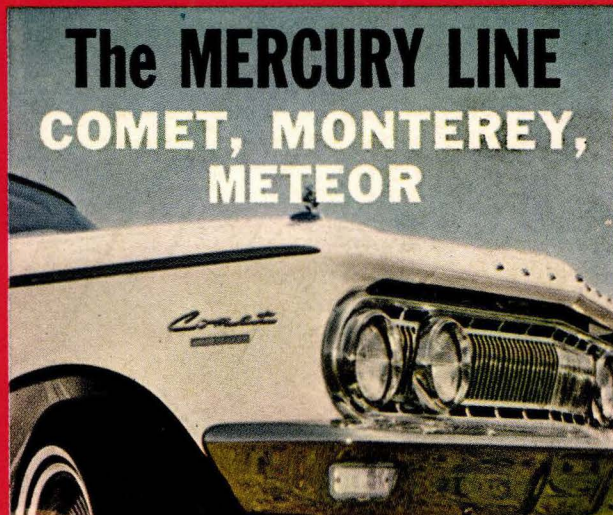




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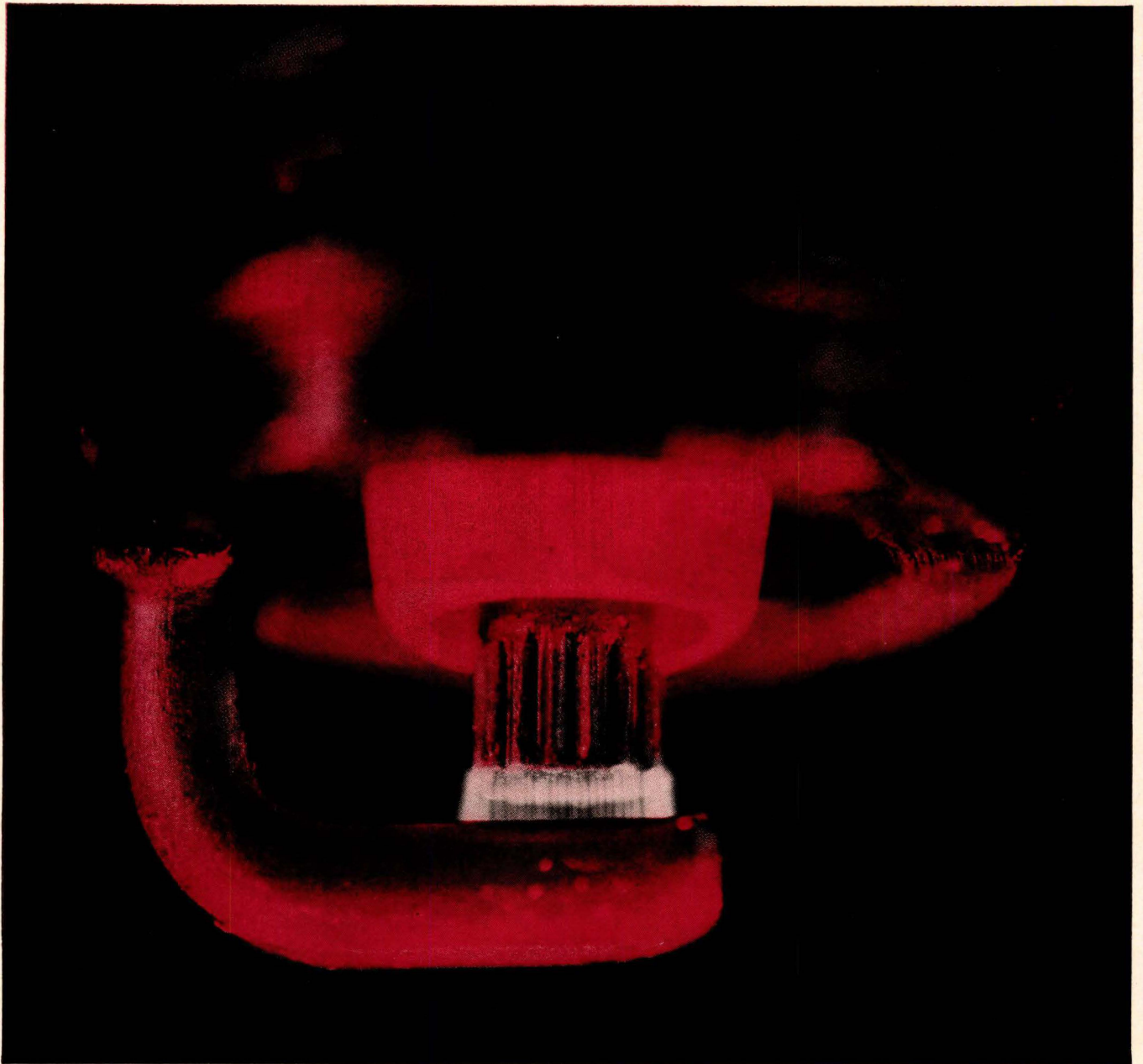


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DART 440

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Champion dragster Don Garlits had just popped Dart 440 from zero to sixty in 8.1 seconds; he had also traveled the quarter mile from a standing start in 15.4 seconds. "That's quite a bomb," he observed enthusiastically after his informal test runs. "The boys are going to win some trophies with this machine. It's got a very good power-to-weight ratio."

His Dart 440 was equipped strictly for street use. Standard 3.23 axle, 3-speed automatic transmission and 361 cu. in. V8. Dart 440 does have a great power-to-weight ratio. It's as high as one horse for every eleven pounds.

"As far as I've ever known, acceleration is simply a matter of power to weight," observed West Coast dragster Jack Chrisman, who along with Garlits was one of nine auto experts we asked to Detroit last summer to test our new Dart 440. We had done some interesting and original things with this new car. Size was one.

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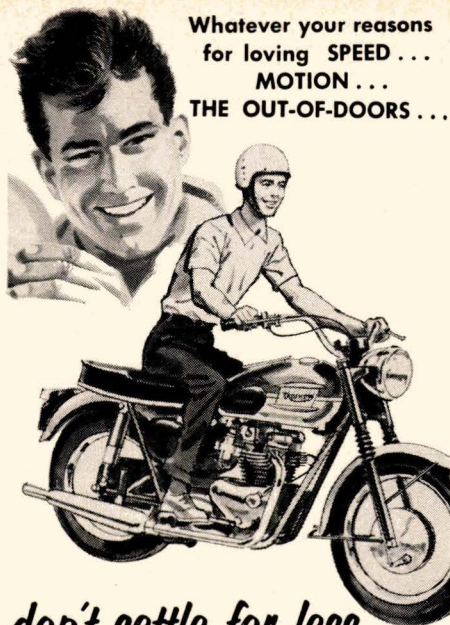
"This is a drag racer you can drive on the streets," added Chrisman. "It's smooth and quiet. It looks like a race car and handles like one. The cornering is good and so is the straight-away handling. It's the kind of car I'd want."

Sportswriter Max Muhleman, of the Charlotte News, put it this way: "You could win a trophy in a quarter mile and then drive home a crate of eggs without worrying about breaking them."

We'd like to add just one point. That good power-to-weight works both ways. You get action . . . and we're pretty sure you'll like the good gas savings. It's part of the bonus that goes with the new size Dodge Dart.

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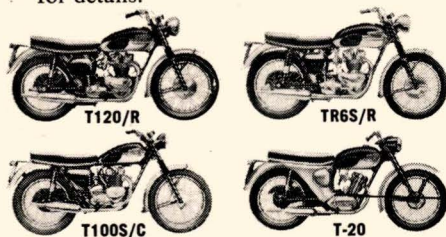
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Motor Trend

MAY 1962

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This month's cover features a first look at the new turbo-supercharged engine for the Corvair (see page 30). The two cars displayed are the Monterey and Comet from the Mercury road test (page 22).

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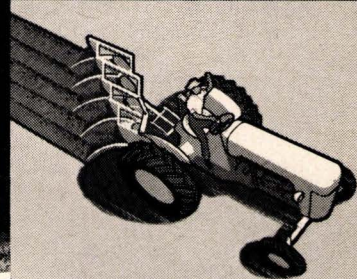
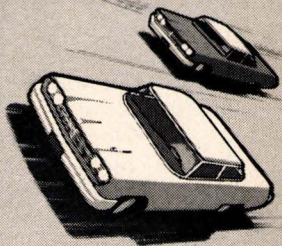
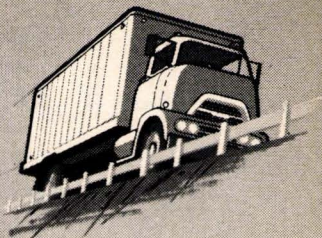
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The Editor's AUTO-GRAPHS

ARE TODAY'S automobiles up to their speed potential and the ability of the drivers to pilot them under existing traffic and road conditions? Last month we discussed the road and traffic conditions in relation to the driver; this month we will take a look at the vehicle itself.

There has been a vast improvement in the Detroit product, especially during the last five years. Many of the new features are aimed directly toward easier, safer driving for the "average" motorist. You will notice that we have set the word "average" apart because here is one big misunderstanding — there is apt to be no such thing. Like a suit of clothes, an automobile, in most cases, requires a bit of adjusting to the individual.

Effortless steering with fast ratios, power-assisted brake pedals, and distortion-free, wide-vision windshields are useless unless the driver is in position to use them with minimum effort. Like our "average" motorist, a seat designed for the averaged-sized person is apt to fit no one, but with relatively minor adjustments can be individually set for the driver.

In spite of this, we see so many drivers hanging on to the wheel, not for dear life, but just to keep themselves up high enough to see over it. In our opinion, such driving positions are more hazardous than the habitual reckless driver. Within the cost structure of today's cars, an infinitely adjustable seat is definitely an extra-cost option, but it is most certainly the responsibility of the motorist to see that the car fits him before he buys.

A relaxed driver who can devote all his arm effort to steering only, one who can see over the wheel without tilting his chin in the air, who can reach all the pedals without stretching, is in better position to react quickly — or better still, to see and anticipate what is ahead. Besides, fatigue will not begin to affect reaction times.

Fatigue is not always just the result of long hours behind the wheel. Many things besides seating comfort can dull senses and cut reaction times within short periods. Noises have a telling effect on the nervous system, not always the loud ones, but more often the barely audible whines from wind whistles, gear noises, and road, tire, and suspension vibrations transmitted through the chassis and body to the driver's hands, spine and ears.

Properly adjusted ventilating systems and balanced tires are necessary to gain the most from what the manufacturer has built into the car. The extra engineering effort and cost of large shocks, rubber isolation mounts, and sound-deadening ma-

terial are lost if the owner/driver does not maintain some few basic parts.

Realizing the lack of proper maintenance on the part of many car owners, the manufacturer, in recent years, has absorbed a lot of this responsibility by making available such things as heavier spindles and bearings, pre-packed and sealed fittings with long intervals between lubrications, self-adjusting brakes, dual master brake cylinders, and permanent radiator coolants. We see the day when the need for any maintenance will be eliminated for at least the first three years of a car's life, but even then there will be those owners who will abuse this to a point beyond reasonable safety.

The whole issue of driver versus car is that there is a definite area of responsibility on the part of the owner/driver to maintain the mechanical soundness of his vehicle and have it properly adjusted both mechanically and for his own accessibility of controls to take full advantage of the time, money and research poured into today's automobile.

MOTOR TREND will continue to hammer away at the automotive industry for better cars, and from the results of our editorial goading in the past, we hope to see Detroit continue as it has on a progressive basis.

There are still some immediate problems that must be solved as soon as possible. As speeds go up, even with substantial weight reductions in cars generally, the inertia forces are still high. This means that stopping such a mass or changing direction is not only necessary but critical. Lighter engines and better placement have reduced some of the excessive front-end weight on cars and eased the steering effort, but too many automobiles are still suffering from too many turns of the steering wheel to effect a change in direction.

Here we are, back to reaction and action time. The steering wheel rim can literally be calibrated in fractions of a second through which it must travel to effect a certain number of inches' deflection in vehicle path per hundred feet of forward motion at certain speeds. Looking at it in this manner, we can see that responsive steering can be an important contribution to safety. Too many Detroit cars are not taking advantage of power assist to speed up steering and are still using high mechanical ratios to overcome stiff, antiquated linkages in non-power systems.

It is about time we should be able to stop writing about how to dry out brakes after going through puddles or driving

in the rain. Such driving is not unusual — millions of cars are driven through such conditions every week — yet we still have a problem that has been with us since the internal-expanding brake. Linings have improved — they have had to in order to stop heavier and faster cars with a bare minimum of brake lining area — but MOTOR TREND feels that the time has come to stop once and for all this hazard to even the expert driver . . . wet brakes.

While on the subject of brakes, let's analyze stop lights. We note that amber front turn indicators have been approved for the 1963 cars. Why not a separate amber stop light? Combination stop and tail lights are great in daylight but at night, unless the following driver actually sees them come on, the redder red within red is not always an attention-getter.

We all tend to use poor judgment in riding too close to the car ahead, but even maintaining the recommended one car length for every ten mph, we cannot keep our vision glued only to the car ahead. We like the idea of stop lights, preferably a color other than red, for this phase of signaling only, and do not think that such an important driving aid should be sacrificed in the interest of styling.

Headlights must also come in for their share of criticism. The high-low beam dipping system is hardly better today than it was in the days of the filament pre-focus bulbs and nickel-plated reflectors. It is ideal for straight and level roads, but dangerous to the driver who has his forward vision cut in half or less going over hills or around curves at legal-limit speeds that were considered in the daredevil class not too many years ago. Improved lighting that does not increase the hazard to the motorist who must act to prevent blinding the oncoming driver would certainly be a big step forward in the reduction of highway accidents.

Interiors are much better than they used to be but can still be improved from a safety standpoint. We do not mean the recessed steering wheels and padded dashes, but this thing of driving position. Seat adjustment is generally adequate for what most people believe to be the right position, but the ultimate in vision, comfort and ease of pedal access can be achieved only by making steering wheel height and length also adjustable.

