hair fitted me o.k. Since Helen felt the same way and since he was supposed to be a specialist, I let it grow!"

Jackie laughs, and laughs, and laughs. Because of his hair, one famous German racing photographer decided last year he would not cover the races anymore: "I used to photograph racing drivers when they were gentlemen. I have no time for hippies..."

Come to think of it, Jackie Stewart should have been born 20 years earlier. He would have kept his hair short, and he might not have been world champion then. But he would have felt at ease in that generation of happy drivers who did not take their racing too seriously but lived at a thousand miles an hour. Nothing mattered to them; they were racing and having a ball. Some of them died, and the others would feel sad for awhile, and then they would have a ball again. There were no real pros then. You did not get rich racing, but you had many friends, all the girls you wanted, and a heck of a good time.

Jackie Stewart could have been one of them. He "loves nothing better than a good laugh," and he often proves it.

But Jackie came 20 years late. Racing is not the same anymore. Racing means money. The pros are all over the place, on the circuits, in the pits. Henry Ford goes racing, and so does Madison Avenue. It is not the same anymore, and Jackie Stewart knows it.

"Racing is too serious a thing to be taken lightly. I love the sport, but I know all about the money and the safety. I am safety-minded because I love my family. But I also go for safety because I want to be in this game as long as possible. I studied every aspect of safety, not because I was afraid, but in order to put all the chances on my side. You can't go through life or racing without taking some risks. But your risks must be calculated. If you don't understand that, you are a fool."

On his way to the world championship, Jackie won 6 races out of 11 last year, came in second at the Nurburgring where he suffered from a broken gearbox, and finished fourth in Mexico where he had the wrong tires. He broke down at Monte Carlo and at the Glen. Jackie Ickx pushed him off the circuit at Mosport. By mid-season, no one could catch him, and he was world champion with three races to go. He could have more than doubled his income, had he wanted to race prototypes or Can-Am cars. But there are just a few things he will never do, such as driving at Le Mans, or racing a Lotus. Colin Chapman twice offered him to join his team. The first time was before Jimmy Clark died, the second after.

"I refused both times. I like to race for people like Ken Tyrrell. Not just because he was the one who gave me my first true chance. But because he is the most serious of all present team managers. He is a man who knows how to figure out every risk. He would rather lose a race than lose a driver. That's also why I enjoyed driving for Matra. This is a team which does not confuse racing with Russian roulette. They always picked the safest formula, when they had a choice between a brilliant technical solution and a sound one. When I climb into a Matra, I know I won't be sitting right on a barrel of dynamite."

Because he felt the Spa circuit was not safe, Jackie had the Grand Prix Drivers Association strike the Belgian race out of their program last year. For just the same sort of reason, Jackie drives as little as possible on the road.

He does not enjoy it, and he truly believes that regular driving is by far more dangerous than racing.

"I use my own cars (a Ford sedan and a Matra coupe) to drive from home to the airport. The luxury I would really like to treat myself to would be a chauffeur. Sitting back and leaving the driving to a chauffeur, with or without a cap on his head, that's the thing!"

He laughed again, just as he laughs about anything not directly connected with racing. The late Jo Schlesser, a most conservative driver on the road, used to say he would speed only if they paid him for it. "He was right," approves Jackie. Of all the Formula 1 drivers, Stewart is the only one who ever came up with a statement in favor of speed limits—the most unpopular project with any car owner in Europe.

You might think that racing never had as frightened a world champion as Jackie Stewart. Not so. A careful and cautious type, he is also of the breed which goes all-out once a race is on. While just about everybody but Graham Hill chickened out in the most grueling of all Nurburgring races in August 1968, Jackie drove and won a superb Grand Prix on the wet and through such fog that no driver could see 50 yards ahead of his car. When it comes to winning a race, Jackie is never stingy with his own efforts; he has as much pride and lust for victory as the greatest men in the racing game.

When he tries to describe himself, his first word is "happy."

"I am a happy man," say Jackie, "fully happy. I have a wonderful wife, two great kids, a dream house on Lake Geneva. I have all my health. I do what I like most, racing. And I am successful at it. What else is there? If I could not race anymore, I honestly don't know what I would be doing. Racing is my life."

Like many others, though, he entered the game by sheer accident. Jackie left school at 15 and started working as an apprentice in his father's garage near Dumberton, Scotland. A natural mechanic, he soon began fiddling with some enthusiasts' cars, tuning them and pepping them up.

Occasionally, he would test-drive one of them on some of Scotland's rough country roads. He did not especially enjoy the rides, but he liked the job. Never did he think of racing at the

*continued*



time, despite (or maybe because of) the example given by his older brother, Jimmy, a fair pilot who retired from racing in 1955 after three bad spills, one of them at Le Mans.

He was interested mostly in hunting and shooting. Soon enough, he turned out to be one of the best guns around. His reflexes were good, his vision perfect, his shoulder and arm solid. He took up clay shooting and started winning every trophy in sight, as well as the Welsh, English, and British championships.

"They picked me as substitute on the British team before the Rome Olympics, and I was to be a regular on the team in 1964 at Tokyo," Jackie recalls.

By then, however, fate had already made a professional driver of him, and he had to decline his Olympic draft. Three years earlier, in 1961, one of his clients at the repair shop had asked him to drive his car (a Ford-engined Marcos) in a club race on the nearby Charter Hall track — the same track at which Jim Clark had made his start several years before. Jackie raced the car once, twice, started winning, and has yet to stop.

But it was 4 years before his mother found out that young Jackie had taken up racing.

"I entered my first race under the name of A. N. Other," says Jackie with a smile. "I thought that was a smart way of hiding my real name..."

Jimmy's accidents were enough. The Stewart family did not want their youngest fooling around with racing cars. When he went off on weekends, they thought he was busy shooting clay pigeons. But Jackie had got another bug by then, the car bug. And he was so good behind a steering wheel that Britain's greatest talent scout, Ken Tyrrell, ended up offering him a Formula 3 ride for the 1964 season. He could not keep his racing activities secret any longer and told the family. A few tears were shed, but Jackie was off for good — for one of the greatest racing careers of all time.

In his first Formula 3 season he won every race he took part in — with the exception of two where his car broke down. He did not have to bother about stepping up to Formula 2 from here: the following season, 1965, BRM made him a full-fledged Formula 1 pro — and it took him no more than 4 more years to clinch his first world championship.

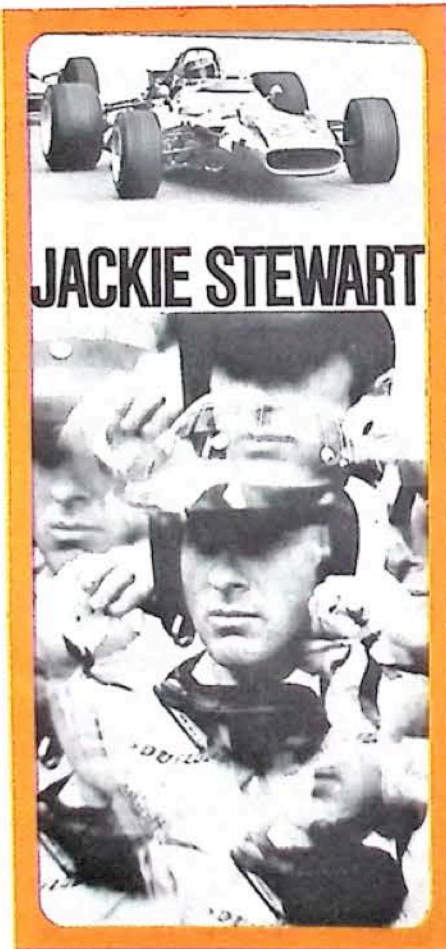
A few months before his death, Jimmy Clark told me that he could see no one but Jackie to eventually succeed him at the top of Formula 1 racing.

"He was kind," says Stewart, "very kind. So are all the people who are saying now that I equal Jimmy. This has not happened yet. I am 30 years old, but I still lack a lot of experience. I feel that I improve from season to season, practically from one race to the next. I can feel it physically. Some day, of course, there will be a better driver than Jim Clark, but this day has not yet come. Jimmy had it all: natural talent, mechanical ability and racing ex-

perience. I still have a lot to learn. The level of professional driving never was so high. There is Andretti, Rindt, Amon, Ickx... some day, someone in this group will probably go further than anyone has ever gone before. It could be me. It could be another fellow."

Whatever happens, Jackie feels he is only at the beginning of his career. He has no intention of retiring early.

"I would like to race for a long time. Most of all, I hope I will long keep my present enthusiasm, my love for driving a fast car. I would hate to have to retire. I would like to retire on my own, after losing interest suddenly so I could



retire without being sorry about it. That's what happened to me with clay shooting. One day, without any reason, I lost interest and gave it up. I never really felt like shooting again. I hope things will be the same for me with auto racing."

Which quality does he rate highest in a racing driver? Jackie thought for a long time before muttering this answer:

"I believe it is calm, relaxation. A relaxed attitude combined with some form of self-discipline. I don't mean to say that a racing driver should not smoke or drink. No. What I mean is that a man must know his limits — recognize them and stick to them. He should never try to go beyond. With time, of course, these limits will move back as the man improves. It's all right for an athlete to try to run a 4-minute mile if, say, he is worth 4 minutes and

5 seconds. But a racing driver must remember the dangers in going beyond his limit. If he does not recognize that, he is a fool.

"I have been asked whether a family man has a moral right to race. I know that, in a way, I am an egotist. But I do all I can to provide a safe future for Helen and the kids. Having a family I love helps me improve. And improving my driving also helps me be much more careful."

They say Jackie is a rich man now. He lives in a gorgeous home near Geneva, one of Switzerland's tax havens ("Once you have settled your tax problems there, it's Christmas every day!"). Driving for Matra, Dunlop, Ford, and Elf, he is cashing in on some of the fattest contracts in Europe. First among Formula 1 drivers, he picked New York lawyer McCormack (manager of such greats as Arnold Palmer, Jack Nicklaus, and Jean-Claude Killy) to handle his business affairs. Stewart shirts, helmets, and overalls are bound to pop up all over Europe now that the slight (5 ft. 6½ in., 148 lbs.) Scot has clinched the world championship. He already won't "give" an interview; McCormack sells them for him.

"This is a world of pros. If I were a bachelor, I wouldn't even think about the money. But a racing driver can die anytime. I have to provide my family with real financial security. This takes a lot of doing."

Helen, his wife, never misses a race. Observers have a tough time deciding whether Helen Stewart or Tina Rindt should be rated as Formula 1's most charming regular. Jackie met Helen McGregor, a Scottish breed like himself, when she was 16. Ever since his first Formula 1 race, she has timed every one of the thousands of laps he has driven around the tracks.

"At first," says Helen, "I was afraid. I did not really like racing. Progressively, though, I grew more confident. I don't shiver in the pits anymore now. I keep busy with the stopwatch and the note pad, and I enjoy the races."

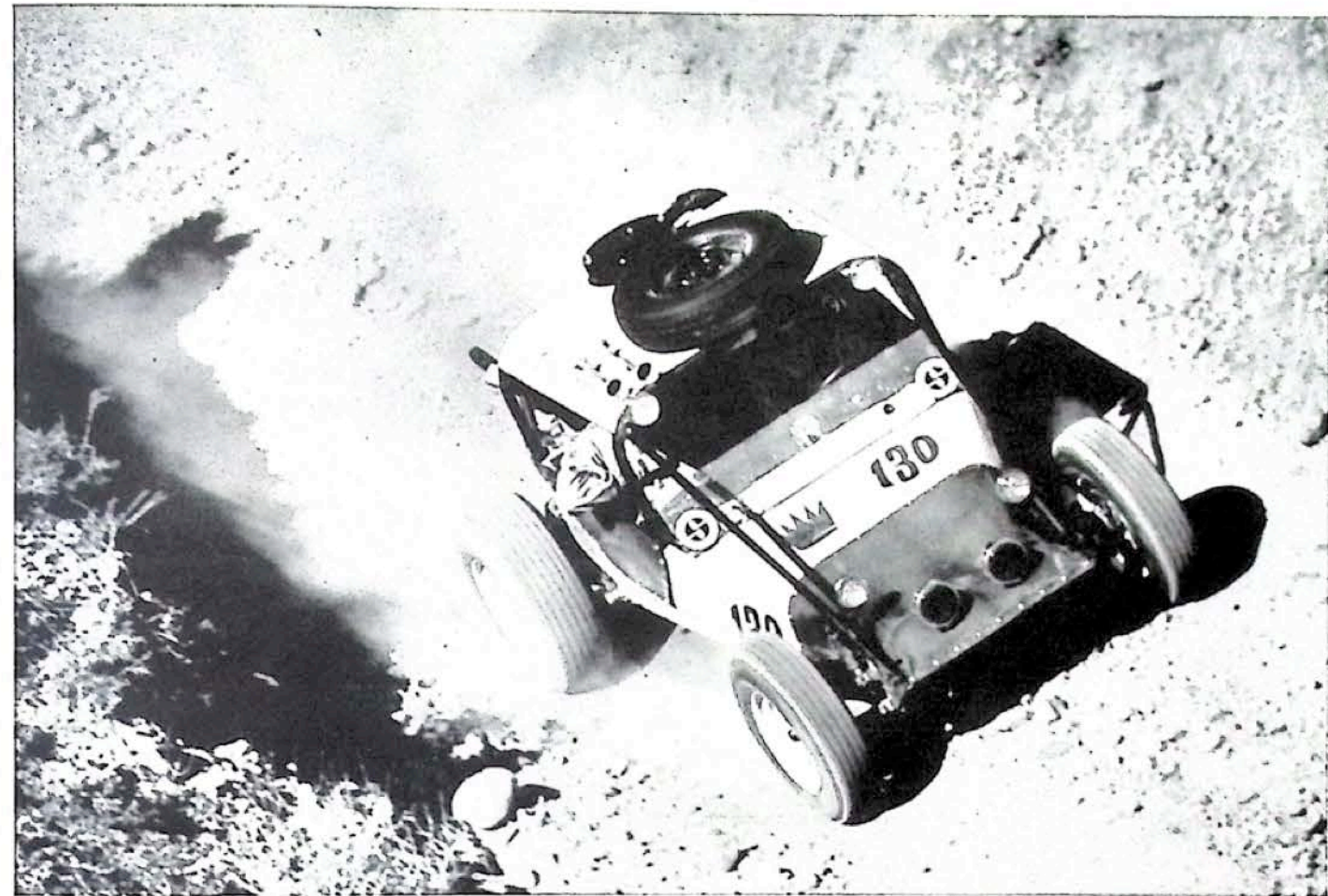
Does Jackie get nervous on race day?

"If he does, he certainly does not show it," says Helen. "But he has to get ready psychologically for the race to come. A few hours before the start, he begins concentrating. Generally, he stays in bed longer. He glances through some magazines, trying to relax. I cook his meals myself, wherever we are, and we have a quiet lunch in our hotel room. I know he needs peace and quiet then. I speak a little less, I let Jackie do the talking when he feels like it. By the time he starts putting on his racing suit, he is in a world of his own."

Does Helen find it different to be the wife of a famous racing driver?

"You know something? I did not even know he was famous until a few months ago. It struck me all of a sudden. Honestly, though, it has not changed anything in our lives. I guess we have a few more 'friends' than before. But the routine is the same. We were traveling racers even before."

/MT



AN ACTION ADVENTURE

# AC BEATS THE BAJA



"Driving the Baja has to be the world's toughest test of air and oil filters," says John Johnson, winner of the open experimental class in his "Crown Special" at the 1969 "Mexican 1000."

"In some places, the dust is 18 to 20 inches deep—so thick it can ruin an engine in less than 100 miles."

"But we had no problems. Our AC Air and Oil Filters kept the engine running clean all the way."

You may never drive the Baja, but the AC Air and Oil Filters John Johnson used to win the "Mexican 1000" are the same AC Filters that are original equipment on all GM cars. When changed regularly, they virtually eliminate engine wear caused by dirt and sludge.

Keep your engine running clean. Insist on AC Air and Oil Filters—the ones that beat the Baja.

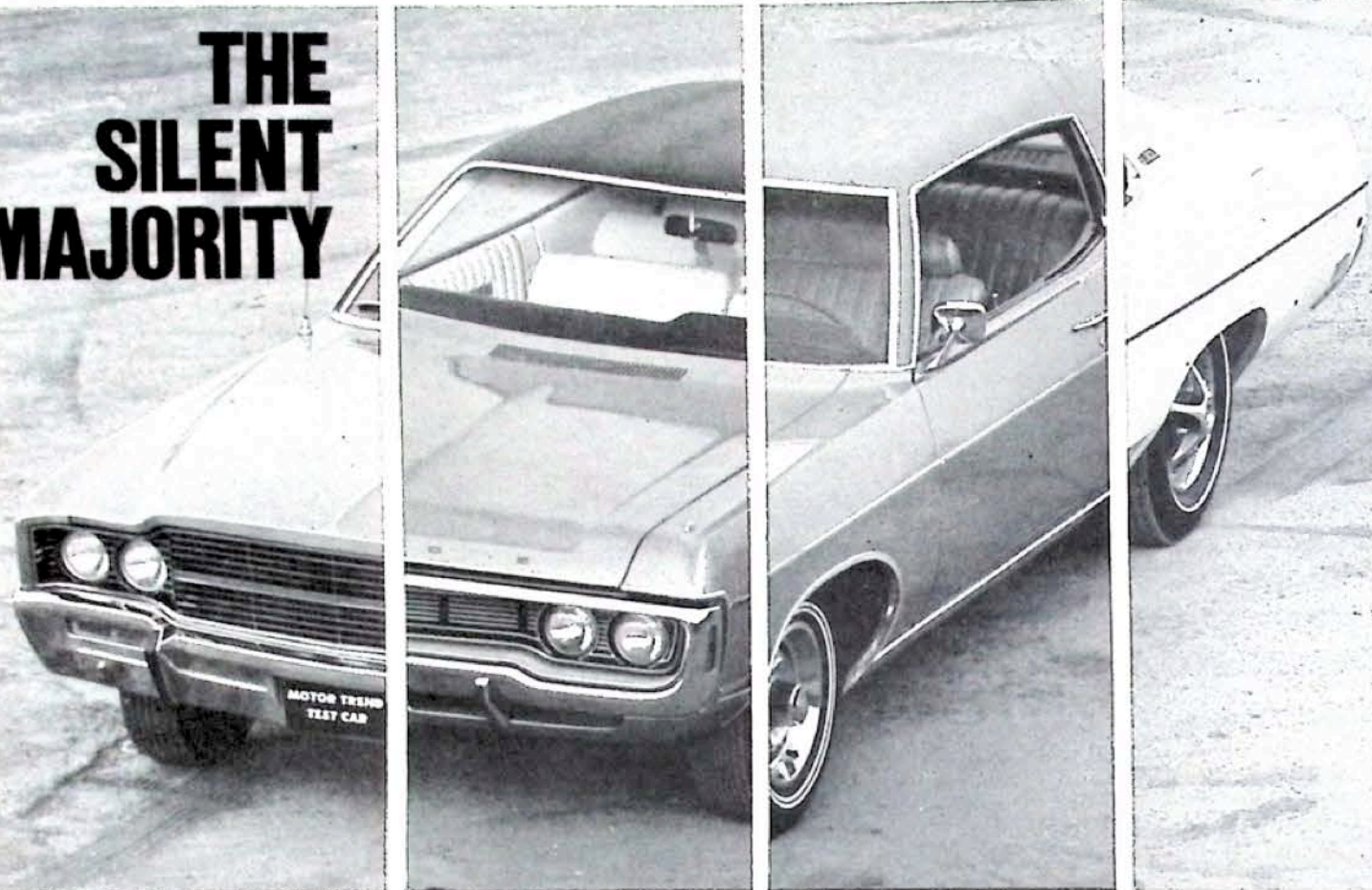
AC SPARK PLUG DIVISION OF GENERAL MOTORS



AC BUILDS MORE PARTS FOR MORE CARS THAN ANYONE ELSE IN THE WORLD—AC FIRE-RING SPARK PLUGS • AC OIL FILTERS • AC AIR FILTERS • AC GASOLINE FILTERS • AC PCV VALVES • AC RADIATOR CAPS • AC GAS CAPS • AC CRANK-CASE BREATHERS • AC FUEL PUMPS

MARK OF EXCELLENCE

# THE SILENT MAJORITY



Debased and scorned with relentless regularity, the family sedan fills its role with quiet humility. Where else can you get such value for about \$1 per pound?

BY BILL SANDERS

Man, I just took that car through the canyon and the handling is pretty sloppy." John Lamm, our managing editor, was talking about one of this month's four test cars. John wants an Alfa.

In the February issue of *Sports Car Graphic*, that Pixie Publisher, Mr. T.C. Browne, in his road test of the BMW 2800CS, indulges in a little dubiously sarcastic tongue wagging at *Motor Trend* regarding its Car of the Year award for a Detroit-type vehicle. Unfortunately for Mr. Browne, his poorly aimed darts weren't really tipped with curare, but rather a mild solution of boric acid, safe enough for a baby's eyes.

A haughty air of scorn and derision is an ambivalent syndrome many "purists" experience in their approach to Detroit products. Criticism flows easily enough from a pseudo-intellectual omnipotence in a hypocritical deluge, but comparing the handling of a Mack truck and a Mercedes 280 SL not only doesn't make sense, it's a waste of everybody's time. Except maybe the superior oafs with the inferiority complexes.

Now, the arrival of the point we want to make is close at hand. Detroit wheels don't have to perform an obsequious curtsy before the proud Marques of Europe. No defense is required. That *Wunder Kinder* from BMW is a fantastic automobile and may be car-of-the-

decade, but it also costs \$10,000, when you can get one, and would be a downer on an unpaved, muddy road in the middle of an Iowa cornfield.

The basic American Family car serves a specific need and usually serves it quite well. In fact, the guts of U.S. auto production is centered on "bread and butter" cars, the volume sales getters of the Chevy, Ford, Dodge and Plymouth genre. For our comparison road test this month we've selected four of these "bread and butter" cars, the AMC Ambassador, Chevrolet Impala, Dodge Polara and Ford XL.

These cars may not perform like Group 7 race cars, but then, that isn't their intent. About 99 percent of U.S. cars are sold in this country, where in the boondocks we have long, straight highways and freeways, and in town we have long, straight boulevards and avenues. Even in areas like Southern California where mountainous driving is a factor, if one obeys the law and drives within the speed limit, these "mushy" American cars perform with the utmost competence. A baby carriage ride? Maybe. Power steering and power brakes? Maybe. But what constitutes the type of driving these cars encounter most often? American cars and their suspensions have evolved along with American roads. They're compatible. And that ain't all that bad. Some people may think this

story sounds like a commercial for the Valley Forge Freedom Foundation or the D.A.R., but we're not saying any of these cars represents total perfection in its role. Both the mighty Mercedes 600 and Rolls Royce have their drawbacks. Even with some qualms about space utilization or quality control, there need be no condescension on the part of our four test cars. And, who says family sedans must look like concrete blocks? That era has long since passed and each of our four test cars has a proud stance of smoothly flowing, aesthetic lines.

Family sedans, U.S. style, also presumably suffer in the posterior regions when performance is at stake. But, like our cars and roads, that sport known as drag racing is an American phenomenon, and if you go to a drag strip on grudge night you won't find many BMWs, OSCAs, Lotuses, Pegasos, Lamborghinis, or old birdcage Maseratis out there. Again, purists may scoff at these base individuals who indulge in such androidal exercises, have grease under their nails, and talk incessantly about "cubes." Consider though, while a Porsche Super 90 or an MG TC may appreciate in value as the years go by, so does a Chevy, circa '55 or '56. That's not bad for a poor ol' family sedan.

## RIDE AND COMFORT

Basically, there isn't too much disparity between all four cars when it

comes to ride quality. The Ford XL seemed to be the most softly sprung and gave a slightly "mushy" feeling. The feeling didn't prove out when driving at speed on the freeway though, as there was never any tendency to float. Only a slight wallowing occurred in dips when taken too fast. Then the common complaint of the "baby carriage" type bounce was noticeable. Although the XL is actually shorter than the Impala, and about the same width, it gives the psychological impression of being overly massive and ponderous. Ford's fastback design for the XL creates a large blind spot at the right rear section of the greenhouse, making it difficult to see easily when changing lanes. Also, when it's raining, or drizzling, and the windshield is dirty, except for the area covered by the wipers, there is a section of windshield on the left that isn't touched by the left wiper. This section of glass, combined with the windshield pillar, creates an annoying, rather large semi-blind spot for the driver.

Dodge's Polara has a typical torsion bar suspension ride: it's comfortable, though firm. Freeway driving is flat and there is never any float or bounce. Again, like the Ford, the Polara gives a feeling of being a ponderously large car. It is the longest overall at 219.9 inches, but is actually narrower than both the

XL and Impala. Seats in the Polara are considerably lower than in any of the other cars, which accounts for part of the feeling. It's interesting to note that the Polara and Ambassador both have the same wheelbase at 122 inches, yet the Polara is the longest and the Ambassador is the shortest overall at 208 inches.

Ride qualities follow the same pattern in the Ambassador; comfortable, but with a firm road bite transmitted through the car for a feeling of solidity. It's close to the Polara, yet not as softly plush as the XL. Being the shortest and narrowest, plus having seats that sit up rather high, the Ambassador feels compact and has excellent visibility.