We have hit some of the highlights of this thing called the driver and his car. It is obvious that the driver himself must assume some responsibility for the safety and ease of handling of his vehicle and insist that the manufacturer continue to improve the product. This will provide more progress in the automotive field than an attitude of "I can drive — build me a car that will cover up my mistakes and protect me while I am making them."

Charles Nerpel
Editor

DO-IT-YOURSELF DELIGHT

(and all you need is a pencil)

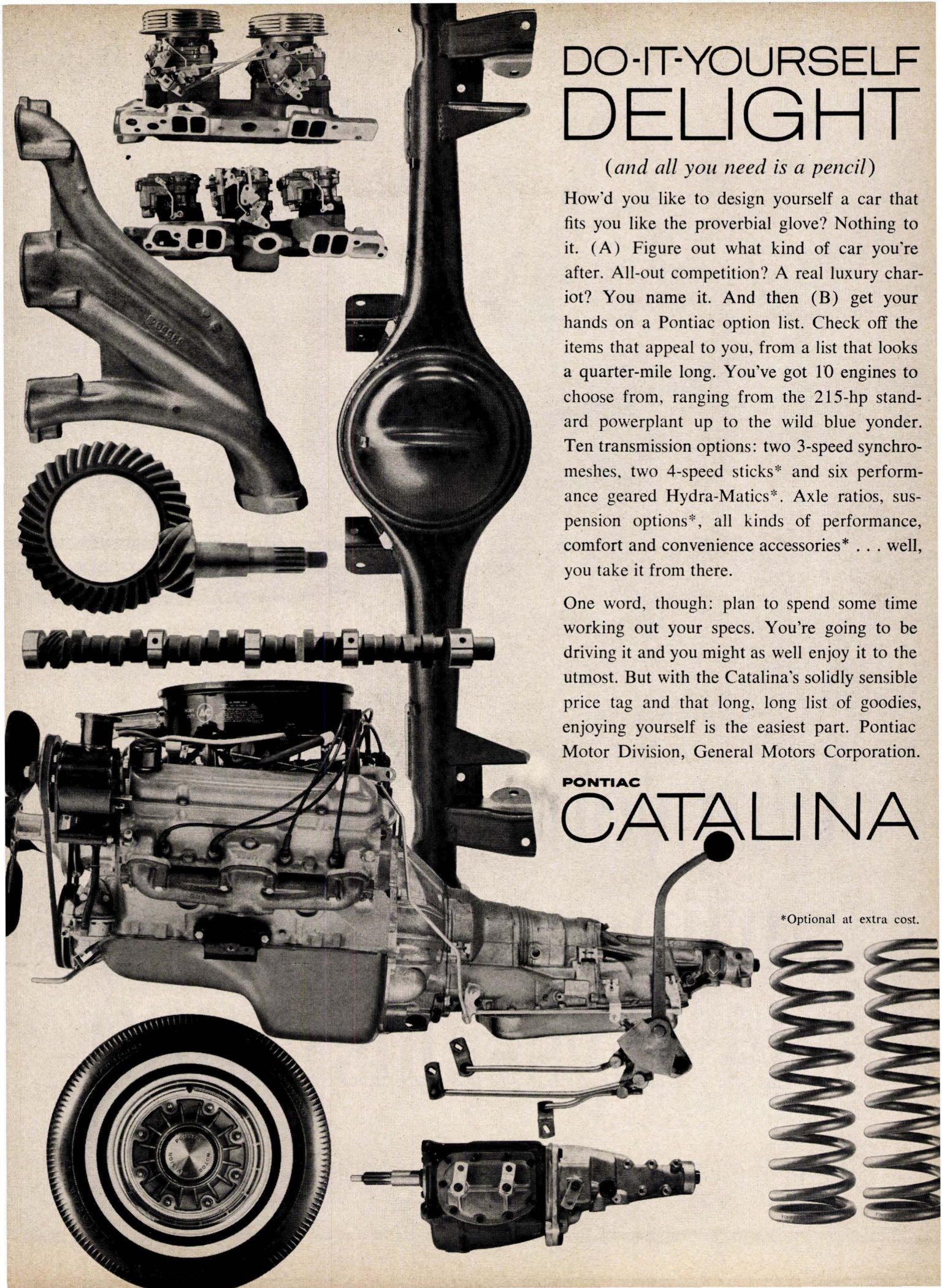
How'd you like to design yourself a car that fits you like the proverbial glove? Nothing to it. (A) Figure out what kind of car you're after. All-out competition? A real luxury chariot? You name it. And then (B) get your hands on a Pontiac option list. Check off the items that appeal to you, from a list that looks a quarter-mile long. You've got 10 engines to choose from, ranging from the 215-hp standard powerplant up to the wild blue yonder. Ten transmission options: two 3-speed synchromeshes, two 4-speed sticks* and six performance geared Hydra-Matics*. Axle ratios, suspension options*, all kinds of performance, comfort and convenience accessories* . . . well, you take it from there.

One word, though: plan to spend some time working out your specs. You're going to be driving it and you might as well enjoy it to the utmost. But with the Catalina's solidly sensible price tag and that long, long list of goodies, enjoying yourself is the easiest part. Pontiac Motor Division, General Motors Corporation.

PONTIAC

CATALINA

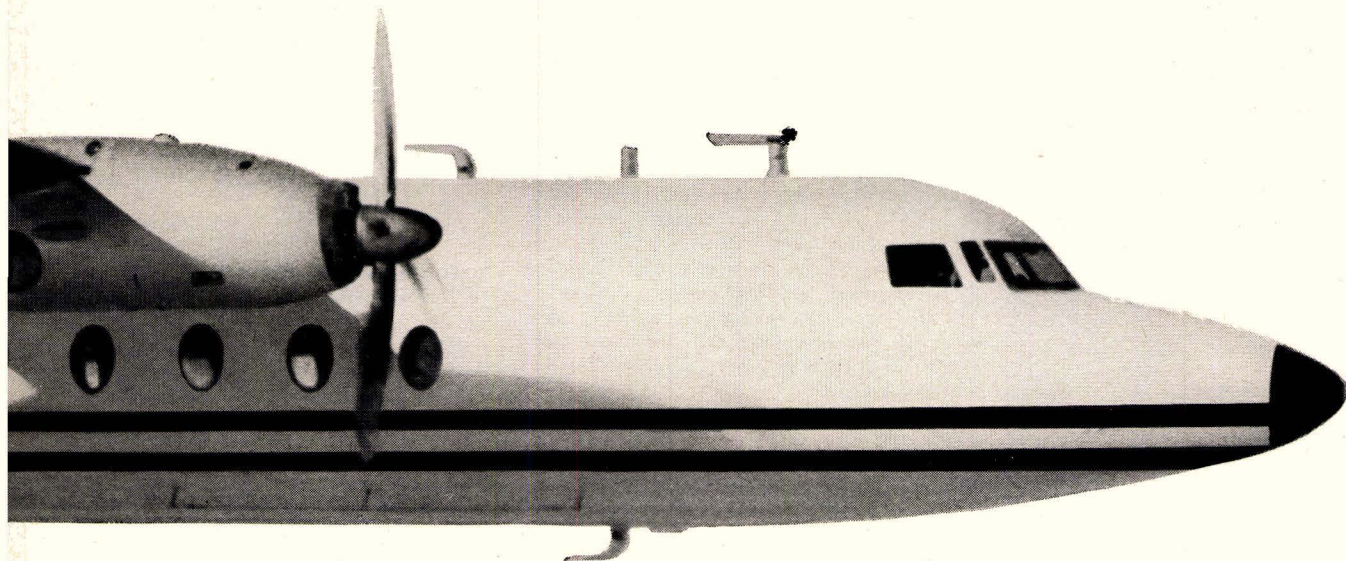
*Optional at extra cost.





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entry blank. It gives you complete contest rules. (You just complete a jingle . . . and the blank gives you plenty of hints!)

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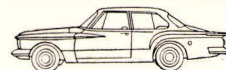


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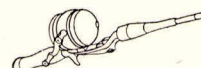
33 DeJur Zoom-lens Movie Cameras. Electric-eye!



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Letters

LET'S NOT KID OURSELVES

If horsepower is a cure for myopia, I'll take my chances in a space ship. A pedestrian certainly wouldn't have a prayer, especially if the feeble-eyed hot rodder is also a poor judge of speed.

I am referring to the rationalizings by the chief engineer in Don MacDonald's "Spotlight on Detroit" in the March issue. A car that requires 1200 feet to pass a truck traveling 50 mph is just as safe as the driver behind the wheel.

Let's not kid ourselves! The "hot" car is for those of us who get a thrill out of speed and acceleration. Any arguments about potential safety, time saved, etc., are counterbalanced by the obvious hazards of power and speed, not to mention expense.

For those who want 400 hp, let them have it — but let's not hear the song and dance about safety. Our highway fatality problems are not going to be solved by putting two "hot" cars in every garage.

I'll agree that a hot car can be driven safely, but extra power will not compensate for the mental and physical deficiencies of the driver.

John H. Wimmer
Milroy, Ind.

HOW TRUE!

I would like to compliment you on your excellent report on the Valiant Signet 200 in your March issue.

As a Valiant owner, I have the very same complaints about the car as you did. I'm glad you noticed that weak and noisy clutch — mine has slipped and growled ever since it was new. Also, I am especially glad you mentioned those crazy-shaped doors. I and my family are constantly tearing our clothes, jabbing or cutting ourselves getting in and out. We agree that the doors are miserable.

So many road tests that you read nowadays are just so many words that could be said about any car going down the road. I am very glad to know that you people are able to notice the defects in a car and also have nerve enough to point out these defects to the public. Keep up the good work.

Marshall J. Fletcher Jr.
Moab, Utah

BREAKING REAR END

In Roger Huntington's article, "Chevy II with a V-8," in your March issue, he says that most "late" U.S. cars tend to plough on corners and for this reason one should down-shift and power through.

Is it not more usual for the rear end to break loose than the front end drift (except for some notorious ploughers such as some Buicks, etc.)? If this is the case, in a corner just when the side pressure is about all the friction the rear tires can take, and you shift down and pour it on, the added pressure will be sure to break contact with the road and start the rear end drifting badly.

I know my '57 Dodge convertible (D-500 with factory dual quads, etc., rated at 314 hp) will coast sharp turns beautifully, but if at 25 mph or so you tramp it into 1st or 2nd, the rear end will break when it would not have otherwise.

Roland de Marcellus
Chicago, Ill.

WHO ARE YOU KIDDING?

Regarding your road test of the Ford 405 in your March issue, you stated, "You couldn't bust the rear tires loose for love or money coming off the line."

This is completely and absolutely ridiculous, especially since in the same issue you tested a Pontiac which was: 1) heavier, and 2) had a higher axle ratio (lower numerically), 3) had a three-speed automatic transmission and 4) had 100 less horsepower. You stated, "Too much throttle and the tires really light up."

If you have ever been to a drag strip, you know that even after these Super/Stocks are set up for dragging with beefed suspension and fat butyl tires, they come off the line with the rear tires engulfed in smoke, and at shift points the rear springs warp and little puffs of smoke are emitted from the rear tires. And bear in mind that these boys are trying to keep from spinning excessively.

It just doesn't add up that with 405 hp you can't spin one little 7.10 x 15 tire. Who are you trying to kid?

Richard Will
East Aurora, N.Y.

TIRED OF BEING UNDERTIRED

You state that the standard tire size for the Ford package with the hot 405 engine is 6.70 x 15 and that your test vehicle was equipped with 7.10 x 15's. For a car weighing just under 3900 pounds, isn't the capacity of 7.10 x 15's a little less than adequate, considering a load of four or five people with modest luggage?

I owned a 1956 Fairlane which weighed a good 500 pounds less than the 1962 model you tested. I ran 7.10 x 15's on this car for the extra capacity of the larger cross-section (6.70's were standard), and while I got no exceptional life (18,000 miles on Firestone 500's), they did run cool at speed. Since a primary indication of an overloaded tire is heating, I must assume the 7.10 size was adequate for the 1956 model. But for a 3900-pound car, I say no!

R. M. Crockett
Arlington, Tex.

A MAN'S AUTOMOBILE

Hats off to MOTOR TREND, with special laurels to Jim Wright, for the better-than-ever road test report of the 1962 Hawk GT (February issue).

Ever since I was old enough to really appreciate "nice iron," I've admired Studebaker's bold approaches throughout the years. Their latest and greatest, the Hawk GT, is one fine machine, and I believe that it's reports like yours that will help bring rousing sales success to this splendid "man's automobile."

It's been a long time since anyone in the automotive industry has come up with a hairy-chested set of wheels, so here's cheers to S-P.

Thanks again for a great report on a great car.

Tom Hofsommer
Fargo, N.D.

"THINKING MAN'S" ANSWER

The answer to "Thinking Man" Pete de Lackner's problem, presented in "Letters," February MOTOR TREND, is really very simple.

All he needs is a car with a small, light engine which will operate very economically on regular gas and develop in the neighborhood of 350 to 400 hp. The car should

have the outside dimensions of a Volkswagen, with the interior the size of a Lincoln Continental's and a trunk as large as the bed of a Ford pickup.

Then remove the "blinking red lights" and install the instrument panel from an Air Force B-52 with, of course, all parts made of sponge rubber. After replacing the "fat, overworked tires" with solid rubber (or soft iron) tires and installing a deluxe \$100 to \$125 hydraulic jack, "Thinking Pete" should be ready for "lots of hard (I mean *hard*), fast miles."

"I don't care what they look like, I'll buy one." In the next paragraph he says the Lark looks horrible!

What would "Thinking Man Pete" expect in an ideal woman? I'll bet the answer would drive Hollywood nuts!

Phillip D. Royer Ft. Walton Beach, Fla.