If the XL had a slight mushy feel, our test Impala was a complete opposite. It came equipped with a special handling package suspension that costs a mere \$16.90 extra. Although it gave the Impala a most impressive firm, solid road feel, ride qualities weren't hampered; in fact, they were enhanced because comfort remained superlative. Impala seats are at an optimum height, combining excellent visibility with relaxing comfort, so you maintain full control easily without the subconscious effort of concentrating on control.

Front seat legroom in the XL is good and the same is true in the rear. All

four cars were two-door models. Our XL had individual, high-back bucket seats with a center console and shifter. Seats were slightly uncomfortable, because the seat backs were at too vertical an angle and seemed to be pushing driver and passenger forward. The same seats in the Mach I seem to have more rake and are far superior. The XL seats had the same problem as the 1969 Cougar we tested.

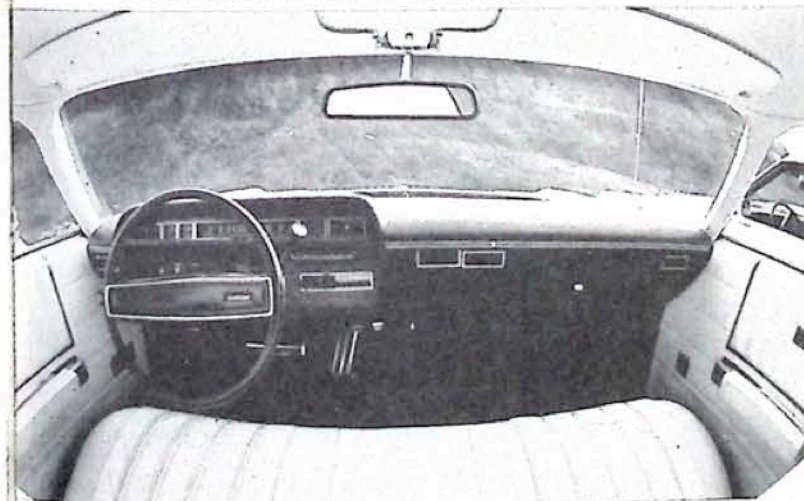
Polara front seats are comfortable, but sit rather low, as mentioned. Front seat legroom is good, but rear seat knee-room is disappointing, considering this is the longest of the four cars. Rear seats are also good on the comfort scale.

Seating comfort is one of the best factors going for the Ambassador. Individually reclining seat backs are standard and are great for snoozing on trips or adjusting the driver's seat back for a more comfortable driving position. We still can't understand why other U.S. manufacturers don't go this route as have so many European auto companies. While Ambassador front seats are of the lounge type, they are matched so evenly that they work quite well as a straight bench seat when a third passenger must ride in the middle. The Ambassador has the most luxurious carpeting of all cars, also. Rear seat

*continued*

Family sedan dashboards have changed considerably in the last couple of years: the dictates of safety. What used to be a compendium of gadgets and gimmicks is now a vast, smooth area of padded plastic in front of the passenger. The Polara (top left) is

rounded and neat. The Ford XL (bottom left) shows the trend toward curved, cockpit-type instrument clusters. Chevy (top right), like Dodge, has taken the simple route. Only the Ambassador dash (bottom right) harks back to the past using a little cluttered, yet efficient, layout.





### Comparing the Ford XL, AMC Ambassador, Chevrolet Impala, and Dodge Polara.

legroom is also good for a two-door, but the safety seat latch is difficult to operate and it is a little more difficult to get out of the rear seat of the Ambassador.

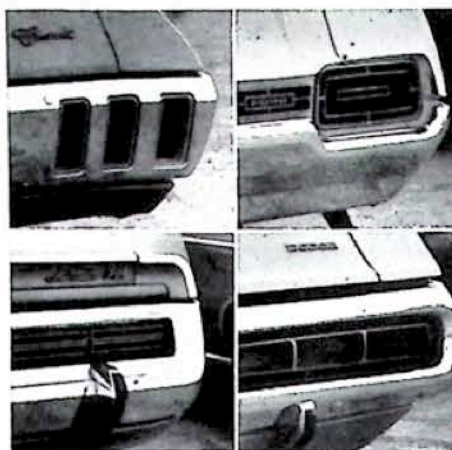
Our test Impala had tan vinyl upholstery that is about as close to simulating real leather as you can get. The Chevy seats are quite comfortable and, as with the Ambassador, are quite softly padded. Head restraints are also the most softly padded in the Impala. Door armrests are by far the most comfortable, especially on a long trip, and inside door handles are the easiest to operate. Rear seat legroom is probably the worst thing about the Impala. It is most inadequate and your knees have no place to go. Otherwise, rear seats are comfortable with plenty of headroom.

#### CONVENIENCE

The XL has a curved, cockpit-type dash in front of the driver. It looks good, but makes reaching controls difficult. Radio controls are left of the steering column and unreachable by the passenger. The driver must reach around or through the steering wheel. The light switch seems to be too low on the dash so you must fumble to find it. With tilt steering wheel, which our car had, it is difficult to see the speedometer, although the fuel gauge — the only gauge — is in the exact center of the dash at eye level and can be seen better than the speedometer. The cigarette lighter and heater/air fan switch are on the right side of the dash so you have the same problem with them as with the radio controls. Because of the XL curved dash arrangement, designers were forced to put the ashtray in an inconvenient location. With a center console there should also be a console ashtray. The glove box seems too small and is hidden under the dash. Although it interferes with the speedometer, the tilt steering wheel is a good accessory and aids in easier driving. Ford still has the best idea when it comes to cruise control. The activating buttons are located in the steering wheel cross bar and we've found that's the most convenient location, rather than on the dash or turn signal lever.

A smooth, functional dash gives you an easy feeling in the Polara. It has fuel, alternator, and temperature gauges with the custom model. The speedometer is easy to see and read. Lights, wipers, and rear window defogger switches are easy to reach and operate. The vent opening lever and, surprisingly, the electric clock reset are way down under the dash. Both the radio and the heater/air controls are on the right side of the steering column and can be reached by both driver and passengers. The Chrysler push button heater/air controls are the easiest to use and operate of all four cars. Our test car had white vinyl upholstery and it tended to get quite dirty in a hurry.

Another big feature of the Ambassador is the air conditioning which is a standard item on this model. That



<b>Ambassador 2-door hardtop</b>	
Base price	\$3,739.00
360-cubic-inch engine, 2-BBL	41.45
Shift-command column shift	22.20
Vinyl top	105.50
Individual cushion vinyl trim	31.75
Whitewall tires	50.50
Power steering	105.30
Power disc brakes	84.20
Tinted glass	42.15
Tilt steering wheel	45.30
Visibility group	28.50
AM radio	61.60
Evaporative emission control	37.00
Handling package	23.25
<b>Dodge Polara Custom 2-door hardtop</b>	
Base price	\$3,458.00
Light group	42.00
Power brakes	42.95
Automatic transmission	223.20
383-cubic-inch engine, 2-BBL	69.70
Tinted glass	42.95
Remote control left door mirror	10.45
Rear window defogger	26.25
Air conditioning	395.95
Electric clock	16.50
Cornering light	36.05
Automatic speed control	60.85
Evaporative emission control	37.85
Power windows	109.15
Power door locks	45.00
AM radio	28.95
Power steering	112.00
Rim blow steering wheel	19.30
Vinyl roof	110.05
Deep dish wheel covers	51.85
<b>Ford XL 2-door hardtop</b>	
Base price	\$3,514.50
390-cubic-inch engine, 2-BBL	86.00
High back bucket seats/console	188.00
Evaporative emission control	38.73
Automatic transmission	201.00
Traction-lok differential	43.00
Electric clock	16.00
Visibility group	32.00
Whitewall tires	66.00
Rocker panel molding	16.00
Body side molding	26.00
Automatic seat back release	26.00
Power side windows	110.00
Power steering	105.00
Power front disc brakes	65.00
Tilt steering wheel	45.00
Speed control	79.00
Electric defrost rear window	53.00
Air conditioning	389.00
AM/FM Stereo radio	240.00
Dual rear speakers	26.00
Tinted glass	45.00
Racing mirrors	13.00
Power door locks	45.00
Cruise control	89.00
<b>Impala Custom Coupe</b>	
Base price	\$3,266.00
Vinyl interior	12.65
Tinted glass	42.15
Power windows	105.35
Vinyl roof	105.35
Air conditioning	384.45
Remote control rear view mirror	10.55
Special front & rear suspension	16.90
350-cubic-inch engine, 4-BBL	47.40
Automatic transmission	200.65
Evaporative emission control	36.90
Power steering	105.35
Whitewall tires	30.20
Electric clock	15.80
AM radio	61.10
Trailering axle ratio	10.55
Rally wheels	35.85

can add a big saving to the total price of your car. The dash, in total, isn't as good as the other cars, but it has excellent instrument placement, with two big, round dials. The speedometer has the best calibration and you get a fuel and temperature gauge. The glove box is large and well-placed. Again, a tilt steering column is a good option, especially with an adjustable seat back. A face-height air conditioning vent, which none of the other cars had, is great.

The Ambassador still has front vent windows, which, combined with floor vents, provides excellent ventilation, even without the air conditioner. With the vent windows, the door glass stays tight, although we noticed considerable wind and road noise in the car at highway speeds.

A clean, non-gimmicky dash is part of the Impala decor and adds to great driving pleasure. The speedometer is easy to see and read, but like the XL you only get a fuel gauge. All controls are easy to reach and operate. The heater/air controls are on the left of the steering column and can't be reached by the passenger. Horn buttons are located in the steering wheel cross bar and in an excellent location for fast thumb use. Power window buttons are the easiest to use in the Impala as they are similar to toggle switches. That's convenient when the buttons are located flush on the door panel. The glove box is easy to reach into, but small, and closing the heavy door shakes the dash.

#### HANDLING AND STEERING

Although all cars stay relatively flat in normal cornering, there is a considerable difference in handling. The XL goes through corners quite flat, with only a little lean or roll. There is some wheel hop noticeable and it is somewhat annoying. It also occurs during hard braking. Steering is fast and responsive, but with 3.9 wheel turns lock-to-lock it has the most play. Only a slight road feel comes through the power steering. Ford power steering usually has a more solid feeling.

The Polara corners flat, also a characteristic of torsion bar suspensions, but isn't as stable as the Chrysler Newport we tested in the February issue of *Motor Trend*. There is no roll in turns, but it gets somewhat squirrely when pushed. It has a definite oversteer and the rear end breaks loose quickly. In mountainous driving we found that it handled noticeably better in second than in drive, with no appreciable strain. Power steering still had a somewhat loose feeling, even with the hefty new steering wheel. It needed too many corrections and on the freeway we had a tendency to overcorrect which caused an occasional, dangerous swing out of the line of travel.

Understeer accompanied by considerable lateral motion and side force on the occupants was significant of the Ambassador in tight corners of mountainous driving. *continued on page 112*



SPECIFICATIONS	FORD XL	DODGE POLARA	CHEVROLET IMPALA	AMC AMBASSADOR
Engine	90° OHV V8	90° OHV V8	90° OHV V8	90° OHV V8
Bore & Stroke — ins.	4.05 x 3.78	4.25 x 3.38	4.00 x 3.48	4.08 x 3.44
Displacement — cu. in.	390	383	350	360
HP @ rpm	265 @ 4400	290 @ 4400	300 @ 4800	245 @ 4400
Torque: lbs.-ft. @ rpm	390 @ 2600	390 @ 2800	380 @ 3200	365 @ 2400
Compression Ratio	9.5:1	8.7:1	10.25:1	9.0:1
Carburetion	1 2-BBL	1 2-BBL	1 4-BBL	1 2-BBL
Transmission	Automatic	Automatic	Automatic	Automatic
Final Drive Ratio	2.75:1	2.76:1	3.31:1	3.15:1
Steering Type	Power	Power	Variable-ratio Power	Variable-ratio Power
Steering Ratio	17:1	15.7:1	16:1 to 12.4:1	16:1 to 12.2:1
Turning Diameter -ft.	41.9	43.5	42.5	40.5
Wheel Turns (lock-to-lock)	3.9	3.5	2.7	3.2
Tire Size	H70x15	H78x15	G78x15	G78x14
Brakes	Power: Disc front, drum rear	Power: Disc front, drum rear	Power: Disc front, drum rear	Power: Disc front, drum rear
Front Suspension	Independent, coil springs, ball joints	Independent, control arms with torsion bars	Independent, coil springs	Independent, direct acting coil springs
Rear Suspension	Coil springs, control arms and lateral track bar	Semielliptic, longitudinal leaf springs	Trailing link coil springs	4 link trailing arms with coil springs
Body/Frame Construction	Separate body/frame	Unit	Separate body/frame	Single unit
Wheelbase — ins.	121.0	122.0	119.0	122.0
Overall Length — ins.	213.9	219.9	216.0	208.0
Width — ins.	79.7	79.3	79.8	77.2
Height — ins.	55.5	54.4	54.3	54.6
Front Track — ins.	63.0	62.1	63.4	60.0
Rear Track — ins.	64.0	63.4	63.3	60.0
Curb Weight — lbs.	3046	3950	3930	3750
Fuel Capacity — gals.	24.5 (23.5 Calif.)	24.0	25 (23 Calif.)	21.5
Oil Capacity — qts.	4	4	4	4
PERFORMANCE	FORD XL	DODGE POLARA	CHEVROLET IMPALA	AMC AMBASSADOR
Acceleration				
0-30 mph	4.3 secs.	4.1 secs.	3.4 secs.	3.3 secs.
0-45 mph	7.5 secs.	7.0 secs.	5.9 secs.	6.1 secs.
0-60 mph	12.0 secs.	11.5 secs.	9.5 secs.	9.5 secs.
0-75 mph	17.5 secs.	17.4 secs.	14.5 secs.	15.0 secs.
Standing Start ¼-Mile MPH	77.2	77.5	81.0	81.6
Elapsed Time	19.1 secs.	17.9 secs.	16.1 secs.	16.9 secs.
Passing Speeds				
40-60 mph	6.4 secs.	6.6 secs.	4.7 secs.	4.1 secs.
50-70 mph	8.2 secs.	6.9 secs.	5.7 secs.	5.9 secs.
Speeds in Gears*				
1st ... mph @ rpm	65 @ 4400	53 @ 4400	56 @ 4500	45 @ 4400
2nd ... mph @ rpm	87 @ 3500	87 @ 4400	89 @ 4500	74 @ 4500
3rd ... mph @ rpm	82 @ 3000	81 @ 3000	80 @ 3000	53 @ 3000
4th ... mph @ rpm				
MPH Per 1000 rpm (in top gear)	27.3	27.0	26.6	24.5
Stopping Distances				
From 30 mph	31 ft.	32.4 ft.	32 ft.	31.9 ft.
From 60 mph	127 ft.	156.6 ft.	130.9 ft.	151.8 ft.
Gas Mileage Range	11.6 to 14.8 mpg	13.0 to 17.9 mpg	15.1 to 18.5 mpg	13.7 to 15.6 mpg
Speedometer Error				
Electric Speedometer	30 45 50 60 70 80	30 45 50 60 70 80	30 45 50 60 70 80	30 45 50 60 70 80
Car Speedometer	31 46 51 61 70 81	30 45 50 59 69 80	38 56 62 72 84 94	30 44 49 57 67 77

\*Speeds in gears are at shift points (limited by the length of track) and do not represent maximum speeds.

COLLEGE STATION, Texas — "Now I'm beginning to get the idea," said Cale Yarborough, a sly grin breaking across his face as he studied the back of my blue shirt, which carried the Holman-Moody Ford No. 17 emblem. "The rest of us ought to be paying you today. Pearson, for once, is a sure loser."

Any misgivings I already had were doubled as he spoke, even though it was in jest. Here I was giving up a typewriter for a blue, gold, and white uniform, ready to serve — for the first and last time — on a pit crew for a NASCAR Grand National stock car race. The date was Dec. 7, 1969, the race the inaugural Texas 500 at the new Texas International Speedway.

Yarborough was right, I suppose, or at least he would have been had I been allowed to do anything really crucial to victory or defeat for Grand National champion David Pearson. Yet there must have been something to that thought, for on

this chilly, windy afternoon in the Lone Star State, Pearson failed to finish a super speedway race for the first time all season. You can imagine what that memory does to my ego.

The idea was, on the surface at least, a good one. I was to become a crew member for a day and put down on paper all my experiences of assisting a race car to victory. It didn't quite turn out that way. Instead of getting in on the dirty glory of changing tires or pouring gasoline or putting in wedge, I spent my afternoon taking care of some less demanding, much less glamorous chores. Breaking in with the polished Holman-Moody outfit, I discovered, was about as easy as driving the car itself.

The day had begun on a sour note. Race day for a pit crew starts early and ends late, so Holman-Moody team supervisor Dick Hutcherson told me to report for work at 7 a.m. I promptly blew that



one, not awakening until that hour.

It was 7:40 when I arrived in the spacious garage area. The rains of the day before had blown away and it was clear and cold. Very cold. I went straight to the stall occupied by Pearson's blue and gold Torino and, fortunately, Hutcherson was not there to see how late I was. I was eager to get my first taste of the routine but had to ask the other crewmen for something to do. They were a little reluctant to let me try very much.

My first assignment had me cleaning dust from the body of the car, going over it first with a wet cloth and then with a dry one. Normal procedure for most teams call for the car to be polished on race morning but because of the rain and the inactivity on Saturday, that had been done a day early. As I scrubbed, the other crewmen busied themselves with the detail work that precedes the appearance of the car on the starting line.

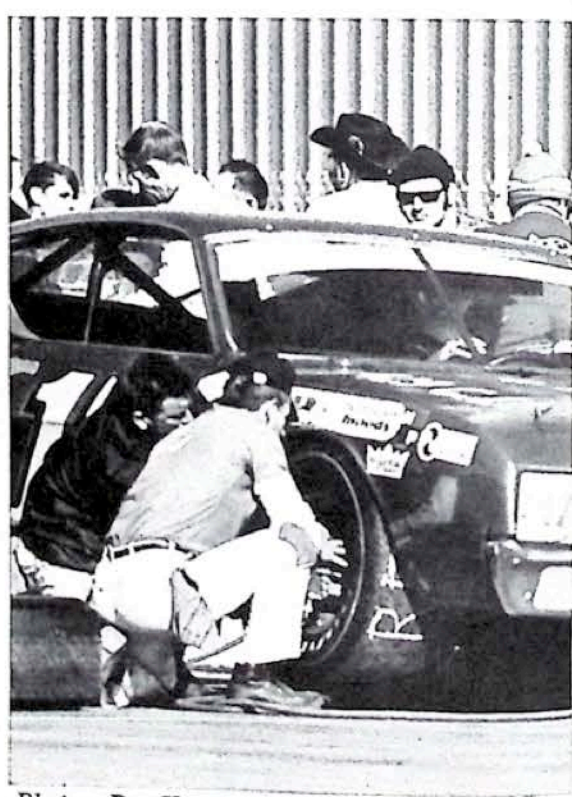
row beside Buddy Baker's pole-winning Dodge Charger Daytona, a period of relative inactivity came for the crew. There were a few minor details left to be done, like stretching a rope around the pit area to keep the curious spectators out of the way.

Race time arrived and my nerves were shot. I still didn't know what I was going to do. "Don't worry about it," said Hutch, pretending he wasn't. "We'll think of something." Moments later he did. "You can handle the chalk and the pit board, and when he stops you can pass him something to drink, milk one stop and water the next. When he comes in, throw that board to the back of the pits so we'll have room to move around up here next to the wall." I checked the bag of ice to make sure there was enough milk cooling. I was to handle this from behind the wall, using a long metal rod with a spring on the end to hold the

After that initial pit stop I began handling the pit board, flashing Pearson messages of lap times, position in the field, etc. Our pit was located about halfway down the front straightaway, near the start-finish line, and the board had to be up as the car came into view in the fourth turn. Finding the car in the sun on some laps became a problem, but for the most part it was an easy job.

As the race wore on, tire problems increased all around us. "We've been lucky so far," says Hutch. "But from now on, to be safe, we'll change three tires on the green and all four under the caution. That's for every pit stop." The way he said it you knew he wanted there to be no slippups.

Fate, however, was to catch up with us. Pearson was running well, exchanging the lead with Baker's Dodge on several occasions. But his tires began wearing badly also. "It's the weather," said Hutch.



Photos: Don Hunter



cup, since only five men can go over to service the car.

As the 38 brightly colored cars rumbled through the pace laps an air of tension settled over the pits. You could physically feel it for the first time. All the preparation was done, and you knew it had better have been done properly, for we were now past the point of no return. Most crewmen tried to relax with cigarettes as they watched the start. Hutch fidgeted about on his crutches, having been thrown from a horse and breaking a leg a couple of weeks before.

Things went smoothly at first. Others began pitting with alarming frequency because of tire problems, but Pearson rode on consistently. Then, on lap 39, his first scheduled pit stop. Every man knew his assignment. Over the wall went five men, one jack, two tires, two air wrenches, and one gas can. I raced around in back, spilling half of Pearson's milk as I tried to fit the cup into the spring on that rod. By the time I got it to him he had little time to drink it, for the gear linkage was hanging up and he couldn't find first. After one swallow he threw the cup back, splattering Hutcherson. He slowly chugged away in second gear, getting a push from the crew.

With the car back underway calm returns. You realize first that you had forgotten all about that cold wind that chilled you earlier. You then think about the patterned confusion of the moments before, with men rolling about in different directions like waves on a stormy ocean. Somehow the job got done, done in less than 30 seconds.

"The cold plus this green race track is rough on the tires." David pitted again on lap 104, and both right side tires and the left rear were changed. "They're torn all to shreds," muttered Hutch, looking angrily at the ripped hulks of rubber just removed from the car. For the first time an air of pessimism seemed to seep into the pit. Few words were spoken, though there was still plenty of hope with Pearson running second.

This was not to be the day each crew member had envisioned, however. Pearson was to make only one more pit stop, his fourth and last. That trouble with his transmission linkage had forced him to put undue pressure on the clutch, and it finally gave way as he tried to leave the pits on lap 142, just past the halfway point of the 250-lap race. Gloom set in. Curses were muttered. Finally, with the crippled car back in the garage area, we began dismantling the equipment and loading it on the truck. There was to be no ride on the hood of the car into victory lane on this day.

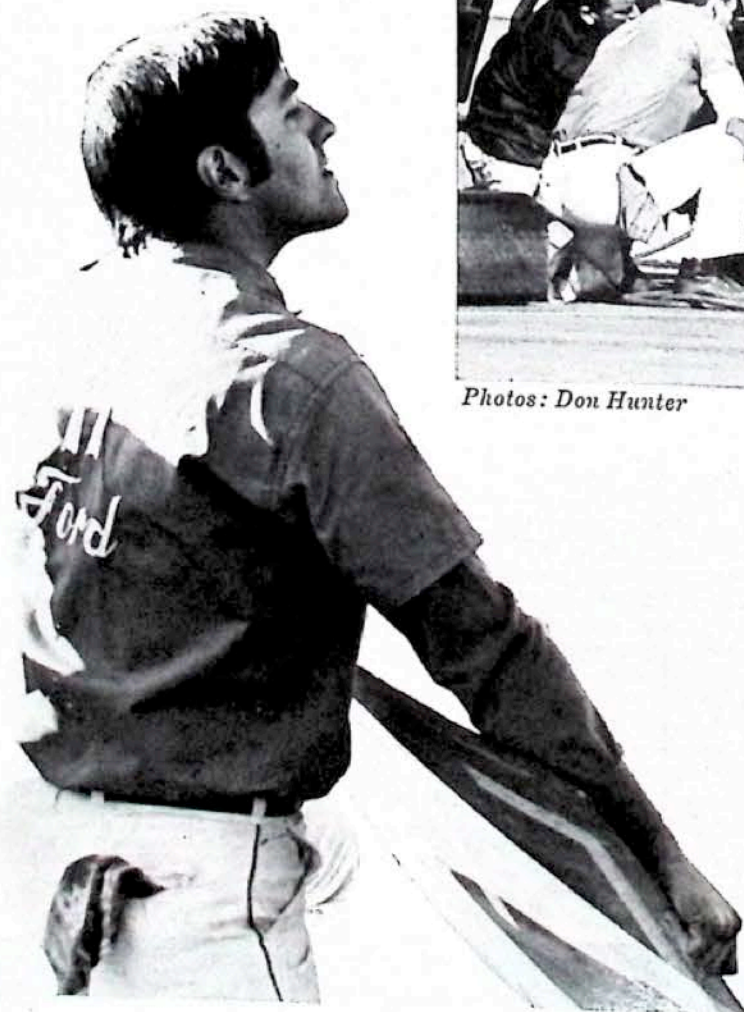
The final stages of the race roared on all around us. We hardly noticed at first, though, as Baker crashed and Bobby Isaac went on to win. I was dirty but I didn't feel I had done enough to get that way. I was tired but I didn't really know why. Then it hit me. I was mentally exhausted. Living for hours with the knowledge that one error would make you and 10 others losers is not easy.

Like most untried things, this had appeared easier from the outside looking in. But it is a battle of nerves as well as wrenches, and no place for the novice. /MT

## A QUIET, CALM SUNDAY AFTERNOON

Motor Trend's NASCAR reporter, Leonard Laye, spends an afternoon on David Pearson's pit crew.