DIFFERENCE OF OPINION

Robert J. Gottlieb's recent article on the Ruxton contains what appears to be hearsay and misinformation. Particularly, the reader is misled to believe the car could be driven only by specially trained muscle-men on roads as flat as a billiard table, especially when the roads were icy.

It is hard to go along with his explanation that this was due to a very heavy rear end. I would be greatly interested in finding how such a condition would be possible, when the engine, transmission and differential were over the front axle.

I have never owned a Ruxton but have owned its counterpart, a Cord L-29 Phaeton with the optional large Lycoming engine and longer wheelbase (137½ inches) mounting an all-aluminum body at a curb weight of 4500 pounds.

Its suspension differed from the Ruxton in that it had individually sprung front wheels. My only design criticism was that in using the Miller axle as originally designed for racing, the brakes were located inboard instead of at the wheels. This transmitted all the braking loads through the outboard U-joints, which caused excessive wear and resulted in squeaking due to the unlubricated trunnions. On mine I added provision for lubrication.

The only experience I encountered, such as Mr. Gottlieb describes, was on a steep, ice-covered hill. I was in fine shape until forced to stop due to traffic. Trying to get underway from a complete stop required the most skillful driving; however, this was also experienced by the rear-drive cars which had to stop along with me.

I too had been misinformed by the erroneous statements concerning the problem of hard steering due to centrifugal forces acting on the front wheels. These forces are no different, from an engineering standpoint, from the rear-drive car.

I must rate the Cord L-29 as the best-handling car I ever drove and for comfort and sheer driving pleasure gave me more enjoyment than any of the other 22 cars I have ever owned. If the engine had the flexibility in traffic of our present engines, it would be incomparable on today's market.

Carl M. Petry Buffalo, N.Y.

IT'S NOT THE FINS

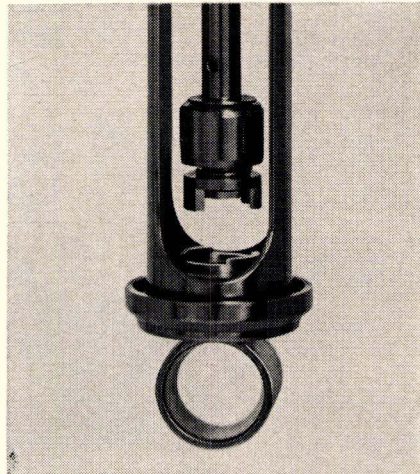
This is in answer to a letter in the March MT, wherein someone talked about bigger
continued on page 12

Test your sports car I.Q!

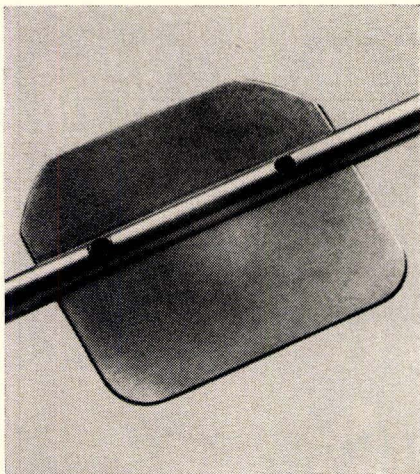
TRY THIS QUICK QUIZ BY QUAKER STATE



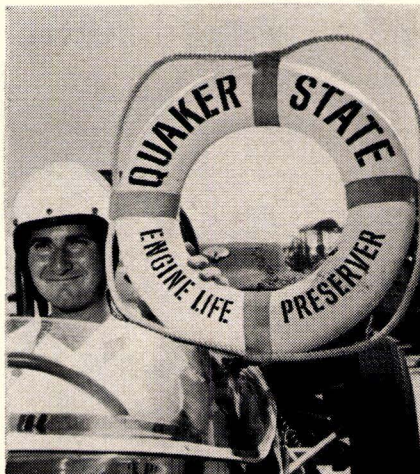
1. A famous corner on a famous course. Can you name both?



2. What is special about this shock absorber (cutaway photo)?

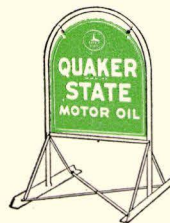


3. Recognize this?



4. What does this symbol stand for?

Protect the life of your car engine with the best engine life preserver—Quaker State Motor Oil. Years-ahead Quaker State is specially refined from 100% pure Pennsylvania Grade Crude Oil to give every car longer-lasting lubrication and complete protection. It's the finest motor oil money can buy. Keeps your car on the road, out of the repair shop—and saves you



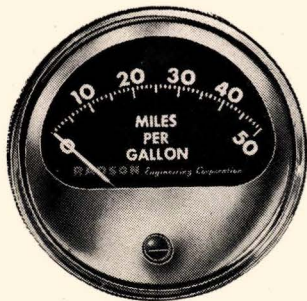
money. For your sports car and family car, too, insist on Quaker State—the best engine life preserver.

Answers: 1. It's Station Hairpin on the Monaco Grand Prix. 2. It is an adjustable shock. 3. This is a close-up photograph of the butterfly on a carburetor. 4. The life preserver stands for Quaker State Motor Oil—because it is the best engine life preserver.

QUAKER STATE OIL REFINING CORPORATION, OIL CITY, PENNSYLVANIA

RADSON Perfects FIRST FUELOMETER!

Check Your Miles-Per-Gallon At A Glance!



Get your Fuelometer at your Radson dealer or write to

This is the most revolutionary new development in automotive instrumentation since the zener-controlled, transistorized tachometer, also pioneered and perfected by Radson.

- No-lag needle gives instantaneous MPG readings... reliable, zener-controlled, transistorized circuitry... tested accuracy... fast, easy installation... illuminated dial... 0-25 and 0-50 MPG meters... positive or negative ground... standard 12 volt, convertible to 6 volt... swivel or panel mounting... Full one-year warranty!

RADSON Engineering Corp.

DEPT. M-25, INSTRUMENT & ACCESSORY DIV., MACON, ILL.

**TRI-STATE
SCRAMBLES**

We've got a **SPORTSTER H**, honey. The same 55 cubic inches of go" but with sharp on-the-road styling.

Smoothest ride this side of the Duo-Glide

I dunno! I lost it!

Come over to my place, son! There are 9 Harley-Davidson winners to choose from.

Out Front All the Way on a **SPORTSTER CH**

Harley-Davidson **SPORTSTER CH** wins again!

On or off the road it's first!

H-D DEALER

HARLEY-DAVIDSON
MOTOR CO.
DEPT. MT-5
Milwaukee 1, Wisconsin

Please send me literature on the exciting Sportsters.

Name.....Age.....
Street.....
City.....Zone.....
State.....County.....

In any event the Sportster CH leads the field. Put it through its paces on scrambles... drags... hill climbing. One for the road? Try the Sportster H with sharp on-the-road styling. See the Sportsters and the complete Harley-Davidson line at your Harley-Davidson dealer: Duo-Glide... Sportster H... Sportster CH... Topper H (scooter)... Sprint H... Sprint... Ranger... Pacer... Scat.

Letters *continued*

and better sales for the new de-finned Chrysler cars.

Fins don't have anything to do with it. Look at Cadillac—they still have them. Fords, Comets, Meteors, Ramblers—all have had, or still have, fins to some degree. Chevy has even had them sideways. What other car but Chevrolet could have gotten away with the rear quarter it had in 1959?

What is the answer—is it that Chrysler builds such a lousy car, that their styling isn't right? Nope—General Motors, and Chevrolet Division in particular, have built a volume-centered, highly competitive dealer organization, based on the cold, hard, economic facts of American buying habits. Sell big, be big—then no matter what you do, you set the pace.

Right or wrong, most Chevy people react to the car in a favorable fashion. If it's way out, then it's advances styling. If it's a conservative model year, then it's sound value, good trade-in, sensible styling. Nobody wins but Chevy.

Clyde Findling

Boston, Mass.

NO BIG CARS FOR ME

In answer to Rev. Hartung's letter in the March MT regarding economy of large vs. small cars, may I add my two cents worth?

If the Reverend did actually drive for a cost of 5.7 cents per mile, I am sure Hertz and others would like to know the secret. Perhaps in small towns and open country with 25 to 35,000 miles per year, a large car is the ticket. But in city traffic, in the Los Angeles area at least, a large car can be a pain in the neck. They take up too much room on the road and when parked. Most of the time there are only one or two people to a car, especially on work days.

I drive a lowest-powered popular make and get 11 mpg—\$25 for a major tune-up with plugs, points and condenser, and my '56 isn't nearly as large as the '58-'61 models.

I think that from the way many drive in city traffic, the high-powered cars are largely useful to give juvenile-type minds a false sense of power and mastery.

The public wanted bigger cars, they got them, and now they don't like them so well—or what is this compact trend all about? Meanwhile, the industry will build ever-hotter compacts (at a slight fee, of course) to keep the fish on the hook for anything but sensible and economical transportation. Alex DePew

Bell, Calif.

I admit that the cost of 5.7 cents per mile that Rev. Hartung obtained with his Ford is quite reasonable for a "Detroit giant," but during the same period, I traveled for 50 per cent less, or 2.85 cents per mile, in Volkswagens. I have kept track of all expenses including depreciation, and also have just taken delivery on a 1962 model—Volkswagen, naturally.

As for comfort, I am still satisfied with the VW after 125,000 miles in three years, which includes 15 trips ranging from 1000 to 9000 miles.

By the way, a saving of 2.85 cents per mile amounts to \$3562. That is quite a

sum to pay for the so-called comfort and convenience of Detroit's "big iron."

William K. Spicer Fort Collins, Colo.

CHEVY IMPALA VS. JAGUAR XK-E

In your March issue, a J. Trager wrote a letter stating that the new Jaguar XK-E had better acceleration and a higher top end with only 230 cubic inches and 265 hp, than the '62 Impala SS with 409 cubic inches and 409 hp.

I was wondering why he would make a ridiculous statement like that. Common sense would tell you that a sports car would perform better than a big American car. Besides, the Jaguar weighs about 2000 pounds less than the Impala, it is lower and more streamlined, so it's only natural that it would perform better than a heavier car, even though it has a small engine in it.

I would think that if he wanted to compare the XK-E to some American car, he ought to compare it against the '62 Corvette. The Corvette with fuel injection can definitely take the Jaguar in acceleration, as it turned 108 in the quarter and it can get to 60 in only six seconds. The Corvette will not beat the Jaguar in top end though, as the Corvette will do only about 160 or 165 and the Jaguar will do 180 with a special axle ratio.

Ernest Gentile Inglewood, Calif.

The Chevy is a six-passenger car, while you would be lucky, and uncomfortable, if you tried to fit three into the Jaguar. Secondly, the 24-hour Le Mans may prove the endurance of a car, but it does not mean that the same car could be used in city traffic.

Stuart Gitlin Westbury, N.Y.

Why didn't Mr. Trager compare the Chevrolet 409 to some of the Jaguar sedans? That would be a better comparison.

Ken Smith Santa Rosa, Tex.

NOTHING NEW

Much ado has been made about Cadillac's "revolutionary" braking system for 1962, with dual master cylinders and separate lines to front and rear.

As a matter of historical interest, may I point out that American Motors was quietly installing such a system on Ramblers in 1961?

Ronald B. Moore Boston, Mass.

FORD FUROR

What gives? After reading Roger Huntington's road test of the hot new Ford 406 in your March issue I checked by bank balance and hopped over to my friendly Ford dealer. "Give me one of those hot rods," I said, "and here is the \$379.70 that Roger Huntington says is the only extra cost."

The Ford man did not agree. He said that I'll have to pay more for the four-speed box. Who do I believe?

Joe Salman Falls City, Neb.

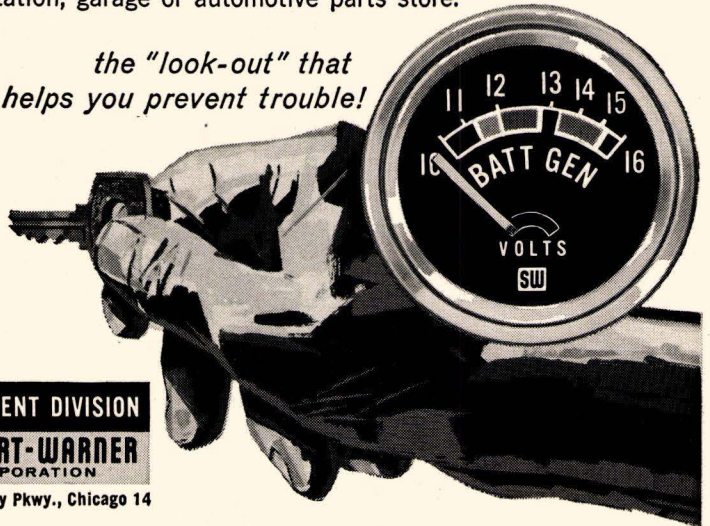
Your Ford man is right. The 406 Special Package costs \$379.70 plus \$188 for the four-speed transmission.

STEWART-WARNER "VOLT-GUARD"

New from

Stewart-Warner—"Volt Guard"—the gauge that checks the complete electrical system. Warns of impending trouble in battery, generator or voltage regulator. Alerts you against costly and time-consuming breakdowns and electrical system failures. For all cars, trucks, buses and engines with 12-volt ignition systems. Ideal for boats, too. See the Stewart-Warner "Volt-Guard" at your nearby service station, garage or automotive parts store.

the "look-out" that helps you prevent trouble!



Dept. J-52, 1840 Diversey Pkwy., Chicago 14

MIRROR-AERIAL



It fits right on the fender of your car like a handsome sporty rear-view mirror—but it's a TOP-PERFORMING car aerial too! Proven in a thousand tests and checked out from coast to coast, it makes standard aerials old-fashioned overnight. Just think of these advantages:

- No more "headaches" over bent, broken or stolen aerials
- Perfect radio reception everywhere
- A handsome adornment—lavish chrome plating assures lifetime luster
- Greater safety—mirror fully adjustable for wide-angle rear vision
- Less fading than standard aerials under bridges, tunnels, etc.
- Easy to fit to any car
- Matching mirror available

You can install this revolutionary, new mirror-aerial yourself—in a jiffy. Complete instructions and an installation template are included with each unit. Only \$9.95, it lends a million dollars worth of class to any car. (Identical matching mirror—\$3.95). Enjoy better "listening". Stop worrying about vandalism. Be among the first to own one—but supplies going fast. Order today to avoid delay from your favorite dealer or write to:

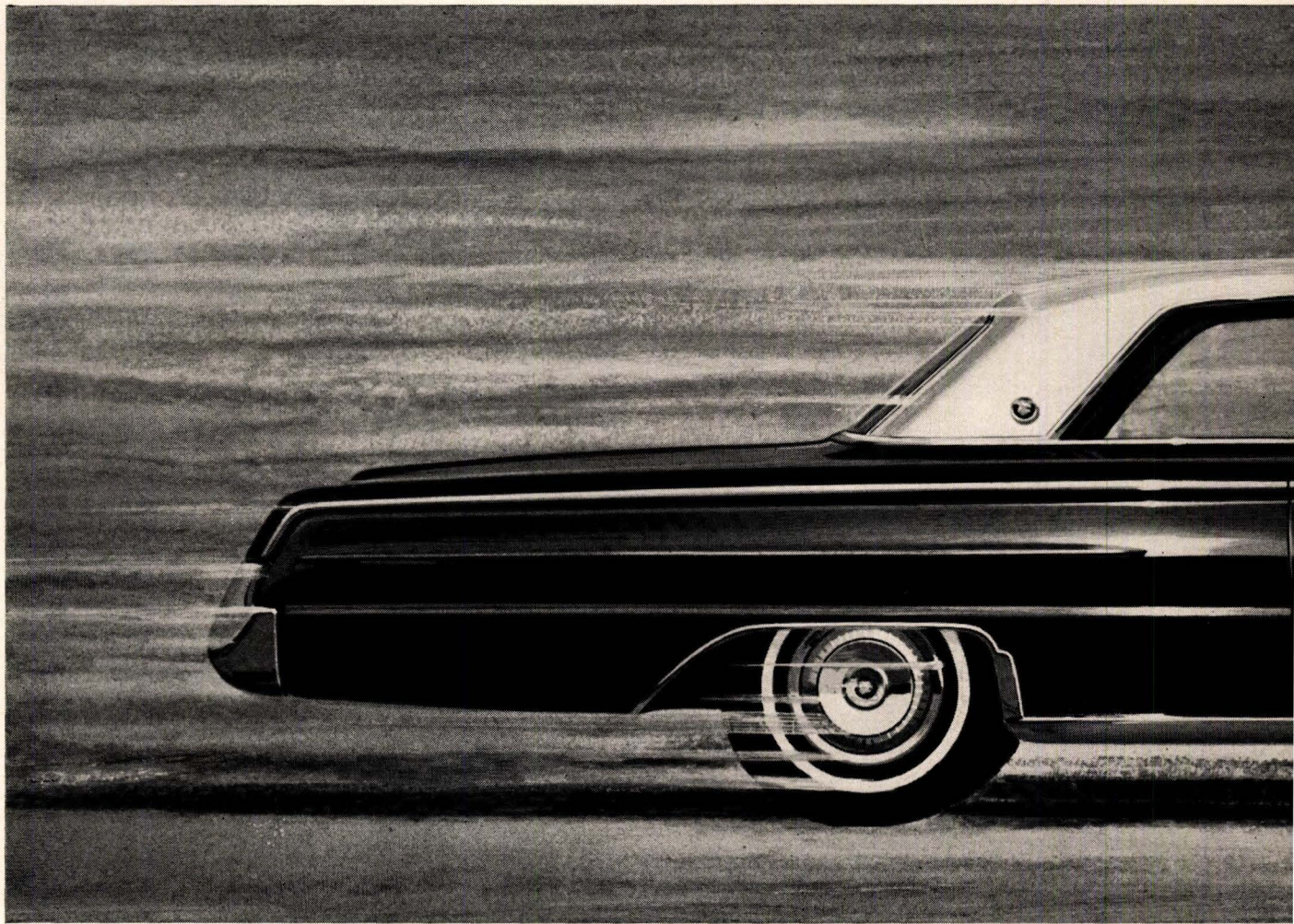


Engine Imports

INCORPORATED

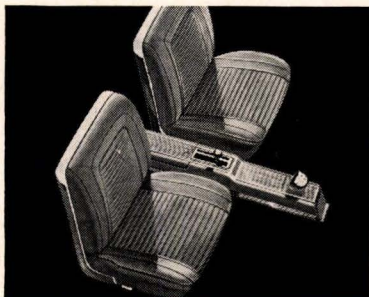
321 SPRECKELS BUILDING • SAN DIEGO 1, CALIFORNIA

WILDCAT

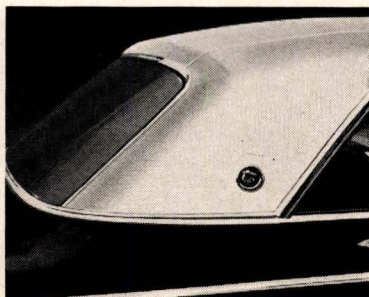


BUICK INTRODUCES TORRID NEW LUXURY SPORTS CAR

Front "buckets." Center console mounts the "stick" for Turbine Drive, and an illuminated Tachometer.

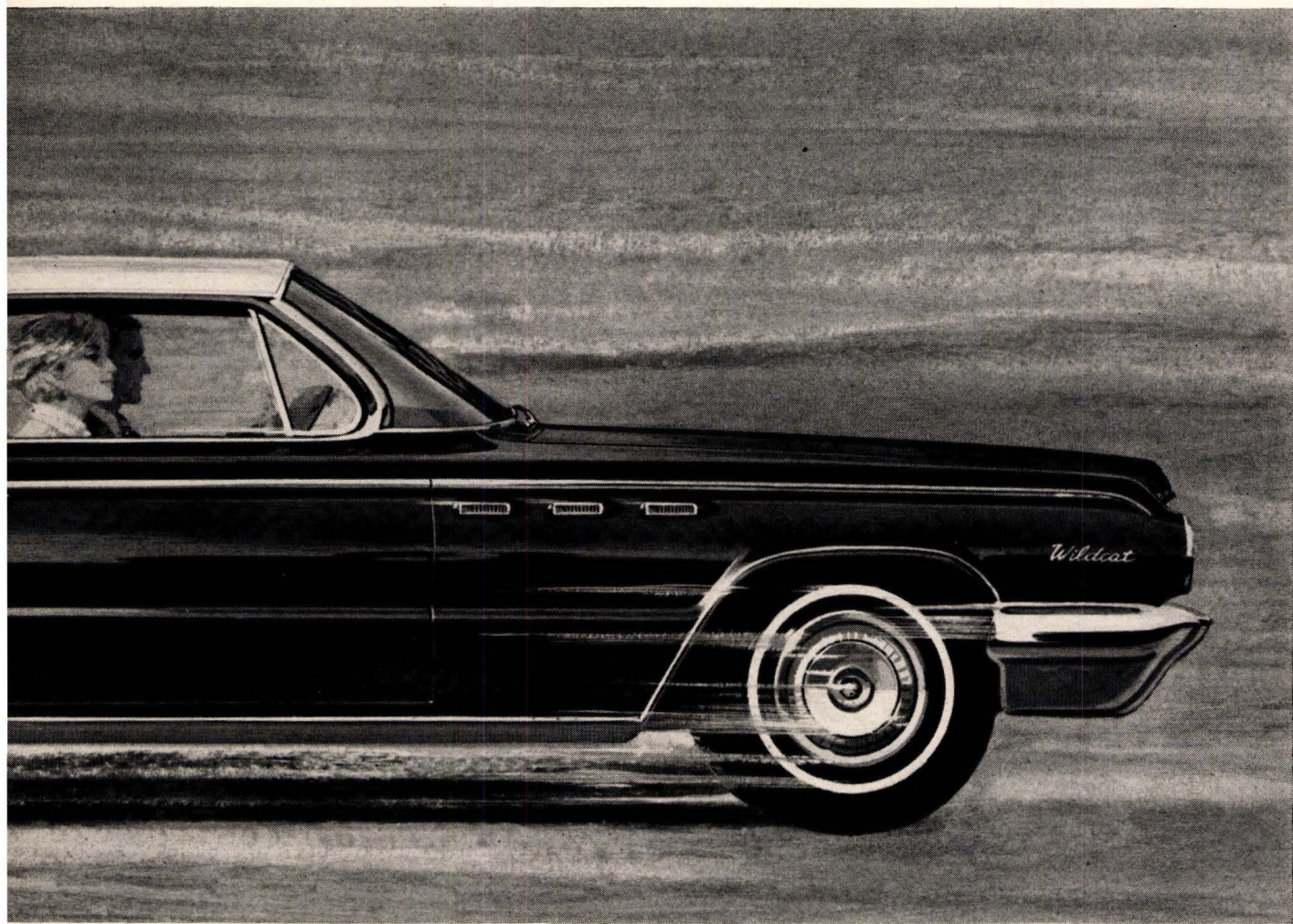


Close-up of Wildcat! shows you new medallion and unique fabric overlay (available in black or white).



Now—all the fun of red-hot, sports car action while you sit in the lap of luxury! The brand-new, sports-bred Buick WILDCAT! shows you how! Secret? Advanced Thrust that places the rip-snorthing Wildcat V-8 engine far forward over the front wheels. Gives you arrow-straight tracking even in crosswinds. Flat cornering. Instant wheel response. A totally new kind of sure-footed, explosive go. And, to

WILD CAT!



FIRST WITH THE SURE-FOOTED SOCK OF ADVANCED THRUST!

add to the excitement, there's a posh vinyl interior. Front bucket seats. Center console with illuminated tachometer and stick shift for automatic Turbine Drive, the smoothest transmission in any car. Exclusive Buick no-cost extra: finned aluminum front brakes for surer stopping. Good

suggestion: Hurry down to your Buick dealer's and drive this torrid new BUICK! But soon—he's in a happy Spring trading mood! Buick Motor Division—General Motors Corporation.

BUICK WILDCAT!

ONLY BUICK DEALERS HAVE THE NEWS FOR SPRING! NEW BUICK WILDCAT! NEW SKYLARK CONVERTIBLE!

SPOTLIGHT ON DETROIT

by Don MacDonald

THERE ARE PLENTY of 1962½ models to tempt those encouraged by the optimism shown by GM at the opening of the recent Chicago Auto Show, and most were displayed for the first time there.

Chevrolet showed a Monza "Spyder" Corvair, that for all practical purposes is a decked-out version of its long-awaited Corvair convertible. Special equipment on the Spyder will feature a 150-hp turbo-charged rear engine which compares to current Corvair engines of 80 and 102 hp. In addition, the Spyder will include a four-speed transmission and performance axle ratio, heavy-duty suspension and brakes, as well as a special full-gauge instrument cluster and identification. Production on the Corvair convertible and Monza Spyder units will begin in April.

Dodge had its 880 series, which is an amalgam of the current Dart and the longer (122-inch-wheelbase) Chrysler Newport. A new 410-hp, 413-cubic-inch V-8 engine with ram-tube manifold will be available as factory-installed optional equipment in 1962 Plymouth sedans, hardtops and convertibles and all Dodge Dart models except wagons, beginning in May. The new engine, called the Super Stock 413, will have an 11-to-1 compression ratio, a newly designed short ram-tube intake manifold, two four-barrel carburetors and a high-velocity exhaust system, as well as other high-performance components.

Ford and Mercury showed various bucket-seat models that are newly powered by engines ranging up to 407 hp. Both Oldsmobile and Corvair exhibited supercharged compacts due for early mass production.

For the first time in a number of years, futuristic "dream" cars were exhibited. These have been in temporary disrepute because Detroit decided that potential customers who saw them tended to wait for them to become a reality.

The Ford Cougar 406 headlined the Ford Division exhibit. Entrance to the two-passenger metallic-turquoise sports model is gained through top-hinged, electrically-operated gull-wing doors. Windows are of a unique jalousie style. Comfort-engineered bucket seats are recessed into the body interior. The aircraft-type control panel features a built-in rear-view mirror

which is lever controlled. It is powered by Ford's new high-performance 406 engine and has a console-mounted automatic transmission. Built on a 102-inch wheelbase, the Cougar is 180 inches long and only 49.5 inches high. Lee A. Iacocca, Ford Division general manager and company vice president, said, "Although we have no current plans for production of this car, it is more down-to-earth than a dream car. American in style and comfort, it has a distinct flavor of the European sports car. The Ford Cougar 406 adds up to push excitement on wheels."

Imports were exhibited in force, indicating their collective determination to hold on to a 400,000-unit niche in the U.S. market. Even GM's Roche does not dispute this possibility. He has renewed importation of the Opel and the Vauxhall after a one-year hiatus. Both cars have been redesigned to be more useful and saleable in this market.

Each Chrysler division, including Dodge truck, exhibited a turbine-powered vehicle — the cars prototypes of an officially announced experimental run for 75 select customers in 1963. Those to be sold, however, will have entirely different sheet metal, hand-built in a yet-to-be-selected Italian body shop.

THE CHICAGO AUTOMOBILE SHOW is always the nation's largest dealer-sponsored event. In years when no industry-sponsored show, or GM Motorama, is held, Chicago takes the spotlight for both fact and rumor.

One fact uncovered here — mainly because it happened here

Forecasts,



The logical and long-awaited addition of a convertible to the Corvair lineup is now official. Now available in the bucket-seat Monza series, this new soft-top will also be offered in a special Spyder edition with a turbo-supercharged engine (see page 30). It will have one of the lowest silhouettes of any car on the American road (height to door window is 33.5 inches). It will be offered with either manual operation for the top or an optional power assist.