BY LEONARD LAYE



It all seems so familiar, somehow. Like walking into a place you've never been that you know. A twentieth century version of Rip Van Winkle, only compressed to just a decade.

Remember 1960? The debates; narrow ties; Route 66; Bob Newhart; Cuba si, yankee, no; Y.A. Tiddle; the Mets; and compact cars. Compacts to fit a tight-ened economy. Compacts to drive the foreign invader into the sea. Compacts to save us from the woolly-mammoth philosophy of car manufacturing.

What were they now? Falcon, Valiant, Comet, Corvair. Corvair? Yes, and Lark and the Rambler. George Romney had rallied the troops at the gates of Kenosha — seen the light — and American Motors, which the public could hardly forget was Nash, beat the entire industry to the compact draw.

We were saved. The foreign babble on our docks subsided to a murmur, the buck loosened up; bigger, luxury compacts were on the way. We even went to compact races — the granddaddy of Trans-Am at Continental Divide Raceway where a Rambler ran the wheels off a Corvair and Falcon while its pit crew played cards because there was nothing else to do. What would AM have given to have been so lucky last Trans-Am season?

What's happening in 1970? More debates; wide ties; Bronson; Bill Cosby;



## 1970 GREMLIN

It's small and cute and one day some drag racer will probably put a Hemi in it and run it backwards.

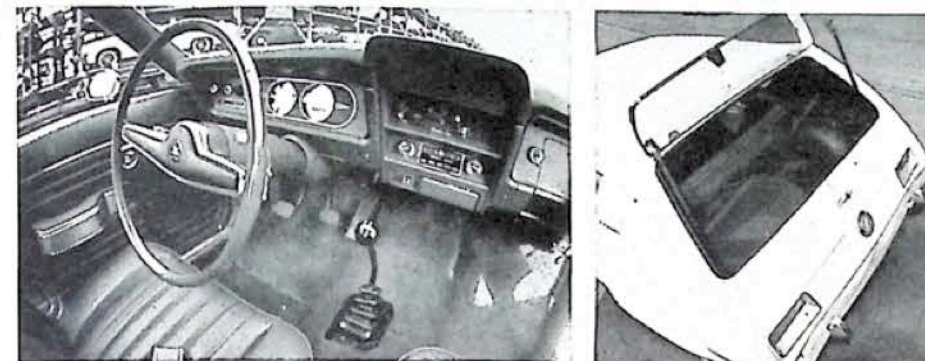
BY ERIC DAHLQUIST

being hijacked to Cuba; Roman Gabriel; the Mets; and compact cars. Compacts to . . . well, it all happened 10 years ago, right? Not exactly, no. In those sweet days of our youth, only Volkswagen possessed any kind of dealer/parts network. When the strong wind from Detroit commenced, all the Renault agencies behind gas stations, Simca, Morris, Vauxhall, Peugeot folded up and stole silently away into the night — and regrouped. Now they walk in the sun as the new Europe and Japan, fat and sassy — they will not blow away like the tumble-weed again.

In the larger sense, the mood of the country is different, too, almost totally dissimilar from a decade ago. Pollution, explosive population, urban decay, inflation, war — somehow the familiar, ponderous, tinselled automobile is no

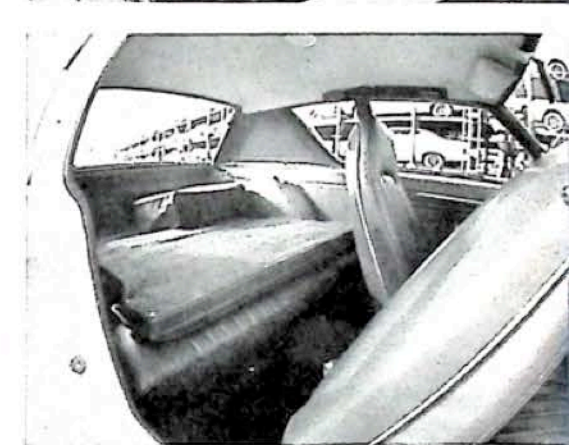
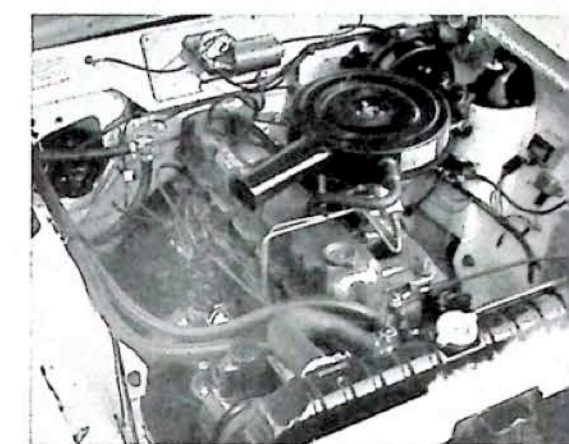


The one word that keeps coming up when you mention the Gremlin is cute; cute in a sort of campy, avant-garde sense. American Motors felt that if they were going to do the car at all, it should be plenty obvious in traffic.



Now then, after all these years, someone finally brings out a commuter car — the AMC Gremlin. Barring some catastrophe, they'll be bringing in trainloads like the Hornets (left).

Appearances to the contrary, the Gremlin (above) is only a measly three inches longer than a VW bug. Interior is roomy, too (top), and there's that floor stick. Rear window lifts.



Load volume (above) escalates sharply when rear seatback is lowered. Big cubic inch six (top) is one of the very same AMC torque factories that can go almost 80,000 miles easily.

longer relevant, except as a curio of a past we can hardly remember. We seem to have looked into the abyss of capitalistic excess — asked what it really got us except the brink of destroying the nation — and began to turn back toward functionalism.

Deep in their hearts, there is a real question whether Detroit actually believes these things. Almost from the beginning they found the import an inferior creation with a fringe minority mystique that no right-thinking American should buy. With grudging acquiescence, the attitude now has shifted to the point where there is finally a general consensus that the low-priced foreign car is inexpensive rather than cheap — a small, but vital point. Motown's first trial ballot to blunt VW, Maverick, has been a greater sales success than Mustang, though not at the Beetle's expense. Four months later comes Hornet, a machine that did not have a long, "sporty" Maverick hood, but little overhang, more interior space, and the frustration of a 3-month strike to dilute its impact.

In some ways the Hornet and Maverick are reincarnations of the 1960 compact blitz, only not fighting the foreigners as much as the fat size and price-tags of our own industry. The import pot-shooter is the Gremlin, an American Motors car that is not just a shrunken version of the standard Detroit space-waster, but something very

near a true metropolitan commuter car. At the very least, it is a head-on confrontation with Volks.

After Maverick's announcement, Stuart Perkins, Volkswagen of America's president, was prompted to say he had expected more than a shaved-down Falcon and didn't think it could do much less than help VW sales. He will think twice about Gremlin and a cursory comparison shows why.

	Gremlin	VW 1500	Maverick
Wheel-base	96 ins.	94.5 ins.	103 ins.
Tread-			
Front	57.2 ins.	51.6 ins.	55.0 ins.
Rear	56.6 ins.	53.1 ins.	54.5 ins.
Height-			
Overall	51.8 ins.	59.1 ins.	52.3 ins.
Length-			
Overall	161.2 ins.	158.6 ins.	181.1 ins.
Width-			
Overall	70.6 ins.	61 ins.	70.1 ins.
Curb			
Weight	2600 lbs.	1807 lbs.	2501 lbs.
Turning			
Radius	32'8"	36'	35'6"
Luggage			
Capacity	6 cu. ft.	7.3 cu. ft.	11.3 cu. ft.
Price	\$1850 (est.)	\$1880	\$1995

Now then, boys, kindly note that for the first time we really do have a VW-sized car — the Gremlin is only a miniscule 3 inches longer overall. But, a gigantic 8 inches lower. Like the man said, "the difference between the Hind-

enberg and a GT-40." Of course with such a dimension, you lose that top-hat capacity — the ballroom ceiling effect.

The Gremlin has obviously sprung from the Hornet's body and yet the 12 inches relieved by stylist Dick Teague is so striking in effect that the Hornet baseline keeps slipping away. From the near-verticle, flat back, you almost expect to find a transverse front-wheel-drive layout under the hood because every other foreign car that looks like this seems to have one. Teague somehow convinced AMC brass that the only way they would have any chance in the mini-sweepstakes was to gamble on a look so unique as to render GM and Ford's conventional cars mediocre before they even got off the ground. They have done it in spades. Most significant, the Gremlin gives the illusion of being larger; larger than a Maverick when it is, in fact, 20 inches shorter!

Sitting inside, it's the same deal. The car has to be at least as big as a Nova and you get the same sort of feeling that you do about a Beetle — everything is well put together, and the upholstery is substantial. Even the rear seat folds flat in a most Volkswagen-like, utilitarian fashion. There is no trunk *per se*, the luggage space is accessible through an upward swinging tempered-glass rear window. It approaches the current European five-door concept, though the effect is diluted by not being a full door.

continued on page 106

# 1970 GREMLIN



**Perhaps for the first time an American auto manufacturer has the right styling, size, and price to stop VW and the other imports cold in their tracks. Motor Trend spent a couple of hours with AMC Chief Stylist Dick Teague to get some background and insight into why they did what they did.**

**MT:** I assume from the kind of similarity between the Hornet and the Gremlin that they share some of the same sheet metal.

**Teague:** Yes.

**MT:** Does this mean then that the V8 will fit in there or not?

**Teague:** Yes, the V8 will fit. It's a fairly lightweight car and, well, we've got the V8 in the Hornet, and sure it would fit.

**MT:** Are there any plans for a V8 option?

**Teague:** They're not going into production in the foreseeable future. But it will go in and, of course, the dealers may be doing that. But the engine compartment will be exactly the same. There might be somewhat of a problem because of the short rear parallel springs with the wheel-hop, and things of that type. So it might take some tuning in order to make it work if you were going to do it on a back-alley basis, or even a production basis.

**MT:** Now, does it use all the same Hornet suspension pieces?

**Teague:** The major component pieces, yes: the differential, transmission, engine, and front suspension.

**MT:** Why didn't you make that fold-out back window a full door?

**Teague:** A full gate? Well, several reasons. Not the least of which is the fact that we felt that being about within 1½-inch of a Pontiac trunk liftover was enough. It also gives us a much more rugged little car. As a matter of fact, I was talking to the guys that are putting them together, and they say it's the most rugged car we've ever built. The thing is like an integrated, welded up

steel box. Of course, if we had a tailgate across there, I mean where the gas tank filler is and the taillights are located, and that cross structure below the bumper section, it would be a weaker car. And boy, just a side note, the Gremlin is going together like crazy: better than any car we've built in the last 15 years.

**MT:** Yes, the ones I saw looked pretty good, but what about performance?

**Teague:** There are very few rattles and squeaks and so forth, and with that 232 [engine] and three-speed on the floor, the Gremlin gets off the mark pretty well. Even when you lower the numerical axle ratio on it, you still get good mileage with performance, and that's not an easy combination to put together.

**MT:** One thing that occurred to me when I sat in the Gremlin was that the front seat doesn't go back far enough. Of course, that's been one of my major complaints with many Detroit cars

**Teague:** Yes, I know. Well, we could go back an inch except that then you wind up with no rear seat space; it's a pretty short couple anyway.

**MT:** I wondered why you didn't just make the package shelf in the back where the tire is just a little bit narrower, and move the whole seat back. You could have done that couldn't you, or is that too hard?

**Teague:** Well, it's pretty well locked in as it is, and we have a very, very thin pull-down seat back on the seat.

**MT:** Yes, I tried that and it's very clever but is it worth it?

**Teague:** We had it an inch thicker than the one that you have driven, so we're conscious of that problem. In fact, we've spent a heck of a lot of time just getting in and out of cars and trying to squeeze in every last millimeter of legroom and hiproom. Considering the pieces that we were carrying over from Hornet, and chopping up, and reworking, and the rear wheel positioning and where the wheel house has to be and all the other junk that can get into it when you're packaging people into one of these things, it was about the best compromise all around that we could make. Maybe we could have done a better job somewhere, I don't know. We just finally released a mini spare tire for the Gremlin, and that picks up a lot of space back there too.

**MT:** My thought was that it might be a better trade-off to have less space and do something with the tire, like a mini, and then just give the people a bit more room. In an Austin America there's almost no trunk space in the back at all. It can hold four or five bags of groceries, upright, and that's about it. But that doesn't really bother me. I would rather have the good back seat room that they have in an Austin and not have that space than have it the other way around.

**Teague:** The next time you have a chance to take a look at it, Eric, notice where the kick-up position is, relative to the back of the lower seat cushion. We're really just about up against the wall if we send up the lower seat

cushion to the point where there's just about enough room for your gluteus-maximus. So, it seems like, gosh I don't know, we could've done something other than what we did, but we felt at the time that it seemed to be pretty well-packaged.

**MT:** Well, of course, you know the hang-ups that you had and I don't.

**Teague:** We got into this thing on a pretty friendly tooling basis, you know. We felt we had to do it, even though some of the things, perhaps, were not what we would've done if we'd had a clean piece of paper to work with. Even what we did we thought turned out pretty darned good. You know, it's got a 20-gallon gas tank versus Volkswagen's 10½, and by the numbers, the thing will get within about 3 to 4 miles per gallon of a Beetle and out-perform it double.

**MT:** That's a good point.

**Teague:** Yes, it is. And even after our friendly compatriots over in Flint and Dearborn come out with their entries into the field, we think that we still will have an advantage. The warranty rates on that six-cylinder engine are almost ridiculous — they're so low. Some are getting 80,000 to 100,000 miles on these things without even a valve grind.

**MT:** Otherwise, I thought the Gremlin was very well done, and I liked the solid feel. It has a lot of interior space and looks large outside but isn't. It's actually deceiving.

**Teague:** You ought to see the centerline profile. I can show you an overlay of a Volkswagen absolutely to scale, and then an outline of a profile of the G-car [Gremlin]. It looks like the Hindenberg next to a GT 40. You know, we're 7 inches lower just for openers, and 2¾-inches longer. We did two runs on two different cars — one, strangely enough, called the Wasp, which is nothing more than an absolute chop of the Hornet, a 12-inch section out of the wheelbase. We could have used the Hornet deck lids and hoods and a lot of other things. But it was just a little sedan, a little two-door sedan with minimal room in the back and not really very good looking. If you're going to do a mini anything, it ought to be a mini wagon, particularly when you're short-coupling the thing and you get that short overall length in the back, the overhang. What you want to do is project a fused, sort of a wedge-type personality, and well. I don't personally think the Gremlin's going to win any styling award, but at least the car has personality and character and it really has a different-looking little image. It isn't just another little funny-looking sedan. It's a cute little wagon that looks like it'll do the job that we intend for it to do. One reason I think the Volkswagen has sold, besides the fact it's a good car, is that it's really a good looking antique car. All the shapes and forms and highlights and everything go where they should go. We think the Gremlin has it too. A sort of indefinable thing that's tough to get a handle on that says, "I'm a different-looking car, and that's why you ought to look at me." /MT

# 1970 MOTOR TREND MAGAZINE

## IMPORT

# CAR OF THE YEAR NOMINEES

PEUGEOT 504

DATSUN 240-Z

SAAB 99

BMW 2800CS COUPE

TOYOTA MARK II

VOLVO 164

PORSCHE 914

LINCOLN-MERCURY CAPRI



Motor Trend Magazine's prestigious Car of the Year award has been extended to include vehicles imported for U.S. sales. Here, the first year's candidates for Motor Trend's all-new Import/Car of the Year award. Next month: Rules to be used to select the final winner.

BY A. B. SHUMAN

## Foyt wins/Jones wins 8th Annual

The Motor Trend 500 is a different kind of race. Though it has served as the kick-off of the NASCAR season since its inauguration in 1963, it has not been what you'd call a NASCAR race. It throws together the country's top drivers and best-prepared Grand National stockers, letting them gambol and dice through the curves and esses of Riverside Raceway's twisting road course. Undoubtedly the most brutal event on the calendar, it's tough on drivers, equipment, and pit crews. Most of the 44 starters drop out somewhere in the 193 laps of the 2.6-mile asphalt sinusoid that intervene between the green and checkered flags. Dan Gurney won the first one. And the second, third, fourth, and sixth. Parnelli Jones was the ruffian who ruined Gurney's string (and his whole day) in the 1967 race, and Richard Petty—the only NASCAR driver to win—scotched Santa Ana Dan's chances for a new streak last year. Through it all, though, Ford managed to bag every one.

This year things looked like they might be different. Petty and Gurney were on the same side, not in Fords, but Plymouth SuperBirds. It was a bunch of firsts: Gurney's first outing since joining Plymouth, Petty's first outing since rejoining Plymouth, and the SuperBird's first outing since being coined by Plymouth. The appearance of the winged cars at this particular race was unexpected, as high speed aerodynamics would seem to have little effect on this course (though some of the cars were topping 160 down the back straight) and the added length of the stretched snoot was considered a handicap to maneuverability in tight traffic. This was the factory's official preseason posture, at least, but apparently the drivers (of the race-tried blood-brother Charger Daytonas) felt differently, believing that the increased stability of the cars more than made up for any other considerations. A total of eight SuperBirds and Daytonas made the starting grid, with SuperBird handler Gurney leading the flock.

Qualifying for the first 15 spots opened Thursday under skies that threatened



a repeat of last year's disastrous double rainout and postponement. A.J. Foyt's beautifully finished Torino Cobra set the pace with a best lap of 1:25.037, which converts to a 110.069 mph average on the 2.6-mile course. Then Dan'l took out his Ray Nichels-prepared, Petty Engineering-crewed, #42 Plymouth and broke his own 1968 qualifying record by 1.33 seconds with a 1:24.258 (111.087 mph), discovering a bent shock just before he took to the track. Gurney's old crew, the genuine, natural Wood Brothers, brought up their entry soon after, a Mercury Cyclone driven by Parnelli Jones. The 429 hemi had been limping off the pace on seven cylinders during earlier practice and they had finally gotten everything sorted out. Parnelli, used to the sick engine, looked a little skitterish on his first lap, but still ran faster than Gurney. His second pass was much smoother, as he beat the SuperBird's time by a full second, with a pole-winning 1:23.249 (112.337). Only he didn't win the pole. In fact, he almost got thrown out.

Things began cooking that afternoon and came to a rolling boil on Friday, almost compensating for the lack of action when a small monsoon completely cancelled the day's qualifying. The problem was Parnelli's tires... but not until he went so fast. He, Ray Elder, and Jack McCoy (ninth and thirteenth qualifiers, respectively, in Dodges), were using Firestone tires of a type which NASCAR ruled, on Friday, was ineligible. The charge was they violated the NASCAR regulation that "a manufacturer must have available enough tires of the same tread or grade rubber for all contestants." Just how many "enough" was had never been spelled out, but after several calls to Bill France and a count of Firestone's 536 tires on hand at the track, the number 600 came up and NASCAR Vice-President Lin Kuchler declared them ineligible for the race. Bill McCrary, Firestone's Director of Racing (see Rap 'N' Pinion, January 1970), felt it was a question of politics, asserting that the tires there (409 of which were identical to what Jones

*continued*



was using) were more than adequate to take care of the entire starting field. Actually, they had nearly twice the amount that they had at the race the year before. Summing it up, McCrary said, "We feel NASCAR was forced to declare these tires ineligible because our competition wanted to eliminate these tires from the race and threatened to withdraw from the race unless they were. We are very disappointed with the decision." So much for understatement.

It really all started when Ford found that Cale Yarborough wouldn't be able to drive in the race because of the broken shoulder he sustained at Texas International. Jones was called in, but since he's a Firestone distributor, he couldn't very well run on Goodyears and Firestone is out of NASCAR. The 1970 NASCAR rules included an increase in allowable rim width from 8½ inches to 9½ inches, so Parnelli elected to use the wide tire they ran in USAC events last year. These tires were on the car when it was inspected, passing the "hoop" test, and nothing was said

until the Woods got that eighth cylinder running. The general feeling that Goodyear (which had not come up with a similar wide tire) was putting pressure on NASCAR was manifested in the rumor that they had threatened to withdraw for the rest of the season if Jones was allowed to run. When questioned about this, Chuck Blanchard, Goodyear's field manager for stock car tire development, replied, "We're here, and we intend to be at the rest of the races this season no matter what the tire ruling is."

Despite the obvious temptation to just go home, the Jones-Wood team stayed on. As Ford's racing chief, Jacque Pas-sino, put it, "We came to race and we will." The upshot of the flap was that Jones, Elder, and McCoy were allowed to start the race from the back of the pack if they changed to "eligible" tires. Other drivers who qualified on the rejected rubber and chose to stand on their times were also directed to move to the rear under the same stipulations. So Parnelli's qualifying record was disallowed and his Merc made to start in

36th place, the remainder of the field determined by the entrants' order of sign in, as weather and time did not permit further qualifying.

Despite the early-morning clouds and mist that shrouded the Raceway until two hours before the start, just over 43,000 spectators showed up on Sunday. The final order had Gurney, David Pearson, Foyt, Bobby Allison, LeeRoy Yarbrough, Petty, Bobby Isaac, Donnie Allison, Sam Posey (in Cotton Owens' Charger 500), James Hylton, Joe Franson, and Buddy Young in the first six rows. The Chevys, including a '68 driven by Lothar Motschenbacher of Can-Am competition, were all further back.

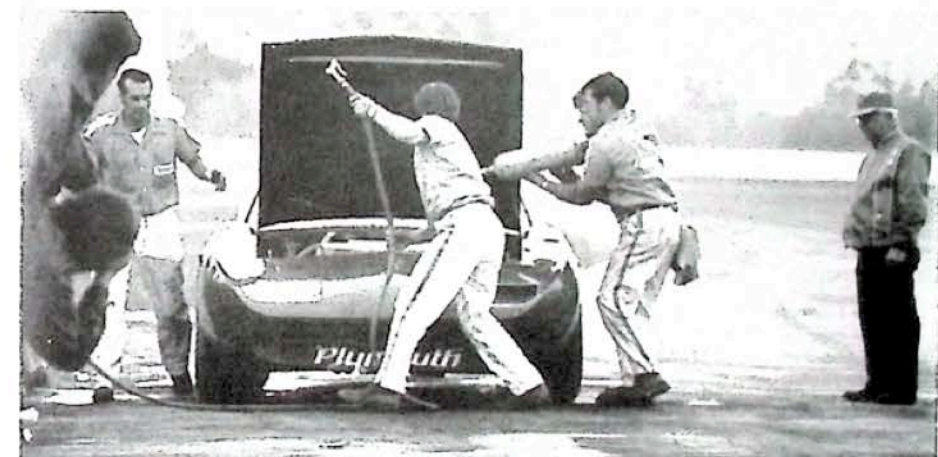
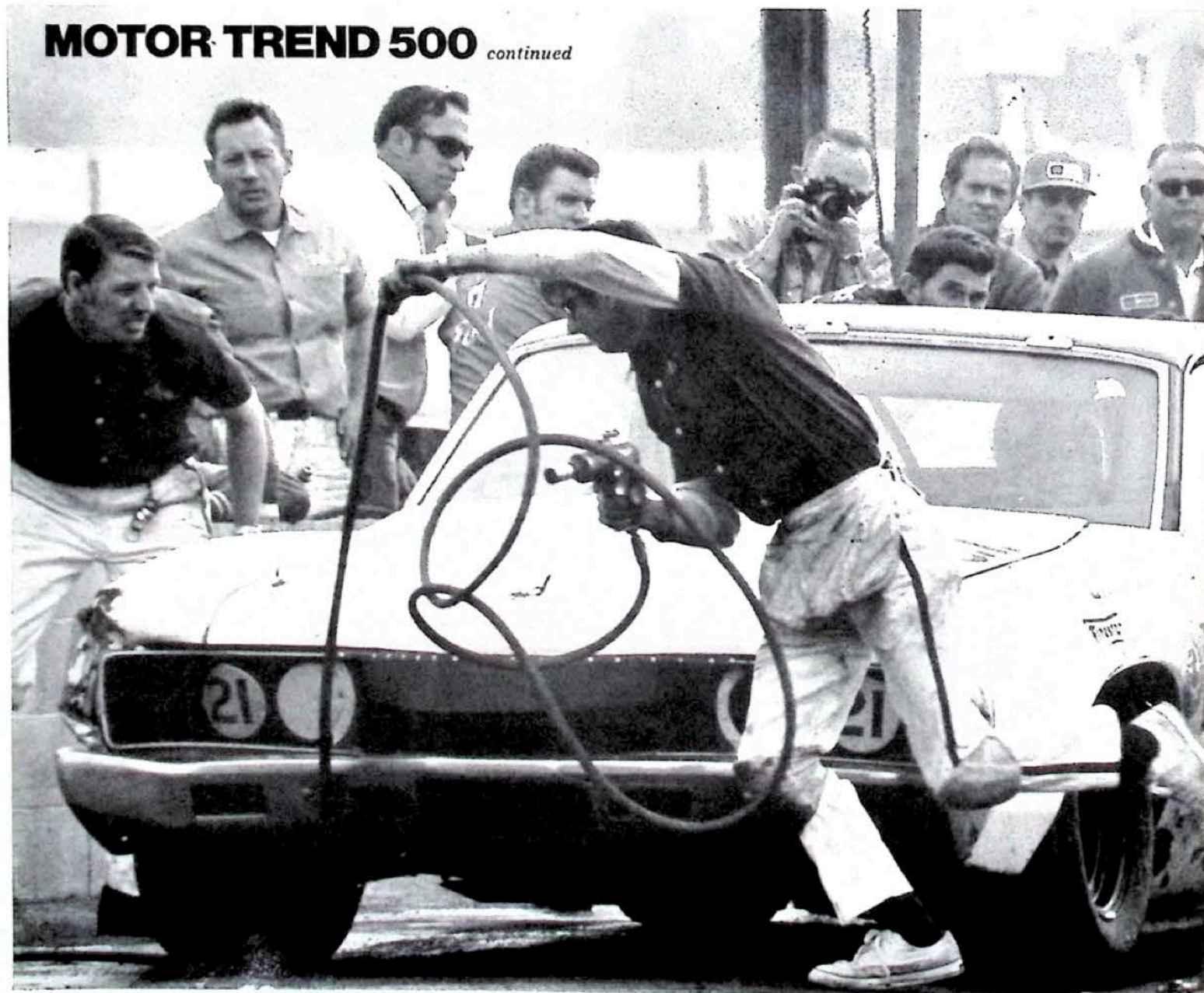
Coming out of Riverside's new, sweeping turn nine and onto the short front straight, the field was waved off on a thundering, dusty, flying start. Pearson's Torino jumped to an immediate lead, beating Gurney to the first turn and leading him by 2 seconds at the end of the first lap, though both were pulling away from the field. Meanwhile, Jones had gone from 36th to 18th.