Ford's latest dream car, the Cougar 406, headlined the company's big exhibit at the Chicago Auto Show. Entrance to the two-passenger metallic-turquoise sports model is gained through top-hinged, electrically-operated gull-wing doors. Built on a 102-inch wheelbase, it is powered by Ford's new 406 engine.

— is that Buick has been holding Pinkerton-guarded showings of a car destined to compete with the Thunderbird. Logically enough, registered owners of T-Birds were the invited guests, along with a sprinkling of those who preferred Cadillacs. The purpose was to see if the glistening prototype, a car more the size of the LeSabre than the Special, would tempt those non-price-conscious owners from their present favorite.

A few reporters who tried to sneak into the act on the pretext that they owned a T-Bird were outwitted by Buick planners. A company official called home while the reporters were at work, and of course, the unsuspecting wives said, "Oh no, we have an old Chevy wagon — there must be some mistake."

LEE A. IACocca, who heads Ford Division operations, stated that his company had "dropped" \$100 million on quality in the last two years. To both reporter and reader this lead might seem derogatory and not in the gray flannel tradition of good judgment in public utterances, until you break it down into such minor items as \$12 million in extra costs for a special kind of zinc-coated underbody sheet metal for Ford products. The current T-Bird has 238 pounds of this. It prevents rocker panels from rusting out in such places as Iacocca's home town of Detroit, where they put salt on the streets in winter.

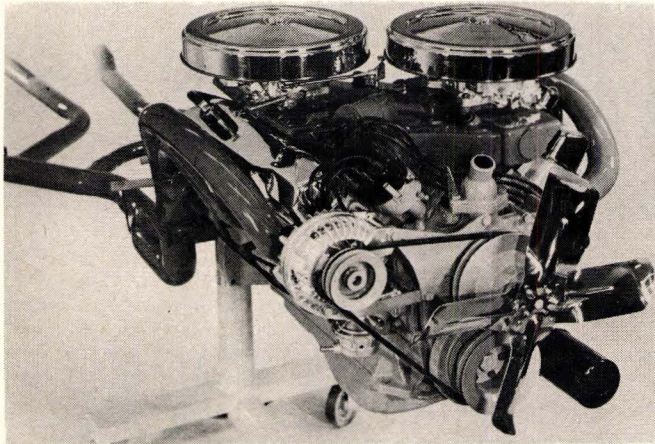
Another item, according to Iacocca, is approximately \$2 per car for self-adjusting brakes. Car prices, he noted, have not risen appreciably for the last three years, but the cost of quality and durability features like these brakes have been

absorbed. Even if they had risen he would have a good case, because brake adjustments on older cars without the self-adjusting feature cost money every 10,000 miles or so. As Iacocca puts it, Ford — and for that matter, every other company in the industry — is sacrificing service and parts income "to bet on the come."

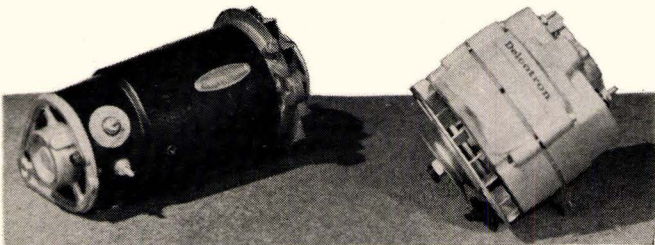
"We'll get it back five years from now," he said, as he held up "before" and "after" examples of Ford floor mats. The first mat, used on a 1961 model, had worn through in 25,000 miles of operation in Duluth. "They must drive with their ice skates on up there," Iacocca quipped, but in a more serious vein he pointed out that Ford this year had spent about \$1.50 extra per car for a kind of floor mat that would stand up even to ice skates. This looked like new after 65,000 miles of test in a taxi fleet.

A NEW FOUR-SPEED manual transmission is available as an extra-cost option on all Oldsmobile F-85 models. Fully synchronized in all forward gears, the shift control is mounted on the floor. Upshifting and downshifting can easily be accomplished to provide exceptional driver control and attain maximum capabilities from engine power. Gear ratios of the four-speed transmission are: 1st, 2.54:1; 2nd, 1.92:1; 3rd, 1.51:1; and 4th, 1:1. Reverse gear, not synchronized, has a ratio of 2.61:1. The buyer may select, at no extra cost, one of three axle ratios (3.36:1, 3.23:1, 3.08:1). Anti-slip differential is also available with the four-speed transmission as an extra-cost option.

Facts and Rumors



A new 410-hp, 413-cubic-inch V-8 engine with ram-tube manifolding will be available as a factory-installed option on Plymouths and Dodge Darts beginning this month. The big powerplant will have an 11-to-1 compression ratio, a newly designed short ram-tube intake manifold, two four-barrel carburetors and high-velocity exhaust.



Alternators, such as the compact unit shown at right above, are now installed on 1962 Pontiacs. Replacing the standard generator, left, the Delcotron unit weighs 10 pounds and can deliver one-fourth of its output at idle.

Studebaker will once again offer a supercharged version of its Hawk and possibly Daytona line. The company will also produce a plastic-bodied sports hardtop.

Rumors that the Valiant-Lancer twins would offer a convertible for 1963 are false. Rumors that the remaining body shells possible would be all-new are true.

Larger Chrysler products will have a more than usual face-lifting, and the Dodge Dart will no longer be priced or sized in the Plymouth category.

Amber-colored front turn signals will appear on U.S. motor vehicles starting with the 1963 model year. The change from the white lights in present usage is being made on the recommendation of the Automobile Manufacturers Association Board of Directors. The move results from an industry-wide project started in 1958 to re-evaluate all motor vehicle lighting and signaling components. It is the first of numerous lighting changes expected in the next few years. Still under intensive study is a dual-intensity system which would increase daytime brightness of signals two to four times over that of present signals. Engineers from lamp and vehicle manufacturers taking part in the project found that amber turn signals were more easily seen than white against glaring reflections and provided greater contrast against headlights at night. Tests were conducted in different parts of the country under a variety of conditions.

CORVAIR



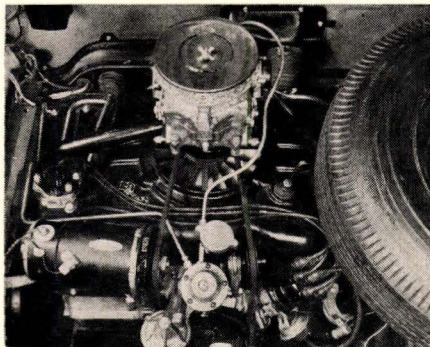
**40%
more
GO!**

(Dyno proven)

with the subtle **POWER TWINS**

* RAM INDUCTION MANIFOLD KIT

Uses Chevrolet 4-barrel Carter carburetor (doubles venturi area for more go) with Corvette air filter.



Corvaair Ram Induction Manifold Kit, No. 255 **\$69.95**

Corvaair Ram Induction Manifold Kit complete with 4-barrel carburetor & air filter, No. 255X **\$132.50**

* DUAL MUFFLER KIT

Decreases noise • Decreases back pressure
INCREASES GO!

Corvaair Dual Muffler Kit (uses original muffler plus an additional Chevrolet muffler, not included), No. 260 **\$34.95**

Corvaair Complete Dual Muffler Kit, with one muffler, No. 260X **\$45.30**



See your dealer or order direct from ...
**POST OFFICE BOX 668 M
RIVERSIDE, CALIFORNIA**

Enclosed is \$_____. (California residents add 4% sales tax.) Send me the following:

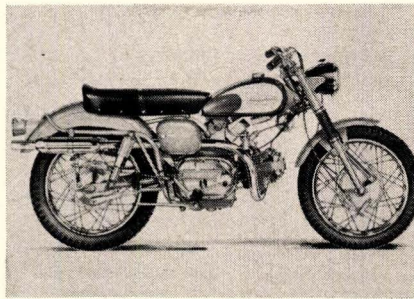
- Ram Induction Kit, No. 255, **\$69.95**
- Complete Ram Induction Kit, No. 255X, **\$132.50**
- Dual Muffler Kit, No. 260, **\$34.95**
- Complete Dual Muffler Kit, No. 260X, **\$45.30**

Ship to _____

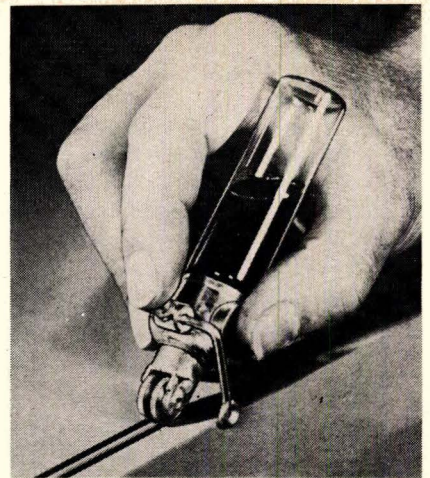
Name _____

Address _____

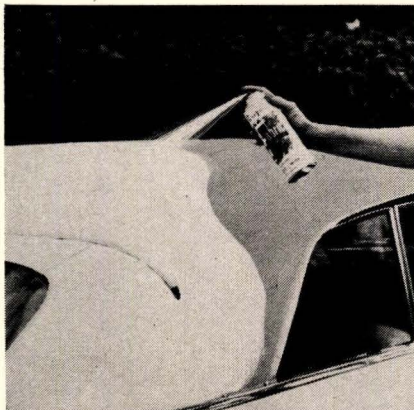
NEW PRODUCTS



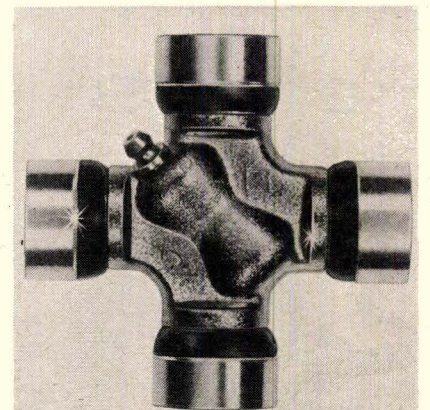
SPRINT H, Harley-Davidson's new 250cc motorcycle, is designed to meet the needs of scrambles and enduro riders as well as road riders. It is powered by a hotter version of the engine used in the Sprint; compression ratio is upped to 9.2:1.



NEW PRECISION striping tool makes it easy to apply decorative stripes, one or two at a time, on practically any surface. Complete with wheel tip assemblies to make five combinations of stripes; \$3.50. J. C. Whitney & Co., 1917 Archer Ave., Chicago, Ill.



NU KOTE color spray for vinyl and fabrics can be used to rejuvenate convertible tops, door panels, head liners, flooring, dashboards and upholstery. Sixteen colors available in 16-oz. aerosol cans. Write Pressure Pak, Inc., West Palm Beach, Fla.

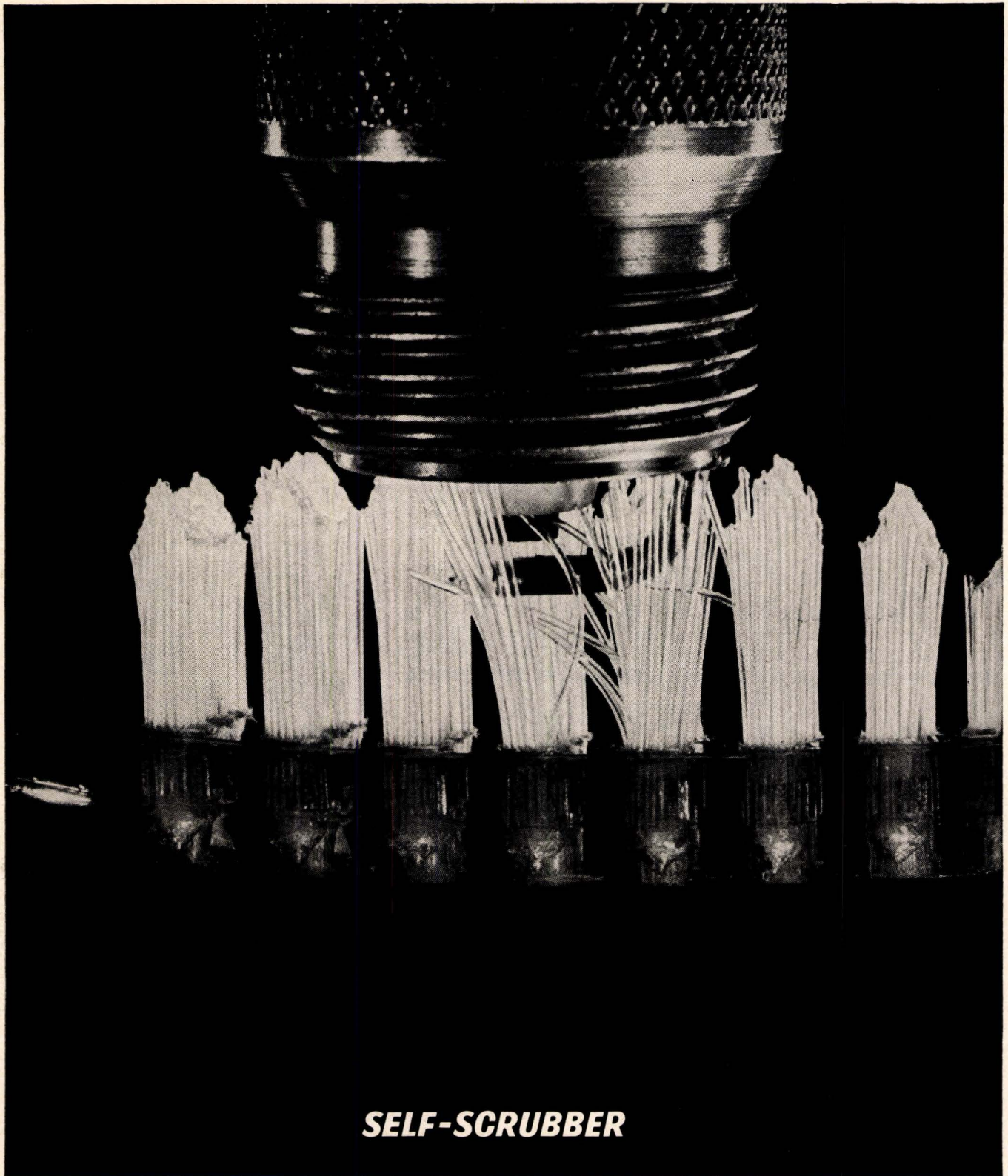


NEW UNIVERSAL JOINTS, 24-kt. gold plated and specially engineered for modern high-speed driving, are guaranteed for lifetime of vehicle, as long as ownership does not change. More information from Wesco Products, 2300 S. Parkway, Chicago 16, Ill.