*continued on page 78*



After setting a new lap record during qualifying, Parnelli Jones was moved to the back of the pack by an eleventh hour tire ruling that served to make him the crowd favorite. Driving the #21 Mercury Cyclone slated for sidelined Cale Yarborough and aided by the Wood Brothers' pit work, he led for a total of 88 laps, going out on the 169th with a wasted clutch. Dan Gurney's SuperBird went into the pits for 12 minutes on the fourth lap, but he pressed on to finish sixth. Roger McCluskey's Plymouth fared better, coming in second to Foyt's Torino. A.J. "had his mojo workin'," finally breaking the jinx that's kept him from winning. The victory was good for over \$19,000.

## MOTOR TREND 500 *continued*





## MOTOR TREND 500 *continued*

At the end of 10 laps, it was Pearson, Yarbrough, and Foyt, with Pearson setting a new record average of 108.831 mph. Meanwhile, Jones was somehow in fourth. On the 16th lap he passed Foyt and moved into third place, 14 seconds behind flying David Pearson. On the 20th lap the Torino still had the lead, another new record, and Jones on its tail. Petty took the lead briefly when the leaders pitted on the 26th orbit, but Pearson quickly resumed command, 6 seconds ahead of Jones. Oil on the track brought out the yellow flag on the 34th lap, the 3 leaders pitted. At the green, Foyt had the lead, with

Roger McCluskey's white SuperBird second. The yellow came out again on the next lap when Buddy Young's Torino hit oil going into turn one and rolled at least a dozen times. (Rushed to the hospital by helicopter, he was doing well at last report.) Foyt pitted, giving Jones the lead, but when the yellow was finally lifted after 8 laps, Bobby Allison's Daytona had the lead, followed by Petty and McCluskey, who were jockeying back and forth through the 58th lap. On the 59th, Foyt passed McCluskey, moving into third place, and then into second on the 61st. While A.J. pushed Allison for the lead, Jones

moved up again into third place. Allison pitted, Parnelli passed Foyt and was suddenly leading at the 67th lap.

Jones so dominated the action that he was 48 seconds ahead on the 74th lap, allowing him to pit without losing the lead. It looked like he was going to run away with it, as the field continued to string out. Sam Posey created a stir when his engine blew and caught fire on the front straight on lap 84. Spinning the car onto the emergency road before turn one when the rear brakes locked, he jumped out uninjured, the flames blown out. Everyone headed into the pits while the caution flag was out. Allison got out first to recapture the lead, followed by Pearson and Jones. Pearson caught his second wind and passed Allison's Dodge on the next lap, successfully holding off Parnelli's inevitable bid. Another yellow, on the 94th lap, brought both cars into their adjacent pits. Coming out together, they nearly collided. Foyt picked up the lead, then lost it to Yarbrough. Jones pushed LeeRoy hard and got by him on the 99th lap, turning consistent 1:25 laps thereafter.

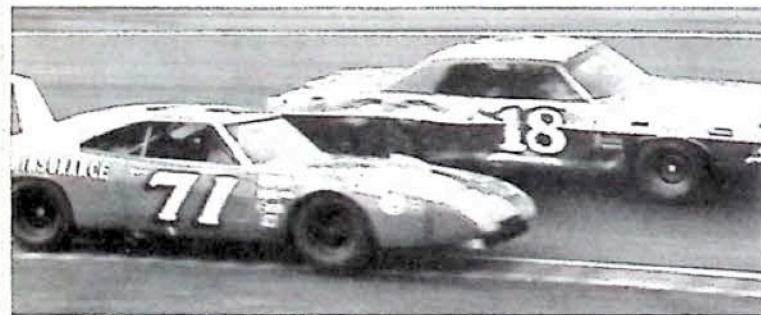
On the 103rd lap, Jim Cook and Pearson came down the long straightaway into turn nine abreast. Cook's '68 Ford hit the boiler plate wall virtually head-on, critically injuring the 48-year-old well-known West Coast driver. Pearson seemed concerned as he passed his pit with a slightly mangled front end. On the 107th lap he began dropping back, finally coming in on the 133rd where Bobby Isaac took over for him. Pearson headed for the driver's lounge, saying he was exhausted and had difficulty shifting. Isaac had limped into the pits 50 laps earlier when the engine blew in his Dodge. On lap 150 he was back in the pits, the #17, Holman-Moody Torino out with a broken shift linkage.

At this point, Jones was still holding onto his lead and Foyt and McCluskey were alternating in second and third place. Petty's SuperBird had bent its beak in a spin on the treacherous turn six, on lap 147, but Richard, 2 laps behind, was still pushing, holding onto fifth place. Everything was going Jones' way until the 169th lap, when he lost his clutch and coasted off the course, ending his bid but still giving him a moral victory. Foyt picked up the lead and was 7 seconds ahead of McCluskey on the next lap. Yarbrough's white Torino was holding onto third place.

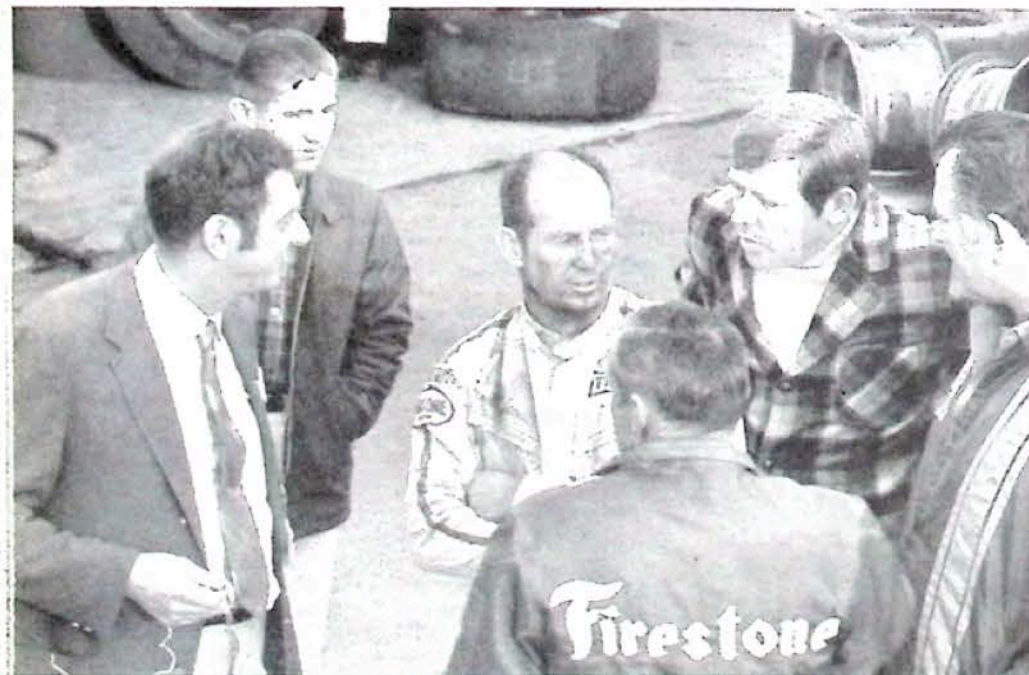
After spinning in turn 6 on lap 183, Gurney's engine stopped. He got the car going on the 186th lap and reentered the race. Foyt, who had spent 6 months in the hospital after a spectacular crash in the '66 race, fought off a final challenge by McCluskey to win, Yarbrough was third, and Donnie Allison, fourth. The Plymouths of Petty and Gurney came in fifth and sixth, with just 15 cars running at the end.

It was an unexpected victory for USAC-driver Foyt, who had considered the track to be his personal jinx. For Jones, and his many rooters, it was a bitter disappointment not to finish, but his virtual domination of the race stole most of Foyt's glory.

/MT



Richard Petty, here giving McCluskey a little help through turn 6, had engine problems, finished 5th. Bobby Isaac, going low on Jim Cook, lost his engine before halfway point. Cook was very seriously injured in crash on 103rd lap.



Back in the Firestone garage after dropping out with victory in sight, a grimy and tired Jones tells Ford's John Czwley, left, and friend Vel Miletich, right, all about it while Foyt wins.



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# INTRODUCING...

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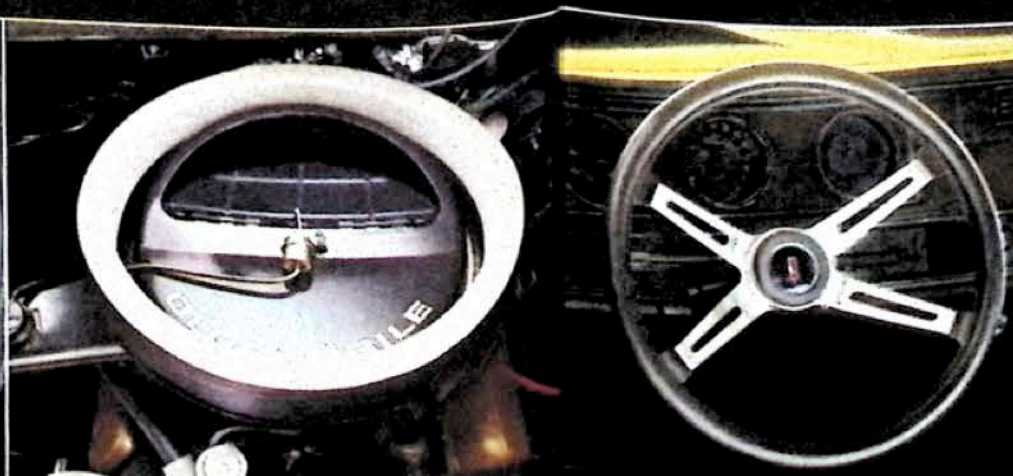
It's an all-new action look. From the wheels up. From the price down.

Olds Rallye 350. Just plain beautiful—to look at, drive, and price.

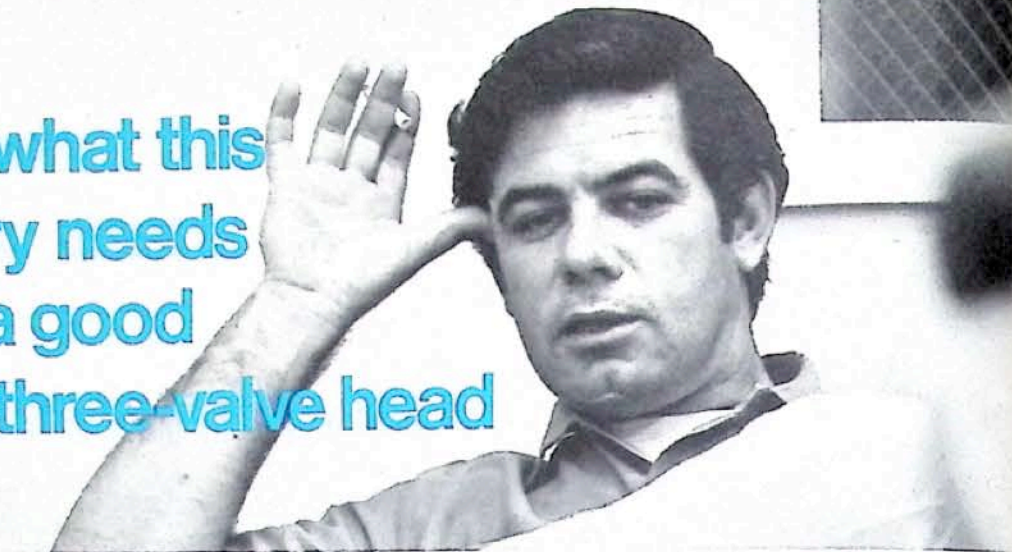
A 4-barreled, air-inducted V-8 makes it run. A 4-4-2 developed suspension makes it handle. And about every action/appearance item you can think of (scoops, stripes, blacked-out grille, yellow-coated bumpers and wheels, etc.) makes it the boldest scene-stealer that ever toured Main Street. And you can order it with a rear-deck spoiler.

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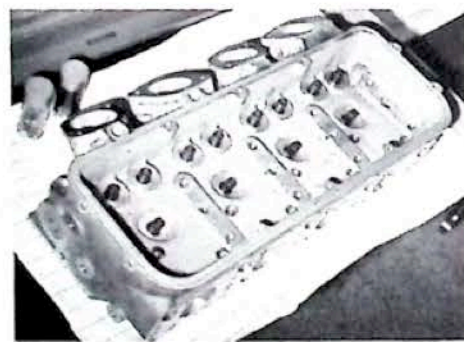
... and for that one thin nickel, All-American Racers could give you over 600 horsepower from your 344-cubic-inch stock block.

BY JIM McFARLAND

For quite a number of years one of the established goals of both formally and sorta-formally trained automotive engine builders concerned a power level achievement of one horsepower-output (corrected, not observed) per cubic inch of engine displacement, normally-aspirated and using gasoline as fuel. Even in the category of automobile (or non-motorcycle) racing powerplants, this was a feat normally punctuated by every card-puncher in the dyno room partaking in the after-hours "grape" to the extent that it took the proverbial pair of blind donkeys, a roadmap (in braille), and the instinct of a Peruvian homing buzzard to find home that night.

Of late, the feat is accomplished much more often, but as you might expect, the mystique of another "limit" lures engine tinkerers on into the night of cut and try. When 1.5-horsepower per cubic inch of displacement was bettered, fewer players remained in the game, and now that we can substantiate a figure of 1.77, it looks like 2.0 is in danger of being touched. But to obtain a factor of 1.77, something more involved than a plug change had to develop.

On the heels of a head pattern now labeled the Gurney-Weslake design for little-block Fords (à la Indy 500, Rex Mays 300, et al.), Dan and one of his engine men, John Miller, are now will-



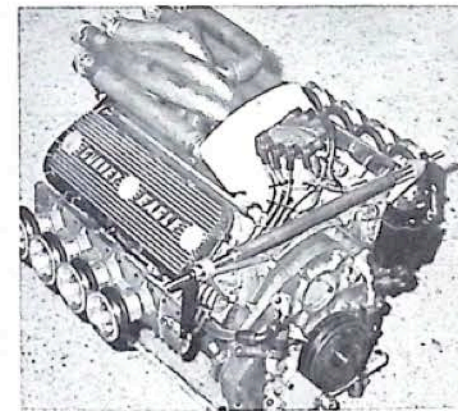
Grass-roots presidential candidate Dan Gurney is still active in refining the small block Ford for racing. Latest development is a twin intake valve variation of the famed Gurney-Weslake head. Flow has been improved by about 100 cfm on the intake side and 80 cfm on the exhaust, resulting in a more than 60 hp gain. All valves use 45-degree, .030-inch seats.



ing to talk about a new version of cylinder head: three valves per chamber, considerable boosts in total port flow, a corresponding power increase of 60-plus horsepower (at peak), and sufficient remaining power potential to make that 2.0-hp-per-inch mark something other than a plateau generally reserved for the bike engine proponents.

Origin dates to late spring of last year. Just prior to the '69 Indy event, John farmed out the initial casting requests, and by the time most post-Indy dissections had been made on Dan's second second-place car, as-cast pieces were on the floor of the All-American Racers shop, and John was hungry for 3-valve results.

Every machine cut required pursuant to head completion happened in the Gurney shop, and with the possible exception of small jobbed-out piece work (valve seats, lash adjusters, etc.), Santa Ana daylight never touched the new heads until early fall just past. At Riverside, the engine would overheat: "Just about the time Dan would get warmed



Pumping out 606 hp at 8500 rpm on gasoline, the engine ran into heating problems in early track tests. These have been corrected and spectacular results are expected in the near future. Relatively low lift, short duration camshaft speaks to intake valves with forked rocker arms. Ends of clearance adjusting screws are articulated for better geometry.

up, so would the engine," John reported.

Previous experience with the 2-valve heads on the little-block Ford had never unfolded this condition, so extensive track testing was postponed until the temperature situation was pinned down. As it turned out, coolant entry points in the heads were situated slightly below the effective level of water inside the heads. Resulting air pockets were collecting steam, blocking coolant flow through the heads and permitting overall engine temperature to rise above the safe level. On the dynamometer, this condition was not apparent since coolant was force-fed through the engine, and steam pockets never developed.

The problem is now solved, with relocation of the coolant flanges. But in the interim, other projects have prevented Dan, John, and group from returning to the track for what could conceivably be some truly impressive results.

At the time of this writing, the engine is producing a corrected horsepower reading of 604, out of 344 cubic inches, normally aspirated and using garden-variety pump gasoline. In the words of an English engineer fully acquainted with some of the better types of automobile racing engines (and one who prefers to remain unnamed at this time), "This is not only bloody impressive, but is quite clearly the best I've yet seen unblown on gasoline." You can believe it. You'd recognize the name.

Looking somewhat deeper into the specifics of the new heads, it is interesting to note that John has incorporated several "lessons" from the earlier 2-valve head pattern. First, he has positioned the injector nozzles so that fuel is delivered against the direction of the inlet stream. Stated reason for this is improved material breakup of the fuel charge and prolongation of fuel atomization throughout the length of the intake runner.

Flow is equalized among all the ports in each head. Admittedly, it requires considerable time to individually check, trim, and match each port in any type of head, but it is John's belief that such an approach will provide maximum possible flow volume, mixture speed, and fuel distribution uniformity in the operating engine. It also gives him repeatability, a critical element in the development of any engine equipment.

Each combustion chamber is another fully machined area. In the as-cast form, the block sides of the heads are flat. Consequently, the surface must be cut, chamber contours scribed around the eventual valve seat locations, valve seat and guide bores trued, seats and guides pressed into place (both are installed with 0.006-inch press clearance), and final chamber volumes matched for static compression ratio uniformity. Valve seats are set at 0.030-inch widths and 45° angles for both intakes and exhausts. Conventional head gaskets are replaced by O-rings (in the heads) around each chamber. Piston tops are flat (but notched for valve clearance), so there is no room for chamber volume augmentation through reshaping of piston compression "bumps" or repositioning of piston pin axes.

Static compression ratio works out to 11.8:1 (for gasoline). Inlet flow is improved by almost 100 cfm (over that of the earlier Mark series 2-valve heads), and exhaust flow is bettered by 80 cfm. By today's standards, both intake and exhaust ports would be considered high-volume and low-velocity patterns, but it is difficult to establish high rates of mixture flow (and still maintain a reasonable degree of volume) when the runner length is as short as it is in the new 3-valve head. Short length dimensions of this type reduce the effectiveness of reversion wave absorption (back-travel, or pressure reaction from a snapping-shut intake valve) and dictate shortened effective valve timing. If you're *really* a student of engines, this last point bears a little time for thought. This, then, answers the question of why the new 3-valve engine's camshaft sports comparatively low lift and short valve events: about 306° duration and 0.400-inch lift on 104° lobe centers. Utilizing these "softened" specs, the engine will spin rpm in excess of that attainable with the 2-valve engine; 7800 rpm peak as compared with the new level of 8500.

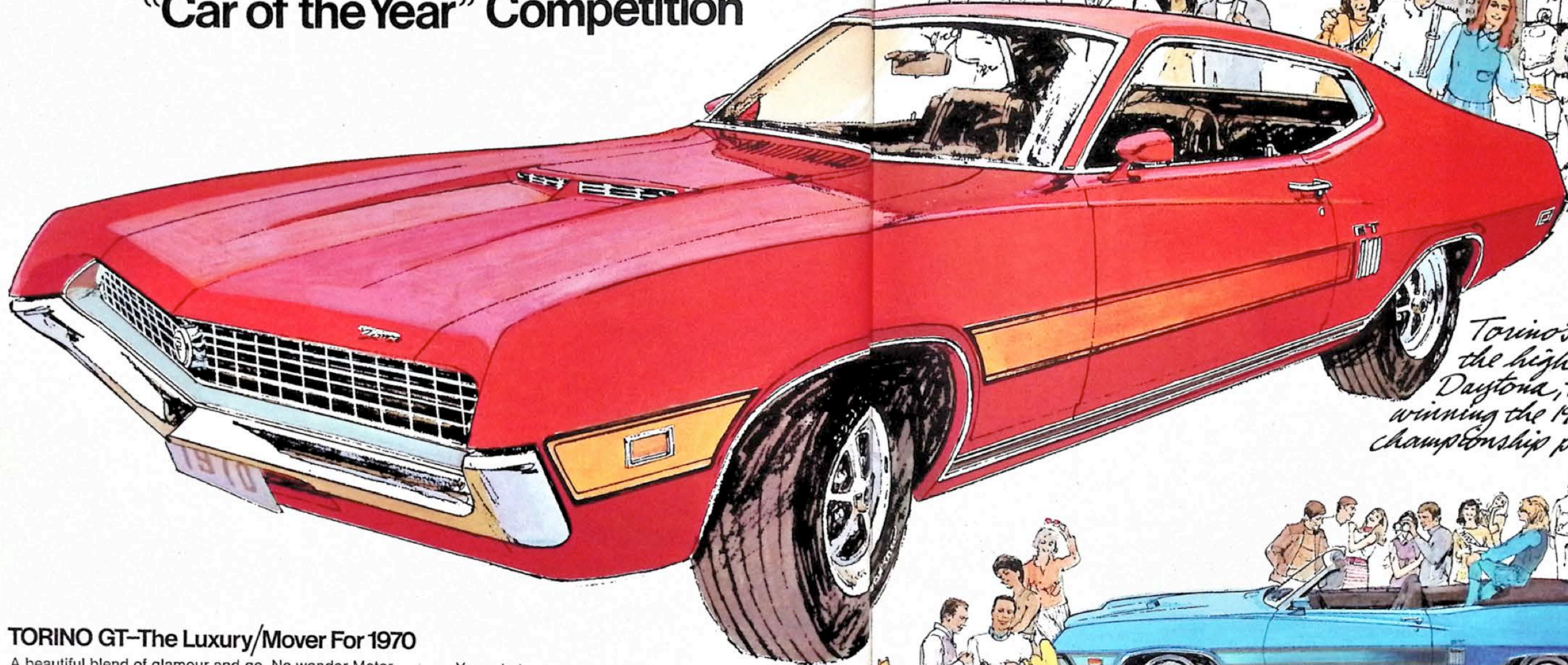
Part of the flow improvement can be traced to back-of-the-valve-head science (change in fillet radii) and part to the overall characteristics of both inlet and outlet ports. (Basic valve dimensions parallel those of the 4-cam Indy Ford engine.) In the final analysis, these refinements spell output boosts now quoted from dyno tests centering on the 344-inch grown-up small-block Ford (3.25 bore x 4.11 stroke). Only reason why this particular size was selected was because of time; the Can-Am limit for this engine is 344, and there simply wasn't sufficient time to construct a fresh engine for testing when John had the opportunity to flog the project.

To date, the best on-gasoline power figure was 606 horsepower at 8500 rpm. By way of comparison, this same engine equipped with the Mark IV 2-valve heads ran the pump needle to a shadowed 534 at 7800. They may look weird, but they honk.

Even with this much pressure, bottom-end life problems of the type that developed early in the Mark engine build-up have not appeared. Slight rotation of the crankshaft counterweight between two particular main bearing journals has evidently put the kabosh on crankcase webbing ills. Crankshafts are still of the Moldex design.

About the only remaining ingredient for the program is live data gathered during on-the-track conditions. Riverside is a scant stone's throw from Dan's shop (as the Eagle flies), and it is logical to assume that there will be ample wring-out exercises during the early spring months this year. On paper, so to speak, the project remains an obvious plus. And somewhere in this pile of organized confusion, it would appear that Dan has a specific goal set aside for the new package. Frankly, it's been discussed, but to slide this scrap of paper out to you from under the door would be violation of the ancient rule of goesintas. And obviously, that's classed as a no-no. /MT

# Torino: Winner of Motor Trend's "Car of the Year" Competition



*Torino's at home on the high bank at Daytona, too. And winning the 1969 NASCAR Championship proves it.*

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A beautiful blend of glamour and go. No wonder Motor Trend named Torino "Car of the Year." Torino won out over a pack of the newest and best the competition had to offer.