SPLIT-LEVEL CAMPING is offered by Kay-Dee in this new compact cartop camper, which opens like a clamshell into a complete camp home in less than five minutes. Upstairs has room to sleep four adults; there is room downstairs for cooking, eating and relaxing. Kay-Dee is made of gray cotton Vivitex, white molded fiberglass, aluminum, and plastic-coated plywood. Total weight is 160 pounds. KD-4, illustrated, with cartop carriers and ladder, sells for \$279.95. Order from Kay-Dee Kamper Co., 307 E. 8th St., Holland, Mich.





SELF-SCRUBBER

WHAT YOU SHOULD KNOW ABOUT THE SPARK PLUG THAT CLEANS ITSELF WHILE YOU DRIVE.

First off, it cleans itself with the heat of your engine. Autolite Power Tip spark plugs extend a bit deeper into your combustion chamber. Not much deeper. Just enough so that potentially

harmful deposits get little chance to accumulate. They're burned right up and out the tailpipe. That's why your Autolite spark plugs stay cleaner.

That is why your car runs better. That is also why you don't have to buy so much gasoline. One other point you should know about the

spark plug that cleans itself while you drive. Ford Motor Company now installs Autolite Power Tip spark plugs as original equipment on every new car it builds. Other manufacturers use them too.

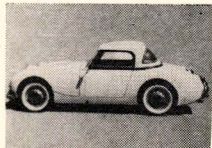
Next time you change spark plugs, stick in some self-scrubbers . . . some Autolite spark plugs.

SPARK PLUGS • BATTERIES • SERVICE PARTS

 **AUTOLITE**

THE NAME TO REMEMBER WHEN YOU CARE FOR YOUR CAR

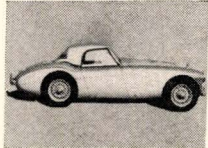
REMOVABLE HARD TOPS & DOUBLE SLIDING SIDE PANELS



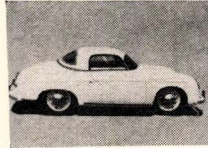
A/H Sprite thru 62



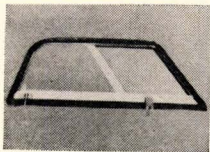
A. Healey thru 62



A. Healey thru 56



Porsche thru 62



Double sliding side panel

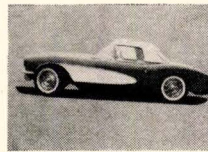
PRICED AS FOLLOWS:

A/H Sprite\$54.70
Porsche\$54.70
A. Healy thru '56...\$61.02
MGA\$61.02



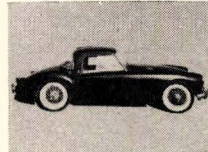
Sunbeam Alpine Top

Triumph\$76.43
Jaguar\$76.43
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Corvette top available for all models

Top and sliding side panel units available for the SPRITE, MGA, TRIUMPH, MG-TD and TF, JAGUAR, PORSCHE and AUSTIN-HEALEY thru 56 at unit price. Tops not requiring side panels available for the JAGUAR XK-150, AUSTIN-HEALEY 57-61, ALFA ROMEO, ALPINE SUNBEAM, FIAT, THUNDERBIRD, and all other sports cars. GUARANTEED FIT, and all weather protection. Prompt deliveries.



MGA thru 62

SPECIFY MODEL AND YEAR OF CAR when writing for free brochure, on tops or panels.
50% on order — Balance C.O.D.

Dealers Inquiries Invited

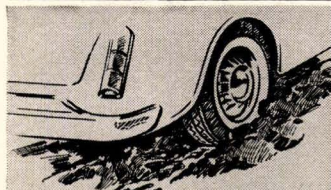
Write for our new prices and designs for 1962.

PLASTIC DYNAMICS SALES CORPORATION

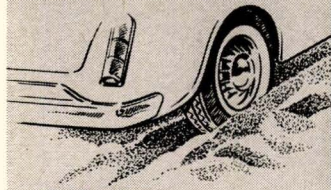
Engineers & designers of reinforced plastics

432 E. Weber Ave., Compton 2, California

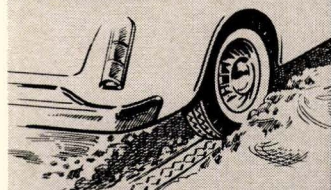
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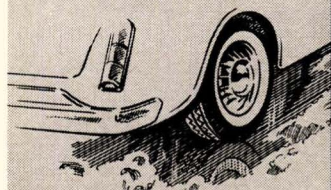
MUD ...



SAND ...



SNOW ...



OR ICE ... YOU GO WITH LIMITED SLIP DIFFERENTIAL!

YOUR CAR GOES ANYWHERE, ANYTIME— WITH A LIMITED SLIP DIFFERENTIAL!

Protects You From Getting Stuck In Mud, Sand, Snow or Ice!

In fair weather or foul—on or off the pavement—when your car's equipped with a limited slip differential you take off and go. This amazing device automatically directs the power to the rear wheel with the greater traction. It keeps you out of trouble and keeps you on the go. . . . So, order your next car factory-equipped with a limited slip differential and enjoy the thrill of peak performance.

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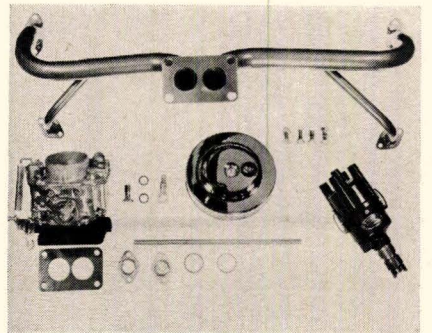
DANA CORPORATION
Toledo 1, Ohio

NEW PRODUCTS

continued



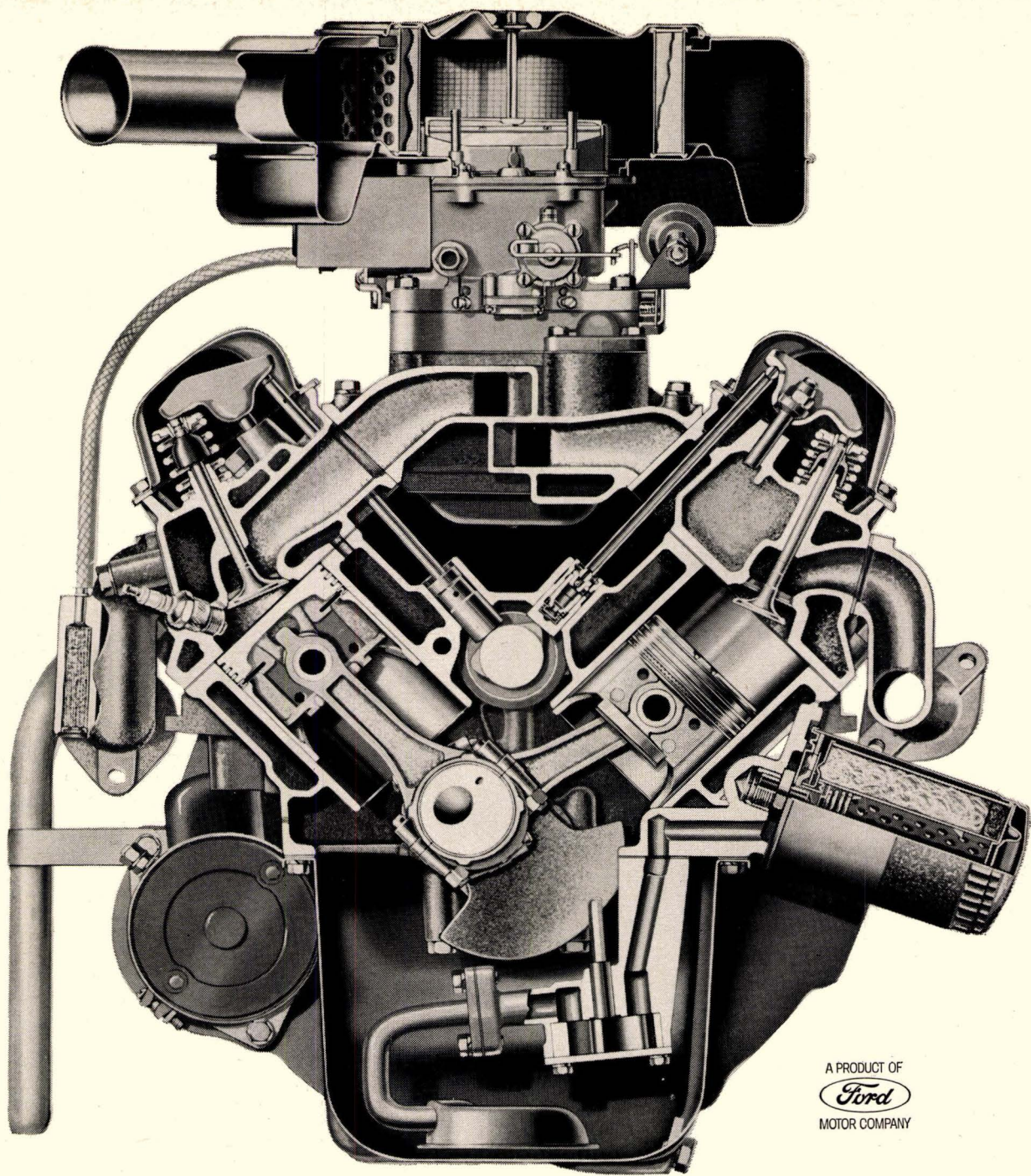
A NEW LOOK for the "beetle" is possible with the La Plaza hood, a fiberglass replacement unit for the front hood of the VW. Existing fastenings and hinges can be used. Available from Small Car Essentials, P.O. Box 51, Kenmore, N.Y.



MORE POWER for the Volkswagen is offered by EMPI's ram-induction manifold kit for the '61-'62 engine, designed to produce more power through freer engine breathing. Complete kit, Model 6M, sells for \$149.50, from EMPI, P.O. Box 668, Riverside, Calif.



SPLIT-FRONT tonneau covers for all compact convertibles are offered for flip-top enthusiasts. Made of original-equipment top material, they sell for \$39.95, plus \$9.75 installation charge. Valley Trim Inc., 14540 Erwin St., Van Nuys, Calif.



A PRODUCT OF

 MOTOR COMPANY

Potential? Fairlane fires the second stage!

When engine buffs first saw a cross-section of Fairlane's Challenger 221 V-8 they said: "Aha! Look at all the horses hiding in that little corral!"

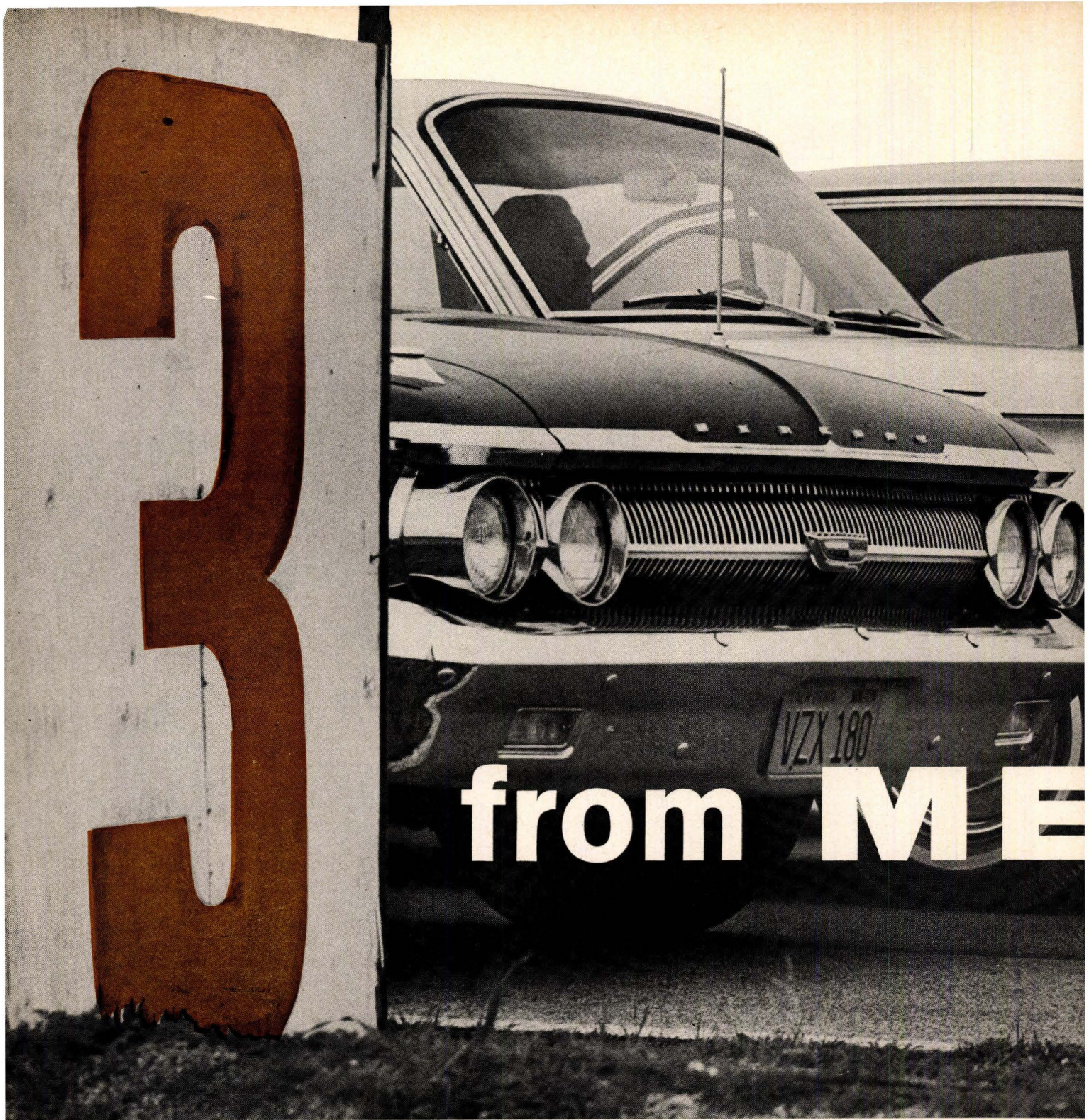
And they were right. Because here comes Fairlane with the second stage, hollowed out to 260 cubic inches... and the horsepower has jumped up to a very brisk 164. Torque is a sturdy 258 pounds-feet and (cheers) the diet is still "regular" gas. This extra-cost

option, linked to Fairlane's nimble bulk-free size, sizzles out a level of performance that warms any honest citizen's heart.

Of course, there are always the strange ones who can't look at a little gem like this without mentally pulling out the boring bar, the big valves, the "wild" cams, etc. Who can blame them, confronted by this potential, only 20 inches wide across the mani-

folds, 27.8 inches long, 465 pounds of precision-molded cast iron—ready to breathe deep and go! Well, let them dream; can we help it if we built a classic?


FORD V-8



from M E

WHEN A MANUFACTURER offers more than one type of car (as most of them do), we always welcome the chance to test them as a group. Unfortunately, this is very seldom possible. To get really conclusive results, the test car should be lived with for at least two weeks, and no less (preferably more) than 1000 miles should be recorded on it. Work loads and scheduling (theirs and ours) or unavailability of certain test cars usually restrict us to one car from any one manufacturer at a time. This month everything fell into place, and we were able to grab off all three of the cars that Mercury is offering for 1962.

The MOTOR TREND test group consisted of the 114-inch-wheelbase luxury compact, Comet S-22; the 116.5-inch-wheelbase "in-between"-sized Meteor; and the 120-inch-wheelbase

top-of-the-line Monterey Custom. The Comet and Meteor were both two-door sedans, while the Monterey was a convertible.

The Comet and Monterey have undergone the face-lifting route to update them from the '61 models, but the Meteor is an all-new addition to the line this year. It shares the same basic shell as the Ford Fairlane but has an inch-longer wheelbase, is 6.8 inches longer overall, and has 14-inch wheels in place of the Fairlane's 13. The same engines, drive components and suspension are used in both cars.

All three of the Mercs bear a strong family resemblance when viewed from the front, and all three feature styling that is clean and smooth-lined (see MT, November and December, 1961, for the complete Mercury styling story). All three also



by Jim Wright, Technical Editor

a complete check-out
of the full Mercury lineup,
from compact to conventional

MERCURY

- COMET
- METEOR
- MONTEREY

PHOTOS BY BOB D'OLIVO

share the same basic purpose, that of a medium-priced (in their respective size groups), family-type transportation vehicle that offers the buyer a bit more luxury and quality than can be had in the low-price field.

The Comet test car came equipped with the optional 170-cubic-inch, 101-hp, ohv in-line Six engine, two-speed automatic transmission with 4-to-1 rear axle and air conditioning, but no power accessories. Standard engine for the Comet is a 144-cubic-inch Six, but even with the big engine, performance is so lacking that we would hesitate to recommend this setup to anyone. The Comet's 0-30, 0-45 and 0-60 mph times were 6.5, 11.9 and 22.2 seconds. It took 24.1 seconds to get to 61 mph at the end of the quarter-mile. On the top end it

was breathing hard at 75 mph, but if the long Riverside Raceway's back stretch had been longer, the car would probably reach 80 or more. Taking into consideration the fact that the 170-cubic-inch engine was originally designed for the smaller, much lighter Ford Falcon, we don't see how one could expect any better performance than this.

Our Meteor had the optional 221-cubic-inch, 145-hp, ohv V-8, two-speed automatic transmission with 3.5-to-1 performance rear axle and power brakes and steering. Our acceleration figures show that the Meteor's performance is about average for its class. We made the 0-30, 0-45 and 0-60 mph runs in 5.0, 8.7 and 15.2 seconds. The quarter-mile was run at 70 mph and 21.5 seconds, and at the end of the Riverside straight

3 from Mercury

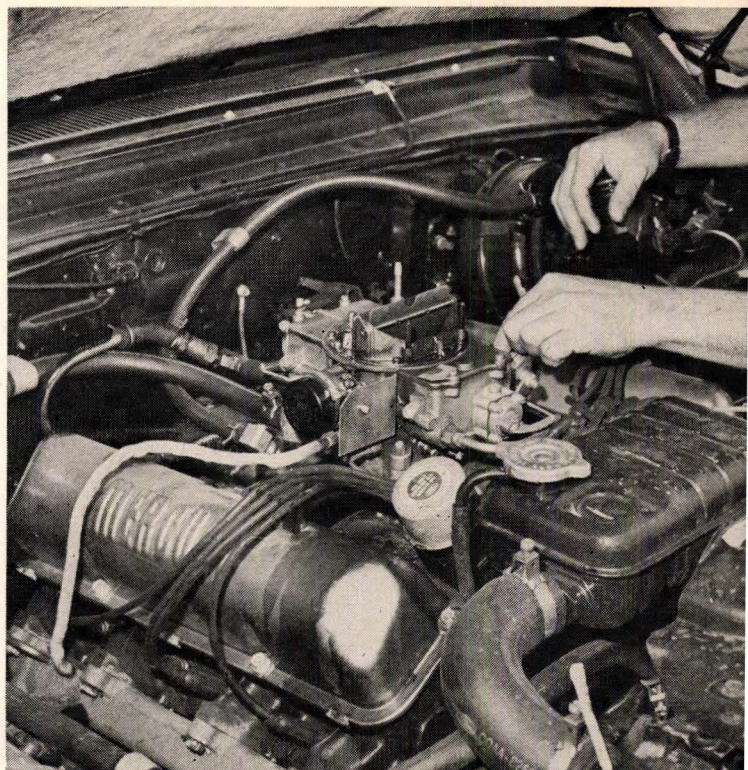
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the Meteor was flat out at 95 mph. Standard engine for this car is the same 170-incher used in the Falcon and Comet — 'nuff said.

All the power goodies, including seat and windows, were on the Monterey. This definitely dictated the choice of the 390-cubic-inch, 300-hp (four-barrel carburetor) ohv Marauder V-8 that was installed. Power was transmitted through a dual-range, three-speed Merc-O-Matic and 3-to-1 rear axle. Performance on this one would fall somewhere near the upper end of average for the class. Our 0-30, 0-45 and 0-60 mph averages were a respectable 4.1, 6.7 and 10.5 seconds. The end of the quarter-mile was reached in 18.9 seconds, with a terminal speed of 81 mph. At the end of the Riverside straight our Weston electric speedometer was recording an actual 110 mph, while the tach was reading 4300 rpm. The big Merc didn't seem to be laboring at this point and no doubt had a few more mph left.

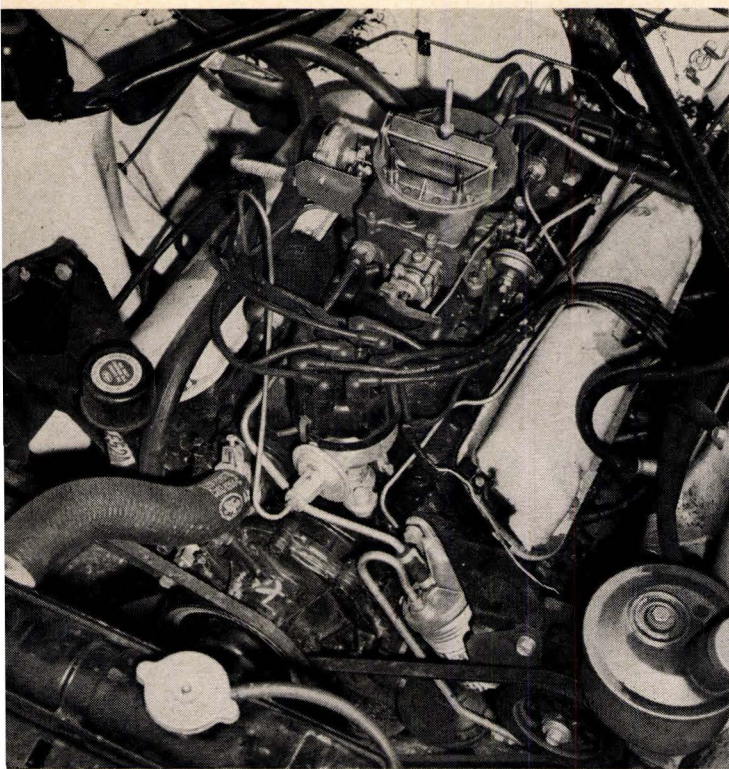
In summing up the performance figures, we can only draw the rather obvious conclusion that both of the smaller Mercs are hampered by an overweight, underpowered condition that isn't helped a bit by the power-wasting two-speed automatic transmission. Several other manufacturers are also using this device, but we hope that more aren't considering it. The installation of the three-speed manual in both cars would improve performance greatly.

Two-ton-plus Monterey is surprisingly sure-footed on all types of surface. Lean is almost non-existent.

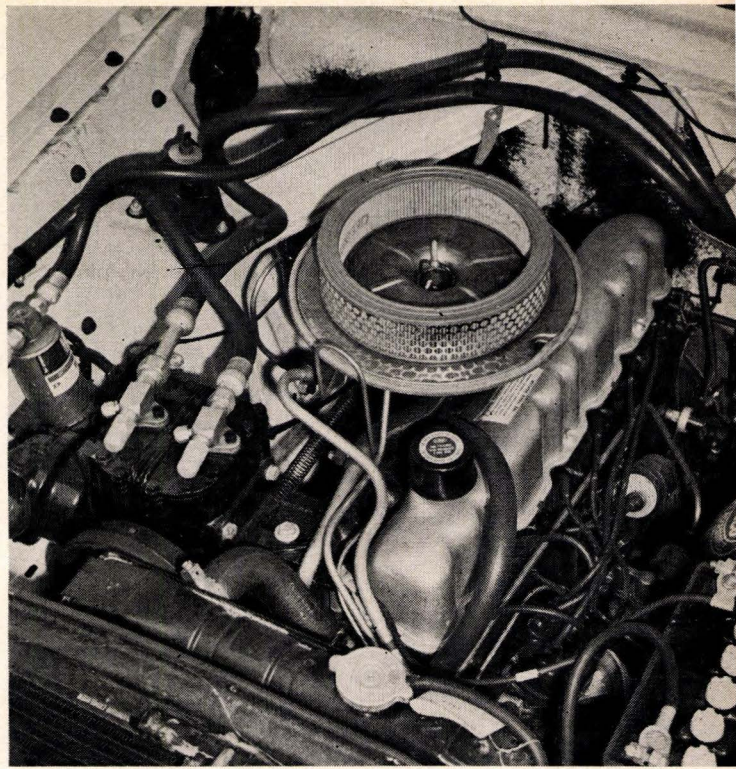


The Holley four-barrel installed on the big Marauder V-8 uses air velocity to actuate the secondary throttles. Mixture heat is supplied by water instead of exhaust.





Meteor's 221-cubic-inch V-8 has its weight set back from the front wheels, which results in better balance and eliminates any hint of nose-heaviness in the car.



Comet's 170-cubic-inch, 101-hp Six is out of its league in a car this size. The car would be a much more appealing package if it came with the Meteor's engine.

Prospective Meteor buyers will be happy to note that a more powerful, 260-cubic-inch version of the V-8 will soon be available. Too bad the factory hasn't decided to put the 221-incher in the Comet. The Monterey is also an overweight car (two tons plus), but the factory has crammed enough horsepower into it to overcome this. Also available is the big 406-inch, 405-hp high-performance mill with four-speed manual gearbox and a variety of rear axle ratios. But as we stated before, these cars were designed for family-type transportation and with the exception of the Comet, their performance is adequate for this.