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But Torino GT's performance (with the optional 351 4V) impressed Motor Trend's panel of experts as much as its luxury and looks. "An especially desirable combination of power and weight" which added up to "good marks in handling in the mountains."

For the experts, Torino's "broad range of choice was the deciding factor." You almost need a computer to check out the possible combinations of power and plush, sport and style that you get in Torino GT.

Your choice of six great V-8's, from a lively 302 all the way up to the powerful 429 Cobra Jet Ram-Air V-8.

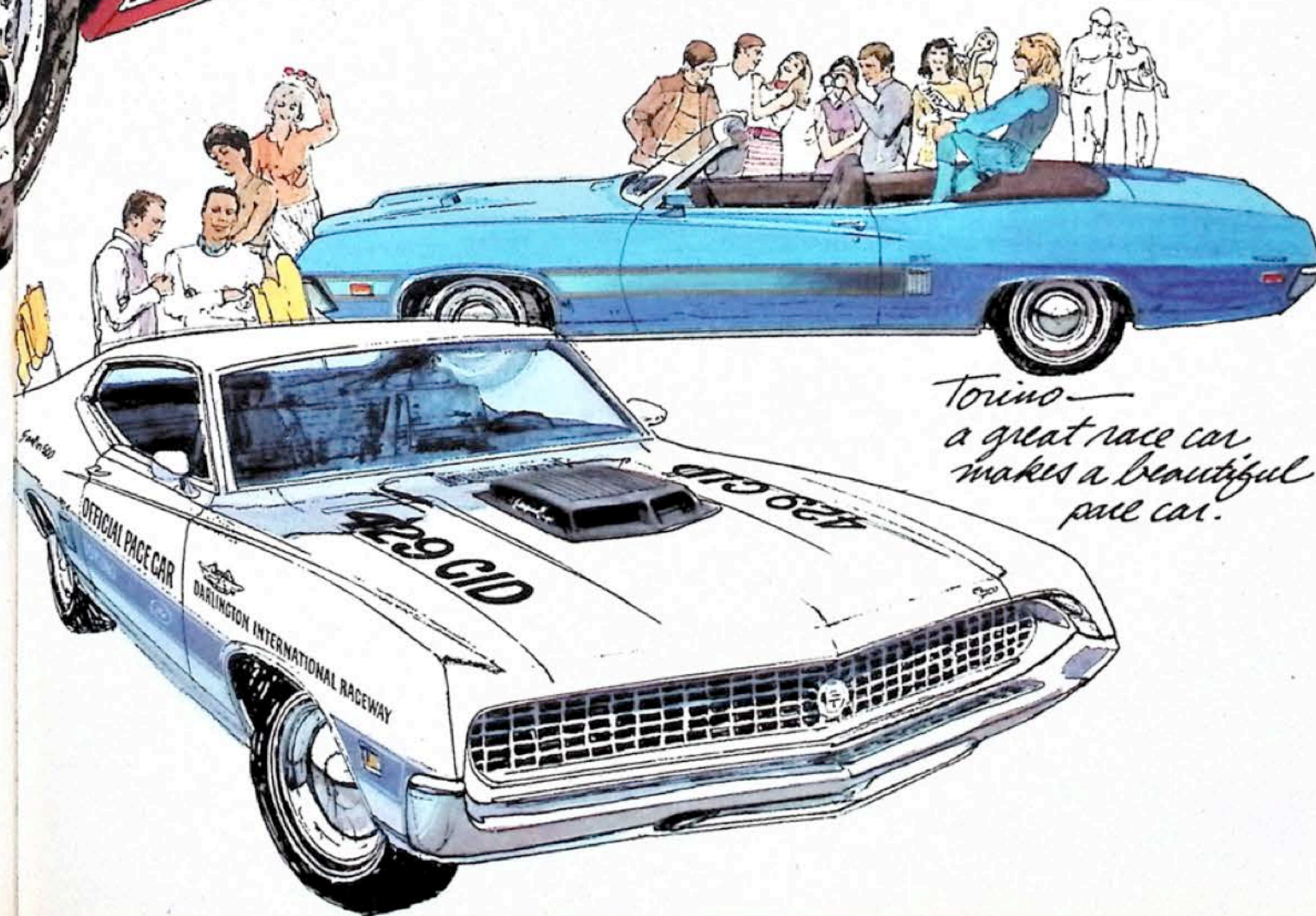
Torino GT can be as sporty as you like, with butter-smooth 4-speed and knife-quick Hurst Shifter®. Or, you take your choice of automatic or manual action with Ford's great SelectShift transmission. Competition suspension is standard with any of the three 429 CID V-8's and you get wide-oval belted white sidewall tires on every model.

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For the full story on all the performance Fords for 1970, visit your Ford Dealer and get our big 16-page 1970 Performance Digest. Or write to:

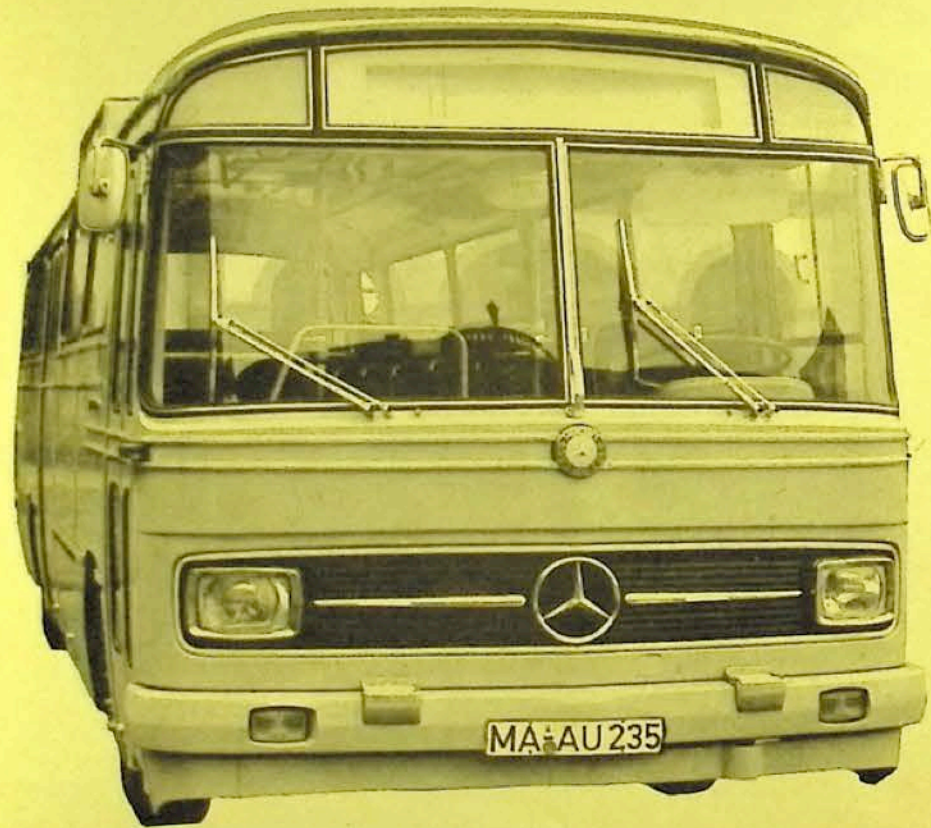
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*Torino— a great race car makes a beautiful pace car.*

TORINO 

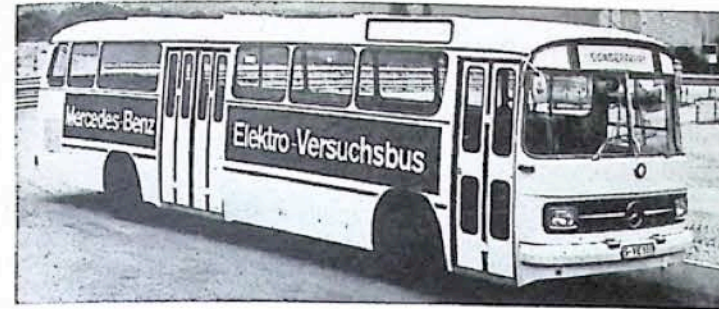
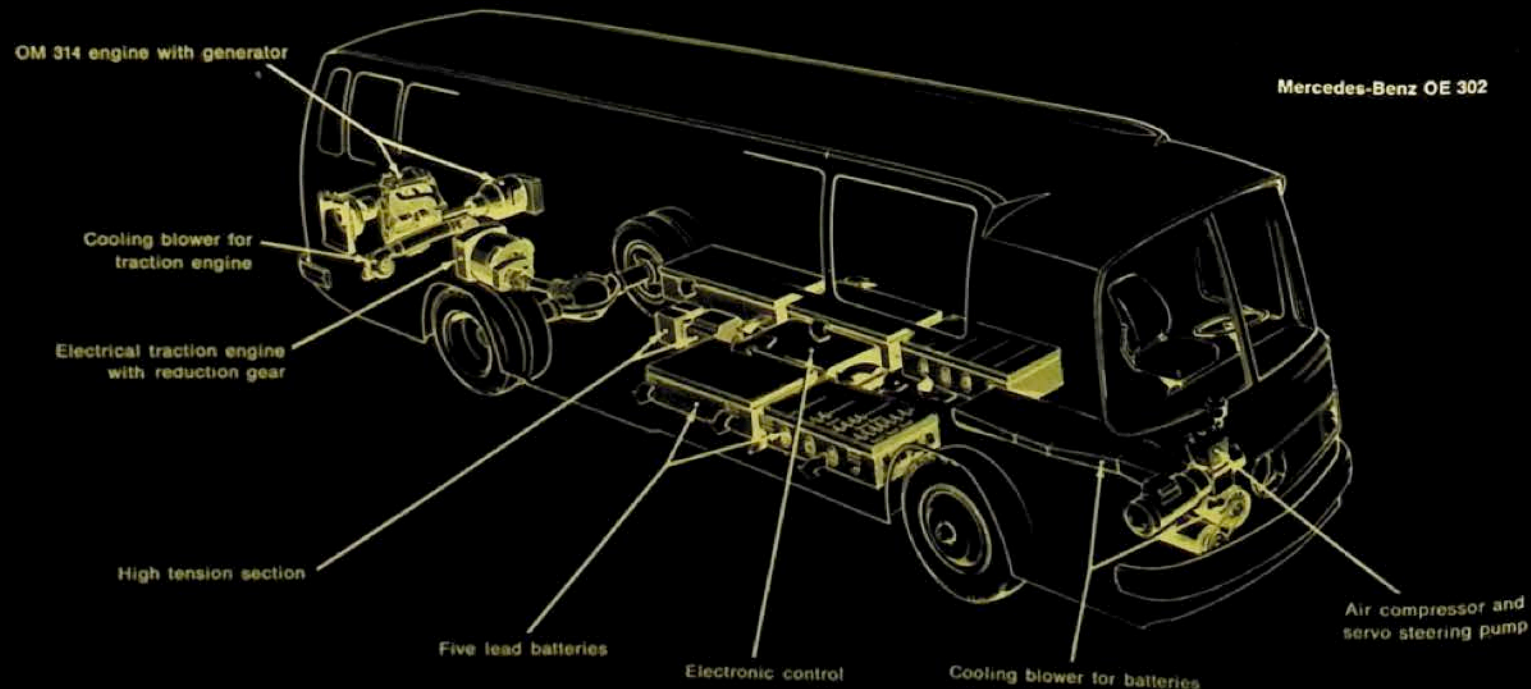
# OHMSMOBILE



It was just lovely the way it happened. Primarily, the good people of Mercedes-Benz got us all out to the Hockenheim race course that day to revel in the mechanical delights of their C111 and 3.5 V8, but they also had a word or two to say about pollution. After spending the last 5 years and not a few Deutschmarks re-engineering their American export cars to fit an emissions law of ever diminishing tolerance, M-B is aware that pollution is one of the keys to the automobiles and its future. The surprising thing is that they seem more aware and socially conscious about the problems than our own people in Detroit, who wish deep in their hearts that the San Andreas Fault would do its thing and replace L.A.'s inversion layer with about ten fathoms of the Pacific.

Mercedes has looked the whole scene over and decided that current steam and turbine technology doesn't make it; Bill Lear to the contrary; and that good old electric drive is the plan because it's easy to operate, safe, and has a simplified drive system. How complicated is a slot-car, right?

Well, most of us have heard that stuff before in Detroit, and then they marched us out to see some little



About 50 percent of Mercedes production is commercial vehicles — one of them is an electric bus.

BY ERIC DAHLQUIST

widget the size of a Corvair all jammed up with some 8 tons of batteries, no interior space, limited performance, and the range of a 100-foot extension cord. It almost appears sometimes that Motown presents these alternatives to the internal combustion engine as serious efforts on their part that have so many intrinsic design hangups as to be judged impractical by even an emphysema patient.

The Germans don't know about the dragging-your-heels-in-the-face-of-Federal-statute syndrome and promptly invited us to step aboard this 66-passenger bus that has just materialized outside the briefing tent. It's not just any bus, you understand, it's Elektro-Versuchsbus OE-302 — the Mercedes Electric. No maybe's or tomorrows or "it-doesn't-work-now-but-come-back-again-next-year's" but here this minute, ready to whisk you around the track. Well, swell, you say, we recognize that buses make up a large percentage of any city's core vehicles, but they're mostly diesel powered so they don't pump the red meanies out of the exhaust — oxides of nitrogen. That's a good thought and yet no one will argue a diesel's soot-factor is pretty high, not

to forget noise. Anyway, you've got to start somewhere and if M-B can create a vehicle that significantly reduces two pollutants — soot and noise — in a practical form, it stimulates further work in the field which is almost more important in the longer view than immediate, but minimal, smog reductions. The battle for men's minds, you see.

When you think about it, a bus is ideally suited for electric power and after a Mercedes engineer quietly explains it, you wonder why you're 4,000 miles from home listening to this. In the most correct sense, the OE 302 is a hybrid; that is, it runs on two power sources: electric and diesel. There are five giant common lead-acid batteries weighing 3.5 tons lying flat under the floor between the front and rear wheels. These little sweethearts are the epitome of a die-hard. Where a normal battery can take 200 100- to 20-percent cycles, these do 1700-1800 without a second wind. Immediately behind the batteries is a high-tension section that looks like a 500-watt Grundig amplifier to regulate current flow to the 380-volt, 450-amp, 200-horsepower electric motor, and from the small 65-hp diesel generating motor in the back

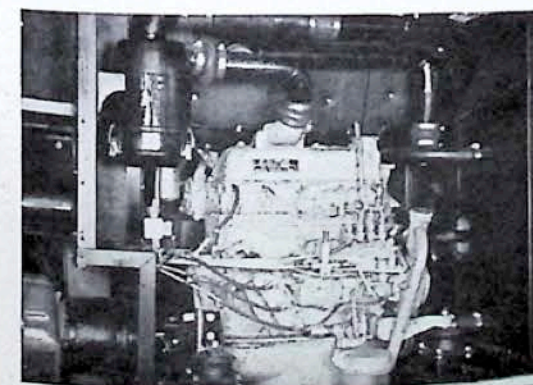
where the normal power plant would be. Besides a cooling blower for the batteries, and electric motor, the bus meets the normal Mercedes bus quality in all other respects, which means it looks like a Boeing 727 inside.

Around Hockenheim the OE 302 was like riding in a library — the only sound is the tires when the machine is under full electric power and a faint hum as the diesel is engaged. Acceleration is approximately that of the city buses we are all familiar with and a 43-mph top speed is not much different either.

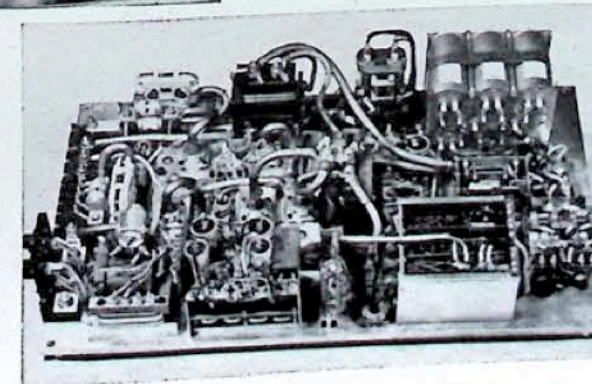
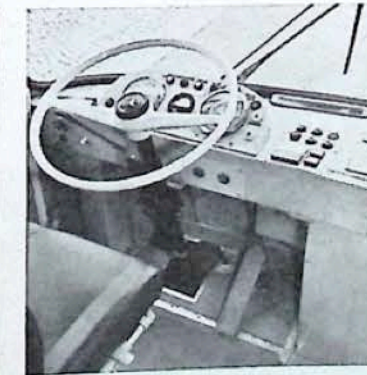
Mercedes took the bus route not only for the vehicle's superior load carrying characteristics, but that the course it follows is very predictable and, therefore, easily programmed into a computer to plan an ideal acceleration-deceleration sequence for the batteries. The last thing you want is an electric-motivated vehicle roaring down hills charging the batteries going one way and then having to climb back up all of them on the way back. In the central city, obviously, the power is purely electric, and diesel in the suburbs where vehicle and pollution concentrations are less. When the bus is under battery power, about 20 percent of the energy is used for recharge and absorbing the vehicle's momentum in braking; the generator offers a straight 25-percent recharge. Every bus driver must follow a very easy stop-and-go sequence to avoid disturbing passenger comfort, a situation that dovetails conveniently with electric demands. Operational cost of the 302 is, as you might anticipate, not quite as low as a normal diesel. So the primary determination is whether or not the trade-off for lower pollution is worth the money.

What is there left to say? The OE 302 is as real as its 16-ton gross weight. If any of you cities out there in progressive America really want to do something about cleaning up your air, Mercedes will send you an order blank. You never can tell, you might like their cars, too.

/MT



Somewhere in the picture of every bus is a diesel motor, right? In OE-302 (above), it generates current to batteries. Driving bus is easy (above right). The left foot has nothing much to do. Quasar in a box (right)? No, electronic control.



Corvette owners are different from you and me. They possess something unique in a mass of mediocrity, and it does something to them, makes them critical where we are not, and demanding where we are trustful, in a way that, unless you have a Corvette, is very difficult to understand. Scott Fitzgerald probably would have loved Zora Duntov.

Perhaps the best hint of it is in *Corvette News*, the slick house organ of the Corvette Club of America that out-classes all but the cream of automobilism's satellite press. Produced deep within the sanctums of Campbell-Ewald, the advertising agency that shuttles Chevrolet's galaxy of stars in and out of its various media spectacles with the flourish and sweep of David O. Selznick, the book is conceived for and, significantly, by enthusiasts. Behind the accurate and sometimes bold leadership of Chevrolet executive Joe Pike, CN more often than not exhibits candor in bigger wads than anyone has a right to expect. The tech stuff is accurate to the third decimal place.

Populating the pages of *Corvette News* are youngish, good-looking types

in Harris tweed sport coats with pretty women at their sides. When was the last time you saw an ugly broad in a 'Vette? It is a small, self-perpetuating society where the people who build the car and the people who buy it are interchangeable in the same way they are at Ferrari and Lamborghini.

And if there are certain similarities between this small clutch of aficionados and other of the world's great automobile builders, the Corvette's progress through the preceding 17 years has been at a parallel steady but unhurried gate that for the most part means little change from one year to the next. Unless, of course, a competitor, which is to say Ford, threatens to make your machine eligible for exhibit at the Smithsonian Institution. A situation that nearly materialized under the Knudsen-Shinoda regime which all but steamrolled a mid-engine, small-block Group 7-like coupe onto the streets of America last fall.

But that threat is passed for now, and Corvettes are still selling at a more rapid rate than they ever have, and the car is neat even if it has its engine in the same old place. The "new" 1970½

specimen is not very much different than the "old" '69, but not very much different in the same way a VW is not very much different from year-to-year: just 20 or 30 improvements.

Duntov and Gib Hufstader brought an example of the machine they intended to start the new decade with to Riverside Raceway's cool, thin December air along with the Camaro bunch. As you might expect, the Corvette people didn't say too much during the oral presentation—they just put their top-of-the-line 454 out on the ride-handling course set up for the occasion, orbited the thing all day mostly flat out, changed the tires and sent the car back to Detroit the next morning on a cross-country road test. Of course, it is nonsense comparing a Corvette to a Camaro, even a Z28, yet these proud men must have felt some inner satisfaction as the Camaros went back and forth to the pits while their machine droned on.

For the first time, the Chevrolet people have realized that you actually don't need or want an all-out racer these days—the optional capability certainly, but maybe not the image. The new direction for Camaro is toward a true GT posture

and in Corvette's instance, we would have to qualify this to read truer, since they have had the real leather upholstery on the order form, if not in the car, and long-distance runner potential.

It probably had to do with pricing, not emphasizing the leather threads. You go putting an optional interior on top of an air-conditioner and stereo and some wheels and that's a fat payment book. But if you look at it from the aspect that with the big engine and the right differential gearing, a Corvette is going to have about a 160-170 mph top-end capability and brakes and handling near the same levels as an Aston-Martin DBS or Ferrari at half the price, there is a real chance someone like a DeTomaso customer could be interested. If deep-pile carpets and leather are the answer, then the Saddle DeLuxe option shown at the preview gets about 9 on a rating scale of 10.

Together with luxury, engine size is escalated. What was once an L-88 427 is now an LS 7 454 with the trick aluminum, "open-chamber" heads and 465 horsepower. You immediately notice that the 3 x 2-bbl setup is gone, superseded by an 800 CFM Holley four-

throat. The Holley simplifies things like response and linkage and emissions, and is a higher unit than the Carter 2 bbl, requiring the manifold to be "sunk" into the lifter gallery. Short manifold runners and a close proximity to heat haven't seemed to cause any lack of power, though August in Riverside may be a different story.

"This LS 7 package is a good starting point," said Gib Hufstader. "Coupled with a 3:36 gear, you have plenty of power without a lot of revs and vibration. If you want to modify the engine, you don't have to throw away the heads of the L 71 solid-lifter cam because they work."

Another package that works is the dual disc clutch and so-called "rock-crusher" 4-speed Muncie box that is basically an M-22 with greater diameter input and output shafts and gears with a lower helix angle. The clutch pack is a pair of 10- x 6-inch (10-inch outer diameter, 6-inch hub) discs, with a floater plate between and a standard pressure plate. It is really the answer.

Disengagement seems to happen rather far down in the pedal travel, but take-up is good with excellent modula-

tion. No one, or nearly no one at the preview missed a shift. The harder and faster you went, the better it seemed to work—all day long.

The 1970½ Corvette taught some meaningful handling lessons to four or five attending journalists. For years now they have denounced Detroit iron for excessive understeer: the tendency of a car to plow rather than spin. The 'Vette doesn't have much; it is nearer to neutral than not. The machine is just excellent, even in the tight stuff, but if you nail it too quickly out of a turn, the world starts circling. If you are prudent, and back off, the 'Vette straightens out; if you are not, it stays in orbit. It's a most obedient and forgiving servant.

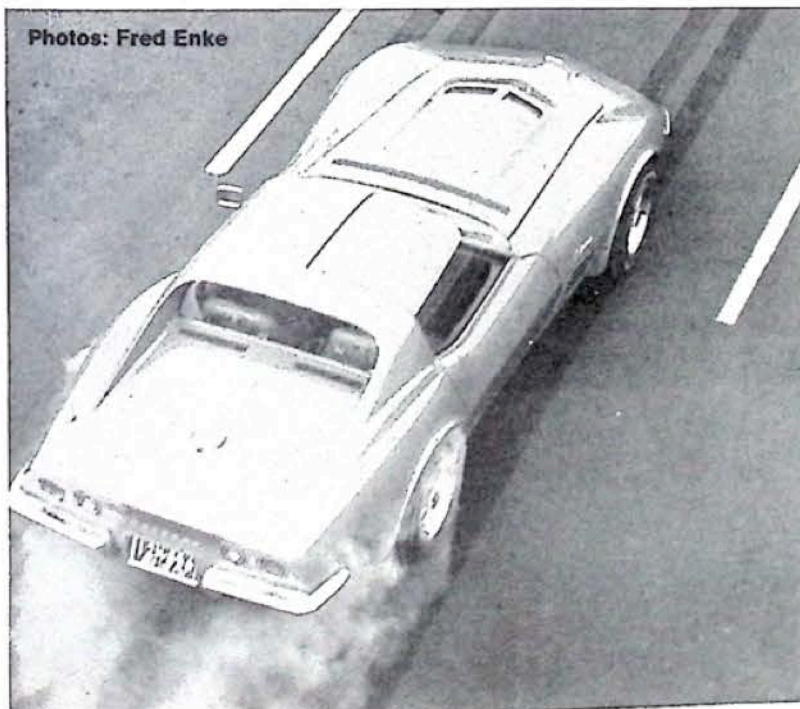
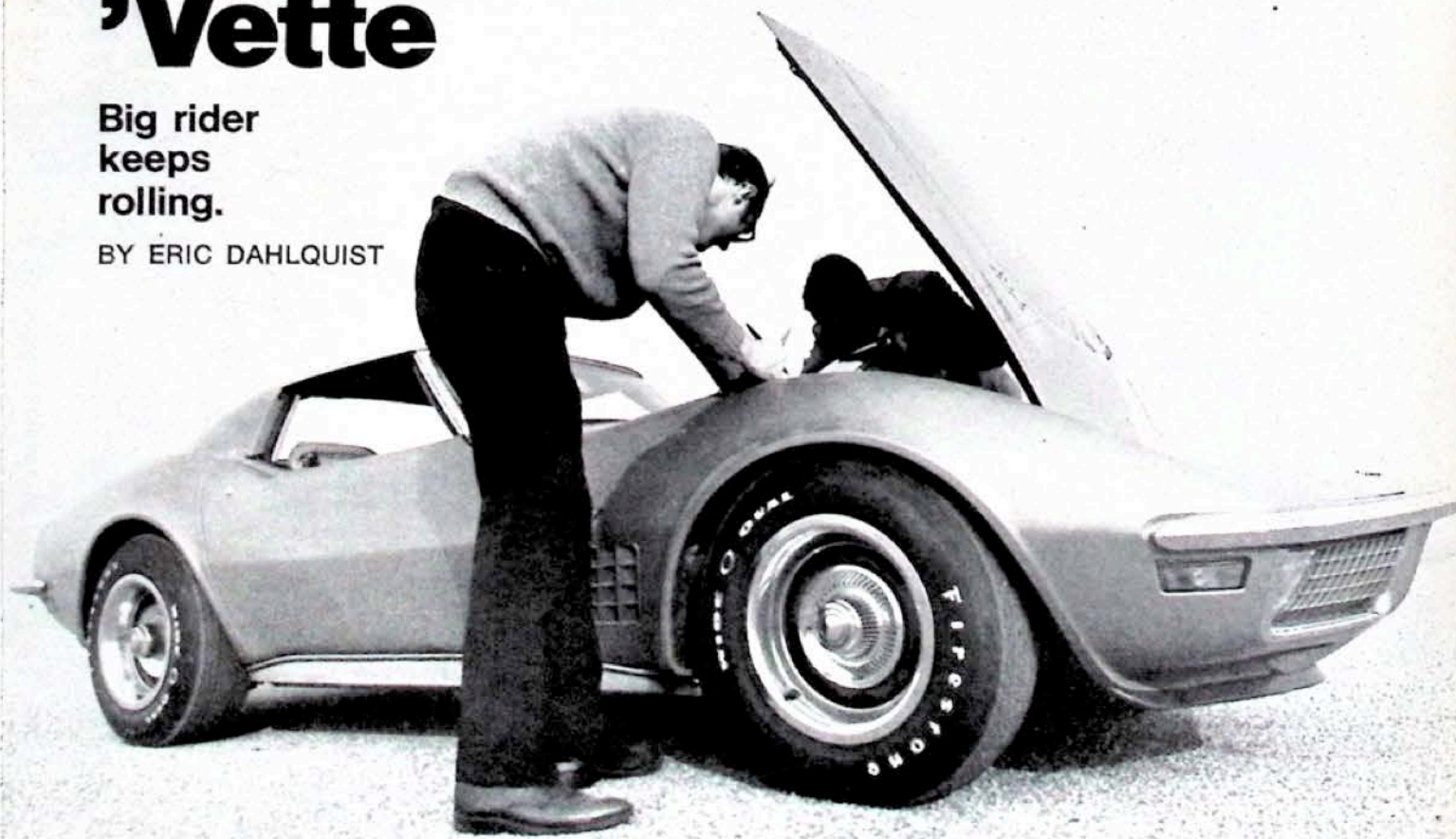
Once you had made a few laps, gotten settled into the groove, there was this urge to simply drive the beast across the infield, out the front gate and cut out. You could see yourself in your mind's eye—letting the inertia-reel harness take up a notch, moving the steering wheel in a hair, dialing the stereo, and heading for 'Vegas at a steady hundred, kicking up little dust whirls as you go.

/MT

# The 1970 'Vette

Big rider keeps rolling.

BY ERIC DAHLQUIST



Corvette's trick-of-the-month is right out of racer-land, a genuine dual-disc clutch. With double the friction area, pressure-plate has lower tension springs minimizing pedal effort, increasing life and providing excellent pedal modulation.



New 'Vette innards (above), are of true GT luxury. Gib Hufstader (below, right), tells us of the super big 454.





Marathon winner, Andrew Cowan, test drove his Hillman Hunter (above) on a farm in Scotland, claiming it was good practice for roads in Turkey and Australia. Bill Bengry Ford Cortina was the first car off the line at London (right). Idea for race was conceived in a pub and became a reality as cars headed up ramp at start (middle). In the shadow of historic Big Ben, Car No. 18, Ford Cortina driven by M. Greenwood leads (far right) a Moskvitch 408 driven by S. Tenishev of the Soviet Union.



The first London - Sydney Marathon started with a bang. In fact, it started with Chitty-Chitty-Bang-Bang. Graham Hill was at the wheel, but he had no intentions whatsoever of leaving the grounds of London's Crystal Palace. "Not bloody likely," he laughed when an Australian driver asked him if he were going all the way.

"Thank God!" the Aussie exclaimed fervently. "That gives some of us other blokes a chance."

He was quite right. All the other blokes had to do was drive 10,000 miles in 10 days. Whoever got to Sydney first and with the least penalty points would win the 10-thousand-pound (24-thousand-dollar) prize. That's all there was to it.

But anyone who believed that had a whole series of loose nuts. It was winter in England and summer in Australia. Between the two seasons lay snow-capped mountains and dust dry deserts, wide highways and bush tracks peppered with jillions of large, medium-large, and extra-large potholes. There was also monotony, anger, fatigue, and wild excitement. Broken bones, broken axles, and broken hopes. Obtuse policemen, bored immigration officers, bounding kangaroos, and playful Turkish children who could put a rock through a windshield at 20 yards. Laughter, tears, mud, sweat, blood, and low-octane fuel. It was all there. All the contestants had to do was drive through it, reach Sydney first and collect the 24 thousand dollars.

The crew was as diverse as the cars they were driving. "Except for the ladies, we're a motley looking bunch," is the way Australian "Gelignite Jack" Murray described it. The cars ranged from a 1930 Bentley touring convertible to the latest thing off the production line. The crews included Japanese who seldom stopped smiling and Russians who never smiled and never strayed far from their four Moskvitches. English, Germans, Poles, Australians, Finns, a lone American, and a few other nationalities were also there.

The sun was shining on the morning of November 24, 1968 when the 98 cars and crews left London to catch the ferry across the channel to France. The first mishap occurred inside the grounds of the Crystal Palace. A driver turned to wave good-bye to his wife and crumpled a fender against a cement pillar.

# THE LONDON-SYDNEY MARATHON

*It's a long, hard drive from London Town to the capital of Down Under, and the unexpected has to be expected*

by ELWOOD BAUMANN

A friendly traffic policeman was responsible for the next incident. Seeing the German license plates on the Porsche driven by John Hunter and Terry Davenport, he flagged them to a halt. "Das Porsche ist gut Auto, nicht wahr?" he declared.

"We're in the London - Sydney Marathon, you silly \_\_\_\_\_!" Davenport yelled, pointing to the array of decals on his car. "We're in a hurry!"

The policeman was delighted to learn that the men spoke such idiomatic English. It wasn't until Davenport threw out a few more graphic epithets that he realized that the two were British. Strong language was also used that night on the approach to Paris. Patches of fog would suddenly hide the road and bring traffic almost to a standstill. Most of the Australians had never seen fog before and they held President De Gaulle personally accountable.

A British crew also had trouble. The driver got confused in his directions and found himself hopelessly lost in the center of Paris. "I say," he began, sticking his bearded face out the window, "can you . . ."

The girl hesitated, looked at the luxurious beard, and in an unmistakably American accent, snapped, "Get lost!" "I already am, you know," the Britisher called after her. *continued*



Compared to what they would have to face later, the run from Paris to Istanbul was a piece of cake. There were, of course, some minor catastrophes. The co-driver of the open Bentley lost his arctic survival suit overboard. "I know I'll freeze to death in the mountains of Afghanistan," he shivered, "but it's Sydney or bust." Unfortunately, it

was bust. The driver stopped the car on the shoulder of a road in Turkey. The shoulder collapsed and the beautiful old convertible dropped 30 feet. Others, too, had their troubles. In Turin, a jovial Italian charged Swedish rally drivers Gunnar Palm and Bengt Soderstrom \$250 for a tiny cogwheel they had been unable to find

elsewhere. A clerk in a motel lost the passports of one crew. Another crew left their passports, money, and logbook on the desk in a filling station. A Vauxhall Ventura left the road at 90 mph and rolled over three times. The driver had flicked a cigarette out the window, but it blew back into his face. He hasn't smoked a cigarette since.



Ian Bryson knocked down a cyclist while inching his way through a village. The policeman waved the automobile on and beat the cyclist over the head with a big cane for getting in the way.



Indian tribesmen look down on the shattered shell of R. Rogers-driven Ford Cortina No. 96 now surrounded by heaps of equipment.



Aussie drivers predicted roads in Australia would knock out 50 percent of cars; they didn't, but tried hard (top photo). On famous Truck Road in the Khyber Pass, a Citroen 21 and Mercedes 280 (above) speed past sometimes friendly tribesmen. After 10 days and 10,000 miles Cowan crosses finish line.



Turkey was a horror of sleet, snow, cold, mud, bad gas, and a number of other horrors. Nick Brittan jokingly said, "Seventy-four percent of all Turkish males over the age of 18 drive trucks. Of these, 63 percent drive them 24 hours a day and a further 58 percent travel with unsafe loads at high speeds on bald tires. Apart from this, there is little else on the road except horses, camels, goats, sheep, Turks, and more trucks." Nick spoke from sad experience. He and his pretty Australian wife clobbered a Turkish horse at 80 mph. It was a Turkish truck, however, that put them out of the marathon.

But it was a bit more complicated than that. The law of the land stated that no car could be moved after an accident until a policeman had made a report and a sketch. The policeman duly arrived—on foot. The accident didn't seem to interest him, but he took Nick's passport and sauntered off. "He left me feeling a bit stateless," stated Nick. Nick got his passport back after spending 36 hours in police stations and \$27 in bribes.

The Japanese stopped smiling momentarily when a group of laughing Turkish children put some rocks through the windshield of their Vauxhall Viva. They were unable to find a proper replacement, so they bought one for a different make of car, hand-honed it down to size, and went smiling on their way.

Incredibly, only three drivers landed in Turkish hospitals. Doug Morris was injured when the jack slipped while he was working under the car. Patrick Lindsay broke his shoulder when the shoulder of the road collapsed under the Bentley, and poor Graham White fell down a pit in Sivas while looking for the men's comfort station.

Far more casualties were suffered by

of Afghanistan was the fabled Khyber Pass. Everyone zipped through without incident except the three Australian girls in the Morris 1100 sponsored by the Sydney Daily Telegraph. The girls claimed that they had been ambushed by bandits on a particularly lonely stretch of road. "What scared them off?" one of their more ungentlemanly countrymen inquired cynically. "Your faces or your grammar?"

After crossing the Pakistan-India border, the drivers encountered some new hazards: millions and millions of Indians. "They were everywhere," said a disgruntled Englishman. "They were so fascinated by the cars that they jammed the roads solid and refused to move. Kids climbed all over us and we had to shake them off as gently as possible." Other hazards in India were camel trains, pony tongas, bullock carts, tricycle rickshaws, and holy cows.

The Indian police had been instructed to assist the marathon drivers in every way and they did their best. Ian Bryson knocked down a cyclist while inching his way through a village. The policeman waved the car on and beat the cyclist over the head with a cane for getting in the way. Another car collided with an army truck. The Indian driver was immediately thrown into the jailhouse; the Englishmen were rushed to the hospital where the local maharaja attended to them personally. Two Frenchmen who crashed in the bandit country of Gwalior state were evacuated by police helicopter.

Seventy-two of the ninety-eight cars which had left London 7 days earlier completed the 7,000-mile trip to Bombay. Roger Clark and Ove Andersson in a Ford Lotus Cortina were leading the marathon and received a check for \$4,800. "It's all yours, Ove," Roger told the Swede, sticking the check into his

co-driver's pocket. "I can't afford to pay any more income tax this year."

It was in Bombay that a newspaper article furnished the drivers with the best laugh of the marathon. "What happened to Gunnar Palm, the Swedish rally driver?" an Indian reporter asked Ken Tubman.

"Gunnar Palm," said Tubman. "Oh, he and Bengt Soderstrom retired in Turkey."

The next day, the newspaper informed the reading public that Gunnar Palm had retired from the rally in Turkey with a badly bent soderstrom.

After a week of living in a speeding car, the voyage from India to Australia was a wonderfully relaxing tonic. Even those suffering from "Bombay Belly" and seasickness were able to enjoy and themselves. Unfortunately, there was one casualty on the voyage: Sid Dickson, the only American entered in the marathon, broke his little toe playing deck tennis. "I practically knocked down a house in Turkey with my Rambler and didn't even get scratched," he mourned, "and now I go out and do something like this."

The Aussies kept themselves busy on board ship. Their object was to completely demoralize the European drivers. "None of you blokes will get more than half way to Sydney," promised "Gelignite Jack" Murray. "What you went through in Turkey was nothing. Just wait until you try the Nullabar. If the heat and dust don't get you, the 'roos will." Ironically, the first car to smash into a kangaroo was being driven by "Gelignite Jack" Murray. "Treasonous bloody beast!" he lamented.

The Nullabar Desert and the Flinders Range exacted a heavy toll. In the wake of the drivers lay broken springs and axles, useless shock absorbers, ruined tires, shredded tubes, and more than one dead kangaroo.

Roger Clark, who in his Lotus Cortina had been leading the Marathon since Turkey, seemed to be plagued in Australia. After cratering his steering in the desert, he burnt out a valve when over 70 percent of the way across the Down Under continent. Then, less than 250 miles from Sydney and only 2 minutes behind leading driver Belgian Lucien Bianchi's Citroën, Roger fell out of the running with a broken rear axle. "I'm a bit disappointed," he admitted.

Nothing, it seemed, could now stop Lucien Bianchi. He had been driving his Citroën magnificently for 10 days and 10,000 miles. Sydney was now less than 100 miles away. His lead was a comfortable one. The road was in excellent condition and he could relax. Unless something entirely unforeseen happened, victory and the \$24,000 prize were assured. But the unforeseen did happen! Lucien and his co-driver, Jean-Claud Ogier, were cruising along at an easy 50 miles per hour when a Mini came hurtling toward them, weaving crazily from one side of the road to the other. The two cars hit head-on.

Rescue teams had to cut Bianchi out of the smashed Citroën.

The lead now belonged to Andrew Cowan, a 31-year-old Scotch farmer driving a Hillman Hunter. Steadily and unobtrusively, Andy and Brian Coyle, his co-driver and brother-in-law, had worked their way up to the line of front runners. They had been in second place, behind by only 3 minutes, when Bianchi had crashed.

Early in the afternoon of December 17, Cowan drove his Hillman Hunter across the finishing line. The first London-Sydney Marathon was over, but there would be more. Because of world interest, the London Daily Express and the Sydney Daily Telegraph had decided to sponsor another one in 1972 and thereafter in Olympic years.

The great majority of drivers, however, believe that one should be held at least every second year. The sponsors still haven't agreed to this, but there may be a ray of hope. "I sure don't want to have to wait four more years before I can win the bloody thing," "Gelignite Jack" complained to his Aussie coppers.

/MT





"In effect, we sold, or the non-profit corporation, which is actually building the track and leasing it to us, sold \$25.5 million worth of tax-exempt bonds to the general public."



"At least 85 percent of the road racing circuit can be seen from any vantage point in the main grandstand sections which extend nearly a mile along the south side of the track."

What kind of a man does it take to spearhead the organization, construction, and ultimate operation of a speedway destined to be the world's largest, most modern, and famous? He's David B. Lockton, an enterprising 33-year-old Indianapolis attorney who serves as President and operating head of Ontario Motor Speedway.

Despite his young age, Lockton imparts the self-assurance and poise of an efficient top-level executive. His office swarms with colorful illustrations, plans, and schedules of various installations to be constructed within the vast stadium, reflecting the complexities of his demanding role as operations chief. Although he's "under the gun," with the speedway's opening only a few months away, talking with Dave reveals a calm, considerate individual whose warmth of personality is matched only by his provident evaluation of the speedway's many features, construction progress, and forthcoming schedule. When asked about the speedway, its long-range influence on auto sports, he confidently replies with "... it is the most unique showcase for auto racing ever devised, a vitally important contribution to auto racing's future as a true professional, big-league sport of international importance and popularity."

Instrumental in putting the final Ontario Motor Speedway project together some two years ago, Lockton brings to the stadium an impressive auto sports background; he is also the executive vice president and part owner of Sports Headliners, Inc., an Indianapolis firm that serves as exclusive agent and manager for many of the nation's top race drivers and athletes. He also is a director of the United States Auto Club (USAC), and has interests in Kline Volkswagen/Porsche, Inc., of Indian-

my own, investigated with Stolte Construction Co. the possibility of reconstructing the old project. That was about September of 1967. Some 18 months later - July 9, 1968 - we financed the project.

MT: There were previous attempts at this same location, weren't there?

Lockton: Right at this specific site. There were two groups: major corporations attempted it. I have since talked with representatives of both of those groups. They said that they've always felt that the project was viable and feasible, but due to one problem or another, whether it was the bond market or the availability of an operator who had a background in automobile racing, they just couldn't put it together.

MT: Who are the other principals involved today?

Lockton: The chairman of the board is Dan Lufkin who is also chairman of the board of Donaldson-Lufkin-Jenrette, one of Wall Street's leading firms: a true innovator in finance and leisure-time sports/activities. On our board there is also J.C. Agajanian who is well known as one of the outstanding promoters of automobile racing. Chuck Barnes, president of, and my partner in, Sports Headliners, the organization that really is involved in the money aspects of automobile racing... behind the scenes money. Briggs Cunningham is extremely helpful and active; we hope to feature part of his outstanding automobile collection in our museum at OMS. Bill Looz, vice president of Stolte Construction Co., not only contractors but stockholders as well. Kirk Douglas is deeply involved and very enthusiastic; he's a new fan of automobile racing, but has good ideas on the promotion and p.r. for the track, and he's helping on the national decathlon of safe driving that

costs in the bond issue are the funding of reserves to pay interest on bonds during construction. In other words, it's a \$25.5 million project, not including the investment of the operator, which is about \$5 million for operating capital, promotion, advertising, etc.

MT: The land value is \$6 million?

Lockton: Yes, very expensive land, but it sits right on the freeway, and we felt that you had to have property like this with the access to the population in order to draw the crowds to justify this size a project.

MT: How large is Ontario Motor Speedway; that is, we know it's 700 acres, all inclusive, but by comparison with other installations?

Lockton: Exclusive of our parking areas, outside the track, Ontario Speedway, inside the road course, would hold Disneyland's complete amusement park 2 1/2 times.

MT: What is the track's total capacity? Grandstand seating, parking; what are some of those figures?

Lockton: The total seating capacity, the first year at least, will be 140,000 reserved seats; 85,000 permanent grandstands and the rest in temporary bleachers which we lease. We will be able to put an unlimited number of people in the infield, because unlike Indianapolis, for example, there will be no car parking in the infield. The capacity for our first race, I feel, will be around 200,000 people. We can park 55,000 cars on our own property. If we get more than 200,000 people, we're going to have trouble getting them off the freeway our first year. But I'm confident we can handle the 200,000 crowd very efficiently.

MT: What about the parking? Is it all outside the track?

Lockton: It's all around the outside of the track, on our own property. We have 70 percent paved lots and the rest are turf.

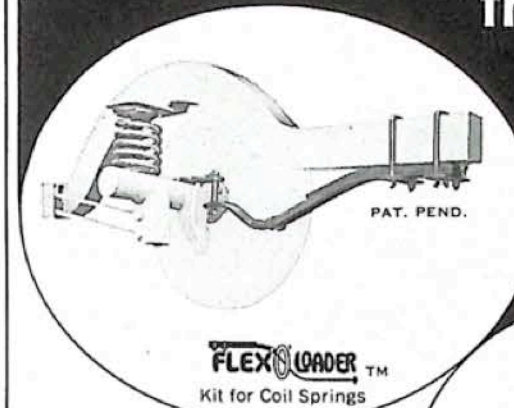
MT: What are some of the features, the special features?

Lockton: Safety, sight lines, and creature comforts. We have a safety designed track, no matter the type of racing. Since there is no parking in the infield, and because of design, 100 percent viewing is possible for all grandstand spectators. At least 85 percent of the road racing circuit can be seen from any vantage point in the main grandstand sections which extend for nearly a mile along the south side of the course. Our most appealing attraction to race-goers is the fact that OMS is a spectator-oriented facility, offering an air-conditioned restaurant and lounge, luxurious suites, club seating, and other comforts common to new stadia built for other major league sports, but uncommon to auto racing.

MT: What is the Victory Circle Club we've heard about? Something new?

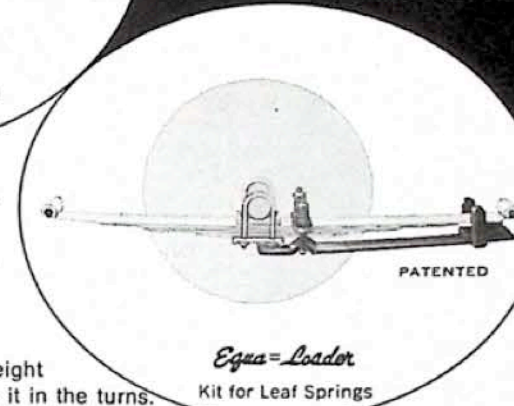
Lockton: It's a very elegant club, in which 5,000 memberships will be sold. A season ticket is \$250 for membership which provides a reserved seat, access to the private restaurant, bar, and special parking. We also have 11 VIP stadium suites, 30 x 30 rooms, which are leased at \$30,000 per year. We only have

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continued

### MOTOR TREND INTERVIEW:

## David Lockton

One of the men who will lead racing into it's golden age.

apolis. All in addition to maintaining his Indianapolis law practice.

Here, in an exclusive Motor Trend interview, Lockton comments on Ontario Motor Speedway, its "space age" features and how it will contribute to the accelerated growth of auto racing sports.

— Dick Wells

MT: Dave, how did you, a successful attorney, happen to become involved with Ontario Motor Speedway?

Lockton: The Ontario Motor Speedway project was brought to my attention by the investment banking house of Donaldson-Lufkin-Jenrette, Inc. They were familiar with my involvement in automobile racing through Sports Headliners and as the lawyer for some drivers. The OMS feasibility studies were presented to Donaldson-Lufkin-Jenrette, who took an interest, then forwarded the materials to me for consideration. I read the studies, learned that the facility had been attempted twice before with no success, and on

we have planned, and things like that. Parnelli Jones, Roger Penske, and Dick Smothers each bring an expertise from different, varied backgrounds of automobile racing. Of course, Rodger Ward, as our director of public relations, gives us good access to the enthusiast market. All of our directors are extremely active and give us a lot of help.

MT: How was the speedway financed?

Lockton: The facility was financed by a rather unique quasi-municipal bond issue. In effect, we sold, or the non-profit corporation, which is actually building the track and leasing it to us, sold \$25.5 million worth of tax-exempt bonds to the general public. It was a firm underwriting, so on July 9 we received a check from the underwriters for \$25.5 million, and we proceeded to build the project; they then began the sale of bonds to the public.

MT: What will be the total cost of the track, the total investment?

Lockton: The facility itself cost about \$14 million. We paid about \$6 million for some 700 acres of land. The other



"I would predict that in 3 years automobile racing will be the second largest sport on television as far as total dollars invested. I don't say that idly..."

four left. They have swivel seats out in front of them, closed circuit television, and each suite lessee gets 50 passes per race. The operation and the decoration of the suites is entirely up to the lessee; most will be super-plush, with bars, etc. MT: Where are these facilities located? Lockton: A five-story central activities building, which overlooks the start/finish line and pit area, will house the Victory Circle Club, restaurant, lounge, administrative offices, control headquarters for racing officials, and modern facilities for all branches of the news media. The building is about the length of a football field, five stories high, with elevator service for press and officials which leads down to a tunnel beneath the track, providing uninterrupted access from the building to the pit and garage areas. MT: What is the schedule at OMS as it stands now?

Lockton: Right now, as you know, our hope and our concept is to stage four major races during a racing season, each one of a different type, and ideally each one sanctioned by one of the four major sanctioning bodies. So, proceeding with those guidelines, we have a written 10-year agreement with USAC for the California 500, an Indianapolis Championship car race with a purse which will rival Indianapolis and with a crowd that will also rival Indy. That's September 6, 1970, or the Sunday of Labor Day weekend. Our second event in 1970 is the NHRA Supernationals which will be November 21 and 22. In terms of purse, and hopefully spectator attendance, it will be NHRA's largest event. It will be an invitational, similar to the Masters Golf Tournament, and will feature all of NHRA's superstars, as well as the largest guaranteed purse; we think the purse will approach \$300,000 by race-time.

MT: What about NASCAR? Lockton: We just reached an agreement this week with NASCAR for a Grand National 500 race which will follow the Daytona 500 by two weeks. In 1971, which will be the first year of that race, it will be the 28th of February. This is a great date, because it gives us a chance to capitalize on the national publicity of the Daytona event, and it allows the drivers plenty of time to tow out here after Daytona with no racing in between.

MT: Has there been any conflict with NASCAR?

Lockton: I think initially because I was a director of USAC, and because I represented through Sports Headliners, as well as personally, many USAC drivers, and because our first race is a USAC race, there was a feeling that this was a USAC track. It took some time to convince all of the sanctioning bodies that we are an independent organization interested in doing business with anyone who has a good product to offer. I would say, yes, initially there was some problem with NASCAR, but now there is no problem. This is reflected in the fact that we just reached an agreement with them.

MT: What about scheduling conflicts? The California 500 on Labor Day weekend. Is that going to allow car owners and drivers enough time, following the

Indianapolis race on Memorial Day? Lockton: The Indianapolis race is on Memorial Day, May 30; our event is on Labor Day weekend, September 6, 90 days away. We already are aware of the fact that some car owners and drivers are going to be building cars aimed at our race rather than Indianapolis. Traditionally, the new equipment is brought out during the month of May; now some of them will try to get the jump and build cars for our race, and not break out that equipment until after the Indy 500. MT: Has anyone specifically indicated that?

Lockton: There are several car owners that we've talked with who will be preparing one car for Indianapolis, and be developing one that will be ready for our race.

MT: Any names? Lockton: Parnelli Jones, who is one of our directors, is thinking along these lines; Roger Penske, also involved with OMS, realized the importance of building a car for this race specifically.

MT: When will cars actually first go onto the track, for testing?

Lockton: In early March we'll probably have the first cars on the track to actually begin speed testing. Also, there's a very good chance — although not finalized — that we'll have a race between top-name celebrities (motion picture and television stars) as a race to dedicate the opening of the track.

MT: Will all of the tracks be completed by March 9, and what are the dimensions of them?

Lockton: Yes, we're confident at this time [mid-January] that our completion target dates will be met. Ontario Motor Speedway features three tracks; the oval is a 2.5-mile installation with a 3300-foot-long straight length. The Grand Prix or road race track is 3.194 miles, with 20 turns of varying slopes, length, width, and radii; and the drag strip is the standard 1,320 feet, with an additional 2,030-foot runout, 60 feet wide.

MT: Is Ontario Motor Speedway affiliated with any television network, such as TVS, and will the California 500 be covered on television?

Lockton: We're coming down to a decision to go or not to go on television. At this point it appears as if we will have live TV broadcasts, because TV offers many possibilities to the long-term revenues for the speedway. How we will arrange for TV broadcasts has not yet been determined. We are one of the only tracks — I think Indianapolis is the only other one — that has retained its own negotiating rights and its own television rights, so we have the ability to go in any direction we want. We have no agreement with TVS for our 500; we may go with them, or another major network, or we may start our own syndicated network.

MT: What exactly is TVS; how do they operate?

Lockton: TVS is very similar to Hughes Sports Network, in that it's a more or less privately syndicated network of independent stations which subscribe to various events. The backbone of TVS, which is owned by Eddy Einhorn, is

the NCAA basketball games, but he has put together a network of some 190 stations, I think, to cover USAC racing next year. With that exposure for championship car racing, a very strong argument is presented to us: we should be kind of the "super bowl" at the end of the racing season/program.

MT: What are your personal thoughts on television coverage to date in auto racing?

Lockton: Everyone would agree that the status of the art right now, as far as TV coverage of automobile racing goes, is very poor. This is to be expected. If we were to get out an old video tape of a pro football game of, say, 10 years ago, we probably wouldn't believe how bad it looks. There are not very many cameramen, or very many directors, who have had enough experience with live automobile racing, where you're really on the spot, to bring about the innovations that have developed over a long period of time with football. So I think that with each successive year we're going to see better and better coverage of automobile racing. But we have to face it: we're just beginning to get into it now and it's pretty bad.

MT: Do you think that auto racing will eventually reach the status of NFL/AFL in television coverage as we know it today, because of the money it would bring into the sport?

Lockton: I don't think that we'll ever reach the total dollar volume that NFL/AFL football has from television, simply because I think that has already gone a bit beyond realistic figures. I would predict that in 3 years automobile racing will be the second largest sport on television as far as total dollars invested. I don't say that idly; I think some of the networks and some of the people in the business not only feel the same way, but they're predicting it, too.

MT: About auto racing itself, and the tracks. Where do you think the money is eventually going to come from, if not TV? Manufacturer sponsorships are becoming strained, and some companies have withdrawn from racing due to heavy investments which they contend cannot be justified. How do you think that will all work out?

Lockton: I think it's going to work out for the best. The sport, it is well known, has been subsidized by the manufacturers that are directly involved because of their products. This creates a lot of problems for the sport. As they tend to withdraw, however, because they feel their expenditures are getting rather out of hand, we're finding that new companies — not really automotive companies — that have never had an interest are picking up the tab, and I think we're seeing a smooth, gradual progression of new non-automotive firms coming in and taking a close look at automobile racing. Take the two toy companies, for example; Mattel who is going to work with us, and Topper Toys, involved with our drivers through Sports Headliners. The tobacco companies, the soft drink companies — consumer-product-oriented firms — are all interested in auto sports because of the demographics. It's a way for them to reach the market they're after, the af-

fluent youth market. So I think we're going to have a healthy progression here, and that the total investment and support of auto racing will be the same or grow. But it will be on a better basis because you won't have people who control the sport so much.

MT: In review of the races; you have the USAC 500, the NASCAR Grand National stock car race, and the NHRA Supernationals. What about the fourth race?

Lockton: We would like to complete our racing schedule with a major road event. Chronologically, this will be our fourth event. And it's also the one that we still have "up in the air." We are talking obviously to Sports Car Club of America, and we are not in a hurry, nor are they, to jump at this point into naming the kind of event, because of all the aspects of automobile racing, road racing is undergoing the most dramatic change. It's hard to say in early 1970 which will be the best race for spring of 1971: whether Trans-Am or Can-Am or Formula I... or something we haven't even heard about yet. In other words, an event that will draw in excess of 100,000 people. We don't want to make a mistake, neither does SCCA, so we're proceeding with caution. I do feel that we will come up with a major event that might be unique; it could be that we will create our own Ontario Motor Speedway Classic of some sort, which would be an invitational event. We're thinking very seriously about that.

MT: Because of operational costs in a facility of this size, you'll probably have to stay away from anything but a major event. Or are you considering other types of racing?

Lockton: We don't want to "over race" the facility. That's our primary concern. But we're not totally committed to just four races. If we could be shown that a motorcycle race, for example, or some other kind of race, would not detract from the potential revenues of the other four, then we'd take a good, hard look at it. We also intend to let the amateur groups use our facilities for their various club racing, as long as we don't have an expense involved in overhead. We're only limiting our major promotions to those races which have a potential attraction in excess of 100,000 people.

MT: What are some of the other track uses in your program; have any test programs been set up, such as with police agencies, during off-racing periods?

Lockton: Yes. We're heavily involved in that now. As a matter of fact, we hope to make, number one, this facility into a year-'round tourist attraction, with a Hall of Fame, rides around the track, tours of the VIP suites, viewing of testing, special recreational rides, and things like that. In addition to that we have a long list of promotional and testing uses, including the national safe-driving contests, high-speed equipment testing, and, of course, the traditional race car and tire-testing programs.

MT: Is there going to be a driving school? Lockton: We probably will have a driving school, and we'll want to combine that with the tourist attraction features.

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this and other special projects.

MT: Does Riverside Raceway, due to its close location, pose a problem?

Lockton: I've long thought that Ontario Motor Speedway would be beneficial to Riverside Raceway, because we'll create new fans. We only intend to have one, or possibly two at the most, road races a year, and Riverside's obviously a road racing facility, so I don't think we're knocking heads that much. If we can induce people to become race fans through our promotions, and because of the accessibility of our facility, I think they're going to want to see more races possibly than we have to offer. Some people involved with Riverside disagree with that, and it is hard at this time to say what will happen. We obviously didn't build our track with any intention of hurting Riverside, and we've not gone about promoting our races in that way. I hope they survive and prosper.

MT: What are your thoughts on other tracks; that is, the Michigan International Speedway and other ARI installations, the fact that they're buying or building a "network" of tracks throughout the country?

Lockton: Our attitude toward the building of other major race tracks is the same as the Indianapolis Motor Speedway's attitude toward us. This sport, if it's going to be the sport of the seventies, and going to go into the major leagues, has to have major league facilities, and we don't want to be the only ball game in town. The bigger and better they build tracks in other parts of the country, the more the sport is going to be helped. It's going to help us in television; it's going to help expose the sport, create new fans, and we're all for it. We want to see all of the tracks successful... and they want to see us successful.

MT: What are some of Ontario's expansion plans? If you prove successful with this operation, will you build/open other tracks?

Lockton: Our expansion plans initially will be internally directed; we'll probably expand and improve our existing facility, adding more permanent stands, etc. If the opportunity came up and we had the cash flow to justify investing in other race courses, in other parts of the U.S., we might consider it, but at this time we think we've got a good enough project that stands on its own and it's a little premature to think about other, additional tracks.

MT: Would expansion plans by any chance include other sports, apart from auto racing?

Lockton: The principal owners of Ontario Motor Speedway are also involved in other leisure-time companies, and I think that whether or not we use this track as a vehicle to do that, we are all interested in other types of leisure-time sports. We're a sports-minded group.

MT: What about advertising and promotion? Will Ontario handle this any differently than other tracks?

Lockton: Yes, I would say so, in that our plans are probably a little bit more elaborate than other tracks because of the kind of crowd that we're going to have to draw. Indianapolis has 50 years

continued

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of history to sell out its races; we don't. So we're undergoing an education program out here with our own in-house public relations people. This, I think, will be much greater in our first year than it will be in subsequent years if we're successful, because we'll have introduced the races and the track and we won't have to be that elaborate. It's very important at this time to tell people that we're here. I think so far we're doing a pretty good job: Our ticket sales without any real paid advertising are fairly substantial, approaching \$375,000. They'll have to pick up considerably, of course, to sell out, but this is encouraging because we haven't invested that much money in paid advertising at this point on the California 500.

**MT:** Do you know yet how your advertising and promotion plans will stimulate continued interest, after the newness of the track wears off?

**Lockton:** I think once we get a fan to the track and give him a good show, he's a fan and he's going to buy tickets next year. If we do our job right, and racing grows as we hope it will, in 3 years we'll have a situation similar to Indianapolis. Remember, too, that Ontario Motor Speedway is a totally new concept in another way: it is modern, with only the finest in creature-comfort accommodations. The features of the track are really uncommon to racing; I think people will be anxious to return to see more races after their first visit.

**MT:** What are some of Ontario's other special features, as a super track, such

as the efficiency of the sound system? **Lockton:** We'll have the most powerful public address system ever built in the U.S. It turns out 28,000 watts as compared to 20,000 at Cape Kennedy and 14,000 at Indianapolis Motor Speedway. It includes 450 speakers and 3.7 million feet of wiring. We're using a new type of speaker which has been tested at Indianapolis, specifically designed to penetrate through and overcome the noise of racing automobiles. That's an innovation in itself. But we're not relying on a super sound system alone; we hope to have a scoring system which will be as "space age" as the public address installation.

**MT:** On the subject of sound, will you have a professional announcer to call the races, such as Indy's Sid Collins? **Lockton:** We do plan to put together a team of announcers, using West Coast personalities. If they're good, and our races are efficiently exposed, you might say, they'd become permanently identified. I think this is a real plus. I've noticed that when you're watching some of the races that they do on TV, they have really great professional announcers who have been schooled over the years to remain calm in talking about football and other kinds of sports. It's just incongruous to see a wheel going over a fence, or a car spinning, and the man saying something as if he were witnessing an afternoon tea: "Well, look at that spin over there." I think a lot more excitement can be injected into the TV broadcast, as well as over the

public address system to the crowd. **MT:** What about communications apart from the sound system: anything different, more advanced?

**Lockton:** In almost every area we've taken the best that's been available, because we've had the opportunity to examine, with the cooperation of all the other tracks, what they're doing, to come up with something that's a little more advanced. As an example, on the road course, instead of flagmen we'll use signal lights. The flagman will simply hit a button to turn on the yellows in his own corner, without turning them on elsewhere. This can be overridden by the chief steward from the tower. So we'll have an advanced communications system throughout the facility.

**MT:** Earlier you mentioned a type of scoreboard. Is this going to be a computerized system?

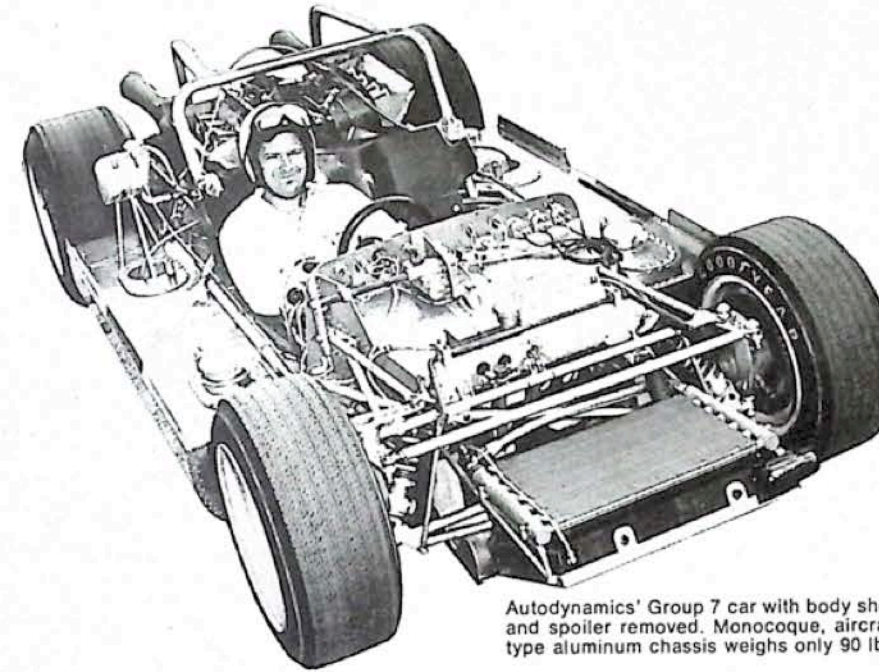
**Lockton:** We have been built for us right now by Conrac a scoring system which will utilize "little black boxes" in the cars, and automatically pick up their position, then feed it into a computer—and in real time display on a scoring pylon the position of the first 10 cars and the race's average speed.

**MT:** The pickup is right in the car?

**Lockton:** The sending system is in the car; the receiving system is built underneath the track at the start/finish line. It will be a three-pylon system; a three-sided pylon which will give instant results. We feel that after a year of using this computer we can prove to sanction-

*continued on page 104*

## Ray Caldwell talks to Alcoa about Autodynamics. Its cars, factory and racing team. And, incidentally, about aluminum.



Autodynamics' Group 7 car with body shell and spoiler removed. Monocoque, aircraft-type aluminum chassis weighs only 90 lb.

A picturesque, nineteenth-century New England village is not the place you'd expect to find one of the world's largest racing car factories. But Marblehead, Massachusetts is such a place, and the Autodynamics Corporation is such a factory.

Here's what founder Ray Caldwell told Alcoa about Autodynamics. "Counting on the increasing popularity of Formula V racers (based on standard VW parts), I built one in my garage in 1963 and ran a little ad. When I got swamped with 1,300 replies, I decided to go into the business.

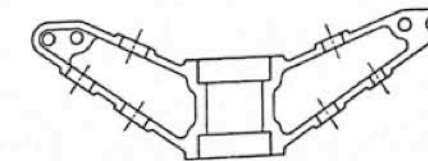
"Since 1964, we've built over 1,000 competition cars. We have over 10,000 sq ft of working space and a payroll of 30 very qualified guys. After all, someone's life may depend on their product.

"In addition to Formula V's, we're now building Formula Fords. They're larger and faster and use a Ford Cortina engine. We also build dune buggies with both rear and mid-engines, and race prep VW and Cortina engines for other people's cars.

"I used to race myself. In 1964, I was national champion Formula V class driver. Later, I drove larger cars. I've quit driving competitively, but it helps to know how a driver feels in a race.

"We also have a racing team. Winning races helps sell cars. For the past couple of years, we raced a big Group 7 car. This year we're concentrating on winning the USSRC Continental Series championship with a Formula A car.

"I think the days of designing race cars on the garage floor in chalk are over. Now they're sophisticated, highly engineered machines. For instance, we use all the aluminum we can. In the right alloy and application, it's stronger than steel, considerably lighter and gives you a higher section modulus.



Hub carrier for Formula Ford racer is cast in 55,000 psi alloy.



Water expansion tank for Cortina engine is 3½-in. aluminum tubing with ends capped.

"Take our Group 7 car. It's almost all aluminum. But it's incredibly strong and has great impact resistance. The Chevrolet 427 engine is aluminum. So are the oil cooler, dashboard, transmission case, brake calipers, spun wheels and even the shocks. Our Formula A car also has an aluminum monocoque chassis. And a lot of other aluminum applications. "The first thing we do to all our cars is put in aluminum radiators. That saves around 20 lb of weight in the front end. Our roll bars are 6061 aluminum in the T-6 temper. They're strong as steel at one-third the weight. We also use a lot of aluminum castings. Very strong, very light. So the same technology that goes into our big cars is carried over in the smaller ones."

Metal is only part of what Alcoa supplies the automotive industry. Personal technical assistance and a wealth of research data is also available.

That's one reason there's so much Alcoa\* aluminum on high-performance cars. And aluminum's success on high-performance cars is one big reason why there's going to be more aluminum on all cars.



Dynamic, young Ray Caldwell is an engineering graduate of the University of Wisconsin with an MBA from Harvard.



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MOTOR TREND / MARCH 1970 101



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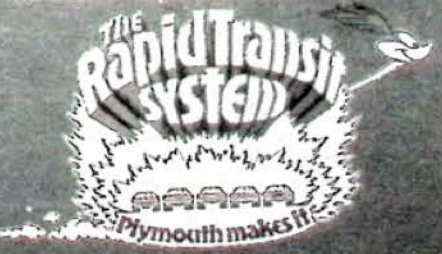
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## LOCKTON INTERVIEW

continued

ing bodies that it is totally reliable. I think we'll still probably have the manual back-up scoring systems; but for the first time in automobile racing, the spectators will know exactly what is going on. In addition, we hope to—although it isn't by any means certain—sell a sponsorship for a solid matrix information board which will be as large as a football field turned on its side, driven by another computer, offering animation and messages. And through this computer, we'll offer statistics print-outs such as "...at the following rate Andretti will pass Foyt in 4 laps on the back stretch," and things like that to add to the excitement of a race. Predictions of what will probably happen in the next few seconds, based on computerized calculations. While we won't have this for our opening race, we hope to have it for our stock car race, in the early part of 1971.

**MT:** What type of system is it, exactly; does it relate to the new traffic control systems?

**Lockton:** It's a radio signal system. It's been tested and to our satisfaction will be foolproof. It involves a very small box about twice the size of a pack of cigarettes which will be put on the bottom of every race car. The box "sends" information such as the car's speed, location on the track, and lap counts.

**MT:** What is your opinion on racing's future; small tracks versus large tracks? Can small tracks survive?

**Lockton:** I think that it's unfortunate, but it's a fact of life that as this sport accelerates in its growth, the small tracks are going to suffer. The overhead involved in promoting an auto race is fantastic. The investment in putting up a sufficient purse, adequate safety equipment, sanction fees, etc., can only be justified by tracks that have the ability to draw large crowds, and that means a fairly large facility of the types that are being built now. As a result of the simple fact that there are only so many racing weekends each year, there will be a lot of the smaller tracks losing their major race dates. This is as it should be, really. We think that's unfortunate, but imperative.

**MT:** What about auto racing as a sport, its future, in your opinion?

**Lockton:** I think that looking way ahead you're going to see the sport go to fewer races annually at big, big tracks, and on a totally international basis. Ten years from now tracks like Ontario Motor Speedway are going to be built in various locations, including Europe, and racing will be on an all-out international basis with events covered by television through the use of satellite. I think auto racing will continue as the largest spectator sport, second to horse racing, and probably surpass horse racing. I don't know whether in terms of total dollar investment it will ever exceed in the U.S. professional football and sports like that, but certainly on a worldwide basis I think it's easily going to be the biggest sport. And, in our opinion, Ontario Motor Speedway is a valuable contribution. /MT

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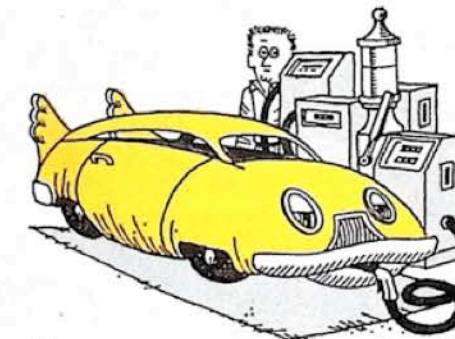
E.R.A., Clear, Alaska

*There's no problem changing from one brand of oil to another as long as the oil filter is changed at the same time, and providing that a factory qualified oil has been used and changed at recommended intervals. We recommend Pennzoil Z-7 10W-20W-30 for your car. It's a high detergent oil exceeding all car manufacturers' specifications, including Ford. And it will protect against sludge and varnish.*

**Sneaky Squeak...** I own a '66 station wagon with an automatic transmission. I'd like to know why the fan belt squeaks so much.

G.G., Roseville, California

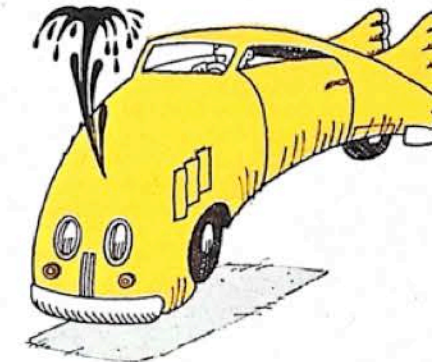
*A squeak in the fan belt can be corrected by a special spray lubricant. The place where you have your car lubed should carry it. However, the squeak may be coming from your water pump, so be sure to have it checked. It could need replacing.*



**Hungry Engine...** We've got a '63 model station wagon that eats gas and oil like it was going out of style. What could be causing this? And what weight oil should I be using?

D.J.H., Palisade, Colo.

*You didn't state the mileage on your car, but, since it is now seven years old, it probably needs repair work such as new rings, valves and perhaps a general overhaul. As far as oil weight is concerned, we recommend Pennzoil SAE 30. During cold weather in your area it may be necessary to use a lighter oil.*



**There She Blows!** I've got a '55 model with a 327-300 horsepower engine. All of the rings are good, it doesn't smoke and holds between 150-170 lbs. of compression. The PCV valve has been replaced recently. But when the engine gets to around 5,000 rpm it blows oil out of the oil filler spout. What do you think causes this?

D.W., Huntington, W.Va.

*Overfilling the crankcase could have a detrimental effect on your engine when it's operating at high rpm's. And one result is the loss of oil through the ventilating system. Be sure that the correct oil level is maintained and also check to be sure that the hoses and valves in the PCV system are clean.*

**Get It Together...** I'm in good old Viet Nam but I'm trying to make the best of things. I've ordered a 435 H.P. Corvette and want to know the best way of keeping the big 427 sharp and together. Its primary use will be on the street. Should I break it in fast and hard or what? I don't want to rebuild it each year either. Is it best to rebuild the engine to proper clearances, etc. as soon as I get it or will the factory keep within the limits? I've always used Pennzoil and I plan to continue. All advice on keeping the big brute together and running strong will be appreciated. Peace.

M.S.M., N.S.A. Danang

*A new engine shouldn't be broken in at high or low speeds. The best way to do it for the first 500 miles is to change speeds constantly by acceleration and deceleration up to 60 mph. Don't drive for long stretches of time at any one constant speed. And don't rebuild the engine when you get it. The factory has good quality inspection and control, so it should be within the proper clearances.*

**Blueprint...** I've got a Vette Sport Coupe with a 427 cubic inch (ZL-1) engine and a 4.11 posi-traction rear end and I want to get it blueprinted. Just what is a blueprint job? Also, should I use a special racing oil? If so, what brand and weight?

J.P.W., Ellinwood, Kansas

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**Oil Burner...** Recently I had my '57 Chrysler motor completely overhauled, and now there is too much oil pressure. Also, the car uses a quart every 30 miles, although there is no smoking or leakage. Can you tell me what might be wrong?

W.R., Bryte, California

*Regarding your oil pressure, the regulator valve may be advanced too far or it could be faulty. Regarding oil consumption, often after overhaul, if the rings are seated, there may be too wide a clearance between valves and valve guides. This allows excess oil to enter the combustion chamber and be burned. This can be corrected by installing valve seals.*

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## 1970 GREMLIN

continued

Like Volkswagen, all Gramlins will have two doors. There will be a degree of model distinction with a two-passenger configuration as base and a more normal four-place as the high line. American Motors' sales department feels that there probably won't be a lot of demand for the two-seater, but they may be just a little conservative.

Driving a 199-inch six Gremlin is not unlike driving a Hornet—only quicker because the car is lighter. A non-synchro-low three-speed transmission is standard and on top of it what the Ford people missed on their Maverick, a floor-shift. It just sort of goes with the character of the car, straight forward, uncomplicated, no hang-ups. Interestingly, no major foreign VW competitor is without one.

All the various pieces of the Hornet's rugged unequal length wishbone coil-sprung front suspension are found intact on the Germlin and the rear longitudinal leaf springs are suspiciously similar too, except they are shorter. Overall, Gremlin riding characteristics are very acceptable without the semi-wallow that seems to characterize the unoptioned Maverick. Blessed with a wide-track-to-body relation, the car corners flat. Even when you drive a Gremlin only a short way, there is the sense that it is a very tight package, echoing no creaks or groans over uneven surfaces. Not unlikely, the small, box-like unit body has something to do with it.

Gremlin driving position will be fine for anyone up to about 6 feet 3, and then you will have to persuade your AM dealer to move the seat tracks back an additional inch. As it is, there is precious little rear-passenger legroom with the front seat all the way back, a situation VW does suffer from. It would have been more sensible to either narrow the "trunk" space behind the rear seat back and move the bench back for Austin America-type knee room which is, as you know, more than an Electra 225. If American Motors only had a transverse engine, front-wheel-drive, the Gremlin would be one of the engineering/design triumphs of all-time. Without one, it will just have to remain one of the engineering/design triumphs of 1970. /MT

*Editor's note: Next month we put the Gremlin on the spot. A complete knock-down, drag-out road-test of the car by Motor Trend's A. B. Shuman.*



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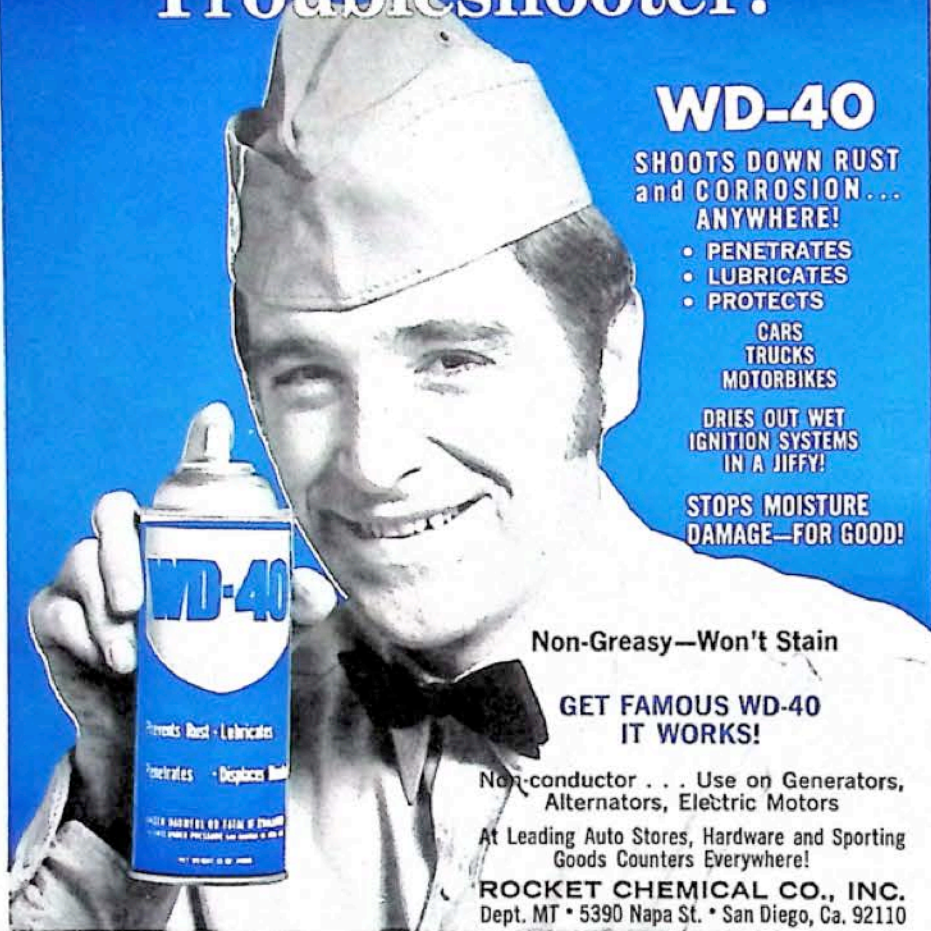
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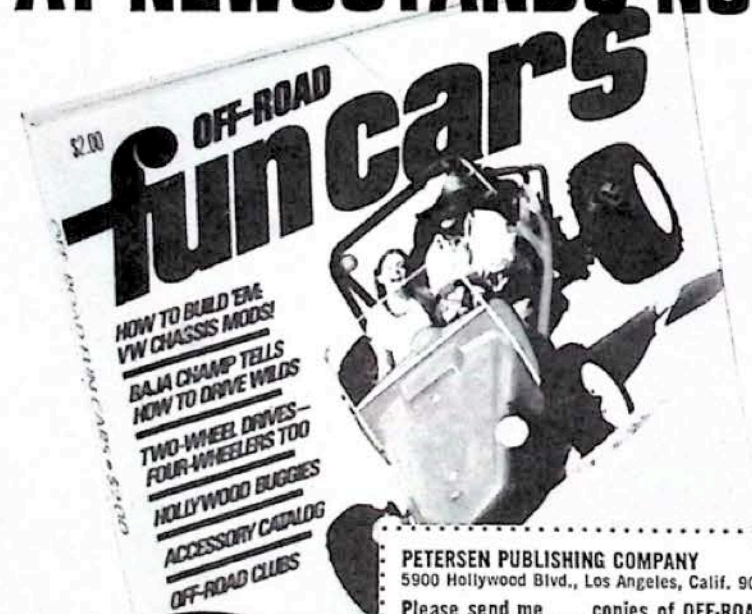
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## CAN-AM

continued

All-American Racers crew plugged an ex-Penske Chevrolet 427 engine into his 1968 McLeagle, a modified M6B McLaren, which never had Gurney-Ford power that was both competitive and reliable at the same time. At MIS he didn't have it working right yet; at Laguna Seca it was still unreliable; and at Riverside he finished fourth. Dan pioneered the twin-wing in Can-Am and he could very well be in the running this season.

There was good racing at Riverside—behind the leading orange cars. Gurney was in it, Andretti was, and so was Jackie Oliver in the Autocoast Ti-22. Autocoast? It's a small California firm that backed racing mechanic Peter Bryant in the design of a McLaren-esque car with Eagle wheels and uprights, and chassis components made largely of titanium. By building a light, simple car around a Bill Thomas-prepared Chevy 427 engine, Bryant made a competitor that qualified fast in the last two races, after its first appearance at Laguna Seca. Teething troubles kept it from finishing a race in '69, including the post-season event in Japan which it led before retiring.

Also mixed in the race for third place at Riverside was Chuck Parsons in the latest product of Eric Broadley's Lola shops, dubbed the T-163. It had a new shape, with a sharper nose and a wide-open tail. Something new, however superficial, had been needed for some time to counter the poor impression left by the 1969 version of the T-160 Lola. Teams preparing it for racing had been openly critical of its frame flexibility and underdeveloped components. But using Chaparral-prepared Chevy engines and veteran Chuck Parsons at the wheel, the Simoniz-sponsored team of Lola importer Carl Haas posted enough high finishes to gain third place in the Championship, and by a 25-point margin. An experimental big engine used at Riverside proved especially effective. This year it could work well in a completely new car Broadley is building for Haas, one he hopes will regain the glory he deserved in the days of the Lola T-70.

In a way there was another new car in the last two 1969 races: the 612P Ferrari with its 7-liter engine. After good placings in its first three tries, the Ferrari started to run into lubrication problems. These were solved in tests before and after Riverside, where Chris Amon was able to challenge the McLarens on the track, pushing them really hard for the first time. But he was disqualified there after confusion on the way the car was started, and the 7-liter engine—the only one of its kind—came unglued in practice for the Texas event. Finally handling very well, after bodywork changes and the addition by Amon's crew of a U.S.-made wing, this lone Ferrari effort was never backed-up adequately by the factory with tested and reliable engines.

This same Ferrari may be fielded in '70 by Chic Vandagriff of Hollywood

Sports Cars, who loaned Doane Spencer to the crew of mechanics for Amon's '69 effort. Ferrari plans to build several new cars of its own for the series this year, perhaps based on its new Tipo 512 long-distance racing coupe with its water radiators in the rear. But Chris Amon, with Andretti the toughest challenger to the McLarens, won't be driving one. Amon is signed with March Engineering of Britain to handle its new Grand Prix car designed by ex-McLaren, ex-Cosworth designer Robin Herd. If Amon goes Can-Am racing it will probably be in an all-new March car with a Chevy engine. It could be a good combination.

Two other Grand Prix teams are expected to make their first-ever Can-Am appearances this season. Instead of another Indy attack, Lotus is spending some of its Firestone money on a Chevy Group 7 machine. And BRM, frustrated by dismal failure in its recent Grand Prix forays, will build three new Chevy-engined Can-Am cars and enter two of them. One will be driven by George Eaton of Toronto, who looked good in his privately owned McLaren M12A last year. A second driver hasn't been nominated, though Pedro Rodriguez is a candidate.

The darkest of the dark horses in the Can-Am race this year is an entry from the Advanced Vehicle Systems stable of Don Nichols. Don's AVS Shadow, financed entirely by himself and his creditors, was tested at Riverside right after the Can-Am race. Instead of numbers it had dollar signs in the white circles on its flanks.

With a kart-sized four-spoke steering wheel placed flat between his thighs, George Follmer put the Shadow through its paces. Powered by a ZL-1 Chevy prepared by Dean Moon, with short intake stacks to boost power at high revs, the Shadow has been about a second slower than the lap record on the Riverside short track. It will have to do better than that, on its tiny Firestone tires, to be a threat this season.

It shapes up as a year of cut-throat competition starting at Mosport on June 14 and ending (if the American Raceways tracks are included by the SCCA) at College Station on November 8. If you get a chance, go see these cars and drivers. They're the fastest road-racers on earth.

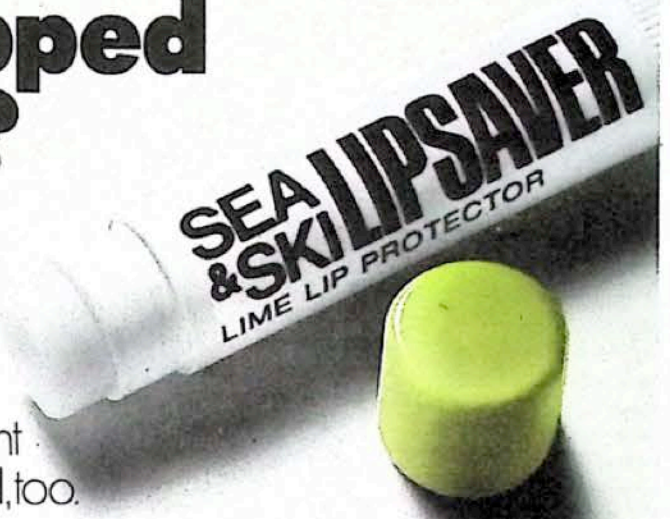
Author's Note:  
As this is written it seems likely that the SCCA will have to renege on its plan to permit wings on Can-Am cars, if it wants to keep the international listings for Can-Am dates. The FIA has banned wings that aren't integral parts of the body of the car, and this ban will, apparently, also be extended to Can-Am equipment. If this is the case, developments like the suction fan system of Jim Hall will loom much larger in importance, and Can-Am body shapes will look more like the Autocoast Ti-22, with its fenced, concave upper surfaces. Low-profile wings, firmly fastened to the body, will still be usable, as on today's Grand Prix cars. New FIA wing regs are due in the spring. /MT

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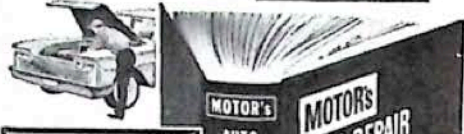
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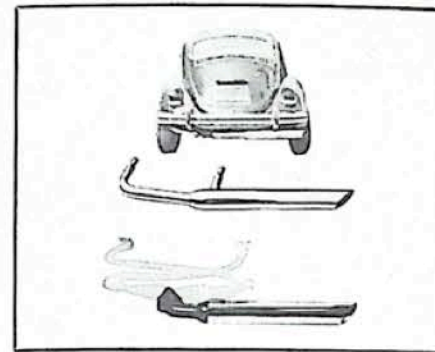
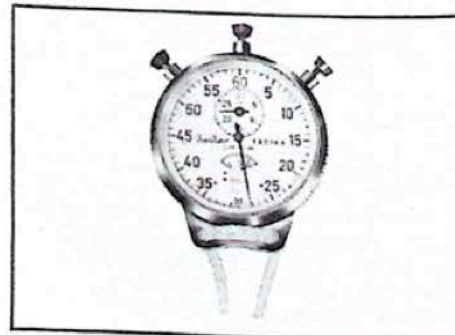
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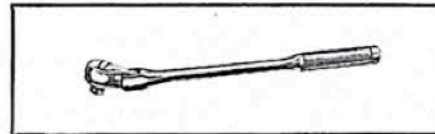
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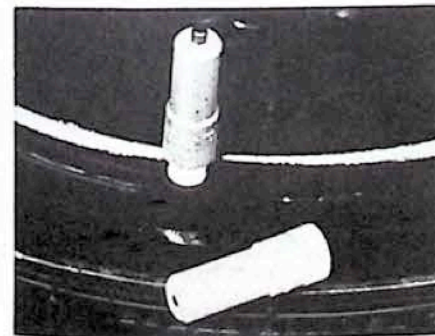
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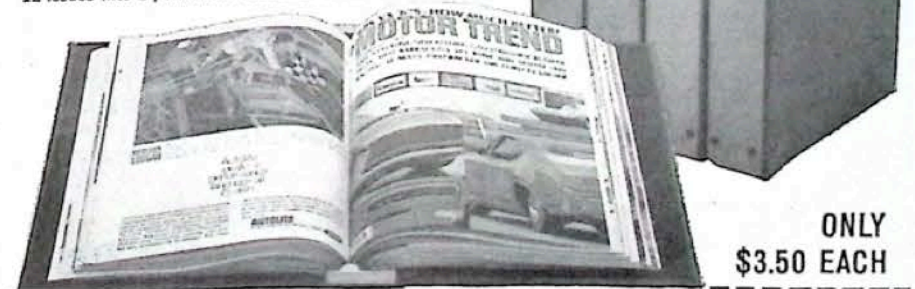


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## SILENT MAJORITY

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tainous terrain. In normal situations it stayed flat, but the variable-ratio power steering still needed plenty of work, even with only 3.2 turns lock-to-lock. It would understeer at first, then when pushed go into oversteer, so no neutral situation was possible.

Handling in the Impala is impressive. It has excellent lateral stability with no dipping or rolling. There is very little tendency for the occupants to slide, even in the tightest turns. It was the easiest car to maneuver in the corners and was never tiring or fatiguing, even in the mountains. It has very little understeer and is close to neutral. Chevrolet's variable-ratio power steering adds much to the handling excellence, with only 2.7 turns lock-to-lock. Controlling the Impala is a simple operation, yet you always know you have full control.

### PERFORMANCE AND BRAKING

With the tallest gears and next to the lowest horsepower rating, the XL had performance to match. Zero to 60 came through at 12 seconds flat. The car wasn't sluggish, but with a 2-bbl. carburetor and 265 hp, performance shouldn't receive too much emphasis.

Our Polara had an axle ratio comparable to the Ford, but was rated at 290 hp, even with a 2-bbl. jug. It did zero to 60 in 11.5 seconds. Again, the car felt peppy, but was hampered by the 2.76:1 axle ratio.

The Ambassador was surprising, with the lowest horsepower rating at 245. It ran a zero to 60 in 9.5 seconds. However, it had a 3.15:1 axle ratio which has some bearing on its performance. Also, the Ambassador has the lowest curb weight of all four cars. Still, performance was impressive with a 16.9-second quarter-mile.

Three hundred horsepower out of a 350-cubic-inch engine is fairly impressive for a family sedan, and that's what the Impala had. It was the only 4-bbl. mill in the test so performance was expected to be good. However, it ran a zero to 60 in 9.5, the same as the Ambassador! And, it had a special trailing axle ratio of 3.31:1, which is quite low for this car. Quarter-mile times were better with a top e.t. of 16.1 seconds, which is pretty good for a car weighing almost 4,000 pounds. A wide discrepancy will be noted in the speedometer error of the Impala. That's because the speedometer wasn't changed when the trailing axle ratio was added at the factory.

Braking showed quite a divergence also. The XL had the shortest stopping distance from 60 mph at 127 ft., while the Polara needed 156.6 ft. to stop from the same speed. Only the Ford and the Dodge were slightly unstable during stops, requiring excessive wheel play. Both the Impala and Ambassador stopped straight and true.

### GAS MILEAGE

This is a tough category to present logically, because the Impala, with the most horsepower, a 4-bbl. carburetor, and the lowest axle ratio, got the best

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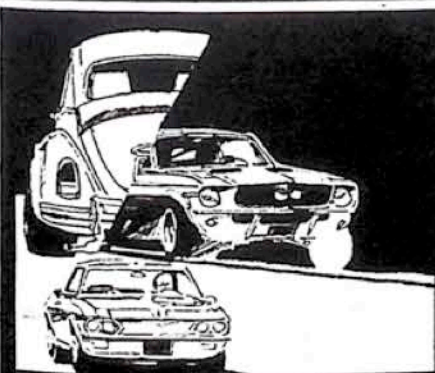
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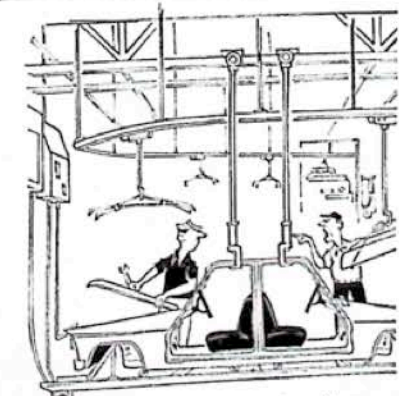
gas mileage with a top of 18.5 mpg, while the XL, with the next-to-lowest horsepower rating and a 2-bbl. got the worst gas mileage with a top of 14.8 mpg. All four cars were driven the same, either when cruising on the highway or in city traffic. The Ambassador got the lowest gas mileage after the Ford and it had the smallest horsepower rating, so it all seems rather contradictory.

### LUGGAGE SPACE

Ford rates useable luggage capacity of the XL at 18.0 cu. ft. The XL has a rather small deck lid, and because of the shelves and contouring of the trunk, it's a little difficult to stow luggage. The Dodge useable luggage capacity is rated at 22.2 cu. ft., and being the longest car it should have the largest trunk. Inside it is flat, with the spare well forward, and easy to load with luggage. The Impala is next, with a useable luggage capacity rating of 18.6 cu. ft., and a flat floor for easy storage. The Polara has a huge deck lid, making it easy to load or unload the trunk. Because the deck lid is so large you can practically step into the trunk and stand up. With a useable capacity of 18.2 cu. ft., the Ambassador is next to the Ford in size. The Ambassador also has a rather small deck lid, but that's expected in the shortest overall of the four cars. The Ambassador trunk is well designed and easy to pack.

### WHERE THEY ARE

Of all our 1970 comparisons, these four cars, the XL, the Polara, the Ambassador, and the Impala are probably the closest in every respect. Perhaps that's because these cars fit into the largest, yet most precise segment of the market. You can't come on with a lot of gadgets and gimmicks. These cars fill a definite, specific need: the family sedan. They've got to fit all the requirements of a family sedan without a lot of pizzazz. As an overall appraisal, in close comparison of all the prerequisites, we feel that the Impala emerges slightly ahead of the other three cars in this comparison. Each of the cars shines more prominently in some areas, but in the total relationship of ride, comfort, handling, performance, and convenience, the Impala 350 has the edge. Now all the purists can go back to their exotic machines and relax. But if you're driving your Lamborghini Espada through Boonville, Missouri, and the timing gear breaks, all we have to say is *amusez-vous bien et bonne chance!* /MT



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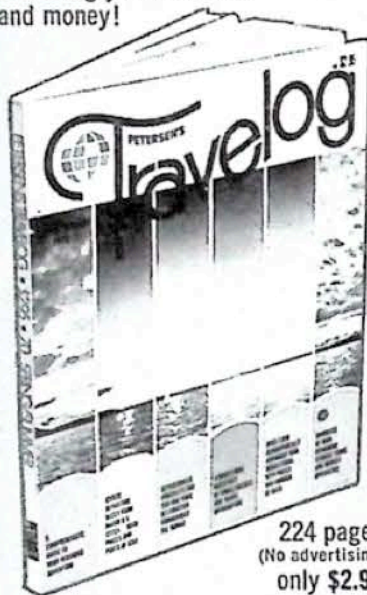
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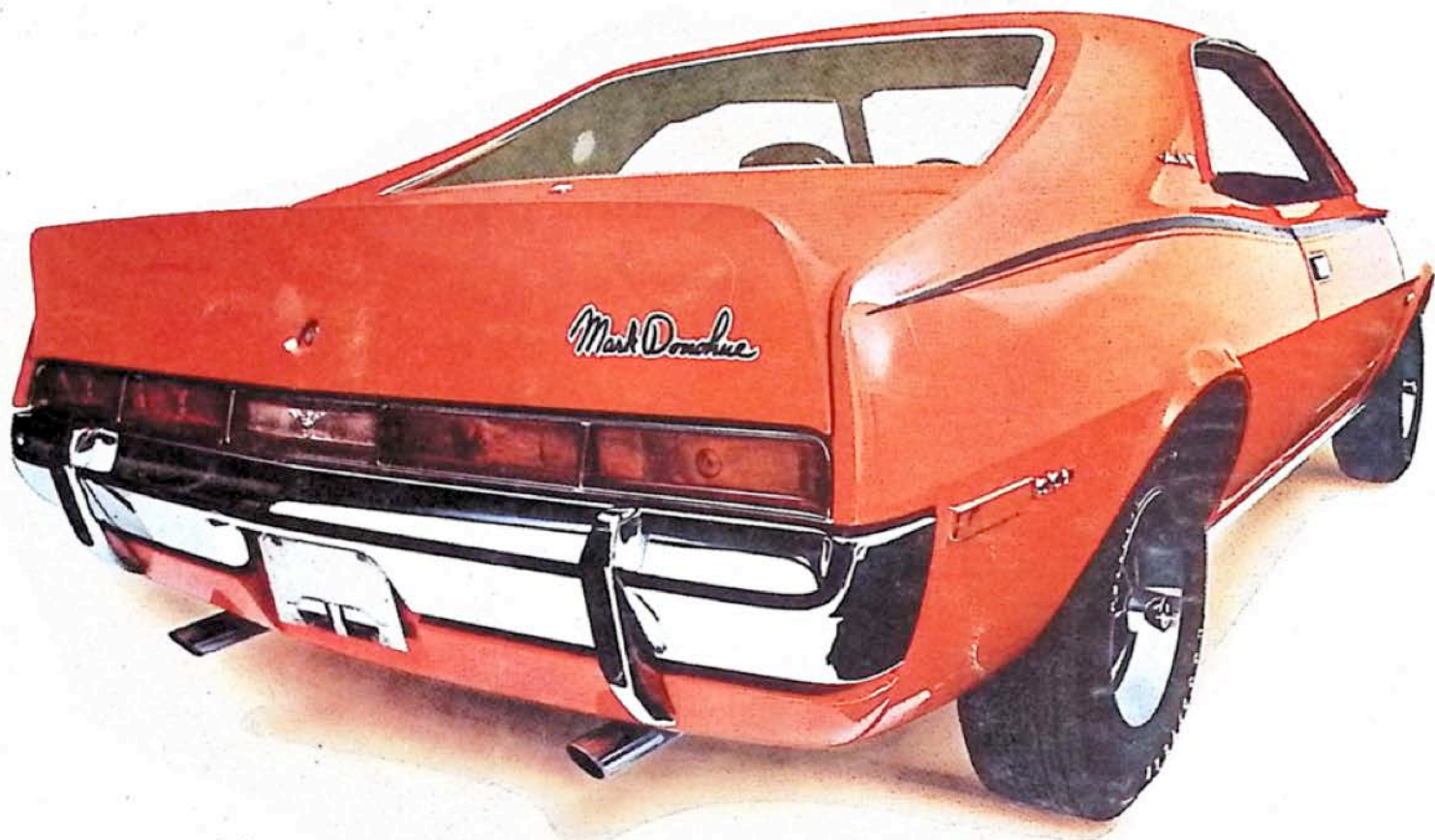
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Starting now you can buy a Javelin with a spoiler designed by Mark Donohue.

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Mark Donohue and Roger Penske, the most successful driver-manager team in road racing, recently signed a three year contract with American Motors.

Together they've won two straight Trans-Am championships. They'll go for a third with the Javelin.

One of the modifications in their Trans-Am Javelin is a spoiler designed by Donohue.

This means that according to Trans-Am rules, the spoiler has to be homologated.

In other words we must incorporate the spoiler into 2,500 Javelins

that the public can buy.

And that's just what we've done. But the Donohue designed spoiler isn't the only extra these Javelin SST's will have.

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We expect that a lot of the competition are going to see the rear end of Mark Donohue's Javelin this season.

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