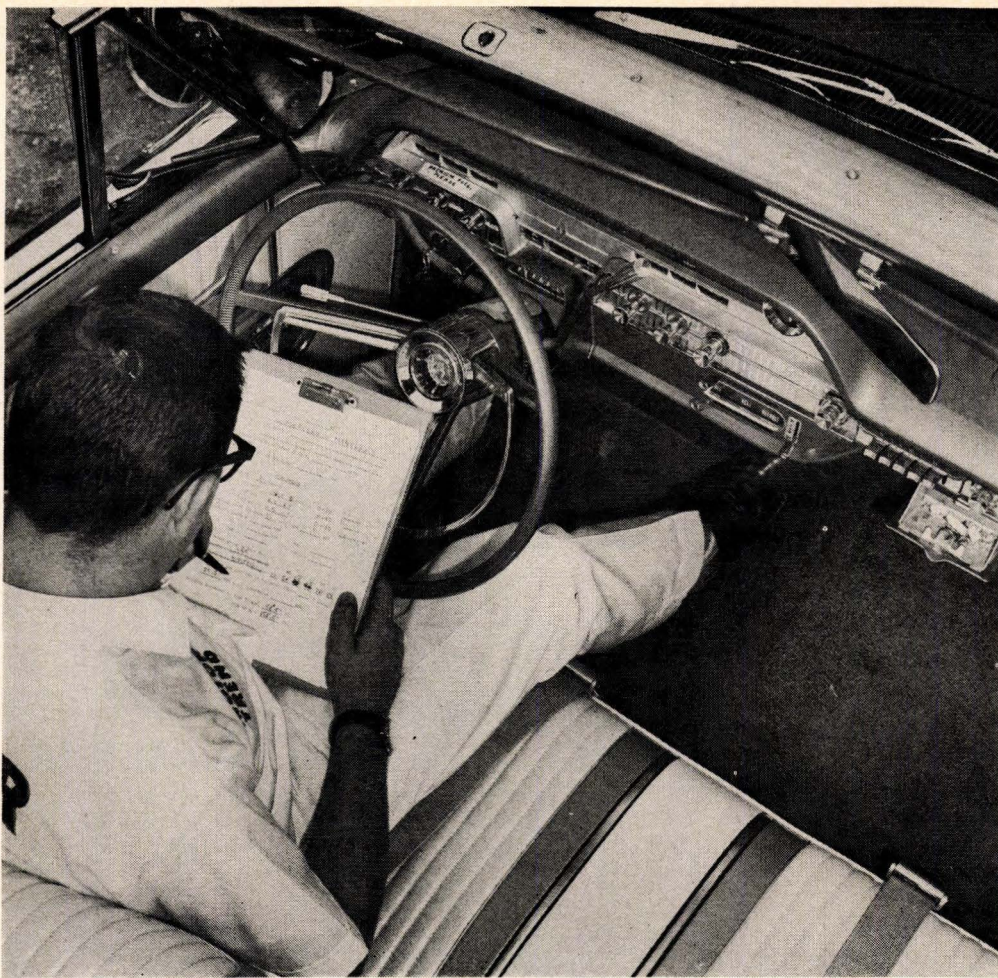
If you're an avid reader of advertising claims, our fuel consumption figures are less than you'd expect — especially for the Comet and Meteor. These two are being touted as economy cars and by rights they should be, but again, the weight and two-speed transmission problems combine to produce results that say otherwise.

City and freeway driving in the Comet produced figures in the 15.7-to-16.3-mpg range, with an overall average of 16.2 mpg for 1000 miles under all conditions. The Meteor was driven in excess of 1100 miles, with city driving consumption in the 11.3-to-14.8-mpg range. Freeway and open-road speeds pushed the figure up to 17.7 mpg, and the overall average was 14.8 mpg. The Monterey is a big car with a big engine and an appetite to match. A rundown of our figures compiled for everyday city driving shows the range to be 8.9 to 11.3 mpg. Out on the road at cruising speeds with short passing spurts up to 75 mph, we found that the 3-to-1 rear axle allows the big mill to loaf a bit and we were getting a consistent 15.5 mpg. Overall average for 1000 miles was 10.9 mpg.

Some of the Monterey's low around-town figures can be attributed to the four-barrel carburetor. The secondary throttles are actuated by the velocity of the air-fuel mixture through the primary barrels and are consequently open more than they would be if a mechanical progressive system were used. It will also be noted that the Meteor delivered a better figure at



Usable trunk area should be adequate for the needs of most everyone. The lip on all three could be lower.

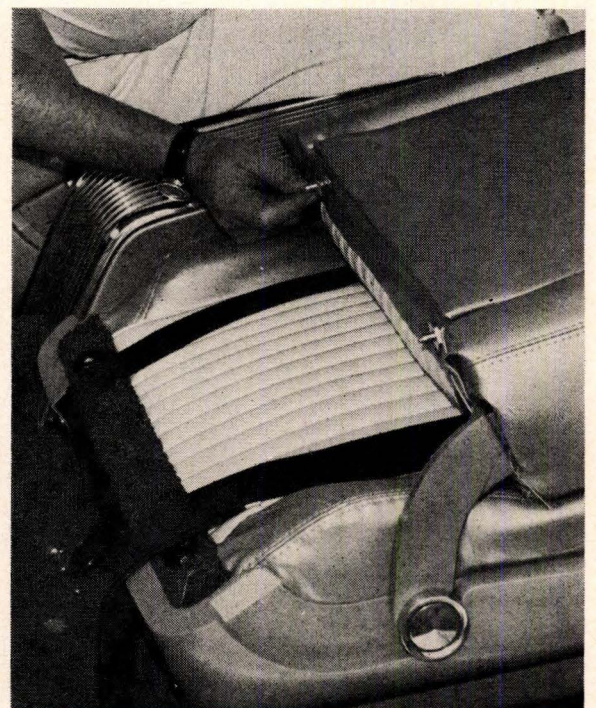


3 from Mercury

continued

Seating position on the Monterey was the most comfortable. Electric window buttons and door handle could have been placed differently — we kept banging both with our left knee.

Meteor steering wheel (right) was a little close for comfort, but not nearly as bad as the Comet's. Leg-, hip- and headroom are adequate in all three cars.



We couldn't get the seat back far enough to suit us in the Comet. Steering wheel's diameter is excessive for the room available. We did like the catches on the front seatbacks that kept them from slamming forward when brakes were applied.



cruising speeds than did the Comet. This is because at 65 mph the bigger V-8, with bigger tires and a 3.5 axle, is still fairly loafing at 3000 rpm, while the smaller Six in the Comet is almost straining at 3750 rpm to pull the smaller tires and 4-to-1 axle.

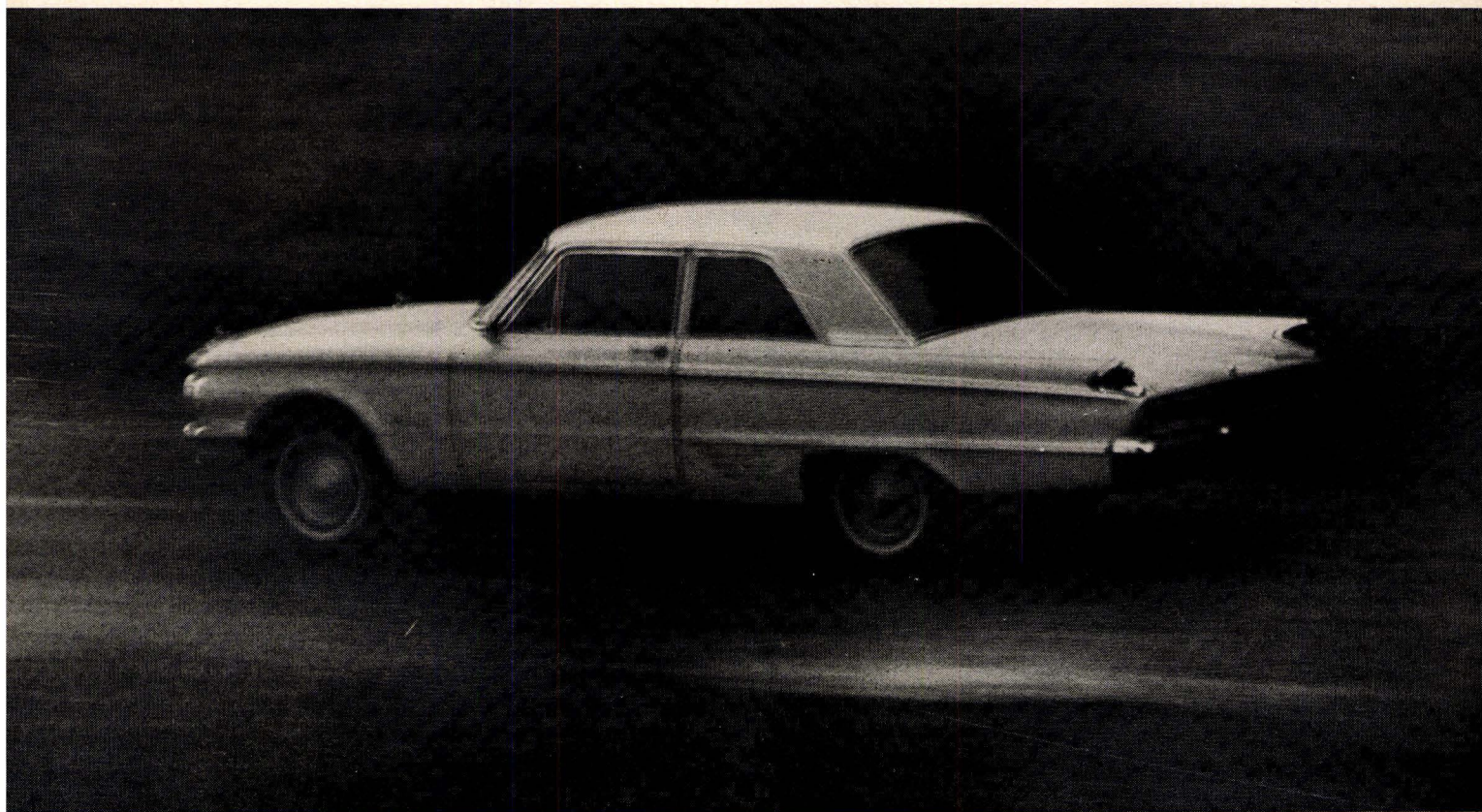
The Comet does weight 400 pounds less than the Meteor, but at the same time, its weight-to-power ratio is greater than the Meteor's (24.68 to 1 against 20.75 to 1 — National Hot Rod Association Stock Car Classification Guide). Standard axle for the Comet is 3.20 to 1 and *should* produce better mileage figures but *probably won't* because the throttle would be floor-boarded constantly in an effort to keep up with the normal traffic flow.

We hate to keep picking at the Comet, but we also found it to be lacking in stopping power. Before we ran the braking tests, the nine-inch units seemed adequate for normal, everyday use. In the test area they survived several hard stops from 30 mph but about halfway through the first brake-down from 60 mph we could feel the pedal pressure rapidly increasing and our rate of deceleration rapidly decreasing. After this, the brakes never were quite the same. The pedal pressure was abnormally high, and the deceleration rate was much slower.

The ten-inch brakes on the Meteor were power assisted and operated much better. We didn't have the trouble with fade and pressure build-up with these, but they did have a tendency to lock up suddenly and without warning, which necessitated fast and constant steering corrections on our part to keep the car in a straight line. There was some fade apparent after the tests, but as the brakes cooled they came back to normal.

The Monterey had the best-behaving brakes of the three. These were 11-inch, power-actuated units that pulled the big car down to quick, straight-line stops with no sudden lockups. Several panic stops produced a slight amount of fade and pedal hardness but this was negligible and things returned quickly to normal as the brakes cooled.

continued



METEOR USES THE SAME BASIC BODY SHELL, ENGINE AND SUSPENSION COMPONENTS AS THE FORD FAIRLANE, BUT ON A LONGER WHEELBASE.

3 from Mercury

continued

We couldn't find a thing to argue about in the ride and handling departments. The suspension on all three cars is firmer than any we've encountered on any of the other '62s, and all three incorporate a stabilizer bar at the front end. As a result, they corner with much less lean than any of the current domestic cars (with the exception of the Fords, which are set up the same way). Even with the firm suspension, the ride is as comfortable as anyone would want it to be. Both the Meteor and the Monterey use Mercury's "Cushion-Link" suspension, introduced last year. This allows both the front and rear wheels to move rearward as well as up and down under road shocks, and as a result, the harshness is taken out of severe bumps and jolts.

On rough, secondary-type roads the three Mercs are well behaved. The suspension doesn't bottom easily but when it does, the cars recover immediately. On the open road all three have good directional stability and are little affected by crosswinds. Thanks to the excellent selection and use of sound-

We gave all three a bath in frame-deep goo, and they all charged through without bogging down. Good weight distribution and firm suspension mean good control anywhere.

deadening materials, the Mercs are among the quietest-riding cars on the road. Engine noise level is a trifle high in the Comet, but road noise is almost non-existent in all three at cruising speeds.

Traction is very good on loose, wet surfaces or in frame-high mud. We spent the better part of two days, and several hundred miles, up in the mountains on some very tight, wet, twisty roads. As a result, we have a new respect for the cornering power of the Mercurys. They are basic understeerers but not excessively so. They will plough slightly on tight corners but a little fast work with the throttle will bring the rear end around. On wider-radiused turns the Mercs can be pushed hard.

We usually shudder at even the thought of putting a stock domestic through any kind of a corner at a velocity even slightly close to the limit of adhesion. Because they do corner so flat that the weight remains over the tires where it belongs, we found that the Mercs could be put into a neat, easily con-



MERCURY COMET S-22

2-door, 5-passenger sedan

OPTIONS ON CAR TESTED: 101-hp engine, automatic transmission, radio, heater, air conditioning, padded dash and visor.

BASIC PRICE: \$2368

PRICE AS TESTED: \$2991.55 (plus tax and license)

ODOMETER READING AT START OF TEST: 91 miles

RECOMMENDED ENGINE RED LINE: 5000 rpm

PERFORMANCE

ACCELERATION (2 aboard)

0-30 mph.....	6.5 secs
0-45 mph.....	11.9
0-60 mph.....	22.2

Standing start 1/4-mile 24.1 secs. and 61 mph

Speeds in gears @ 4400 rpm

1st	48 mph	High	81 mph (est.)
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Speedometer Error on Test Car

Car's speedometer reading	30	45	50	60	70
Weston electric speedometer	29.5	44.5	49.5	59.5	69.5

Observed miles per hour per 1000 rpm in top gear

.....	17 mph
-------	--------

Stopping Distances — from 30 mph, 56 ft., from 60 mph, 173 ft.

SPECIFICATIONS FROM MANUFACTURER

Engine

Ohv in-line 6
Bore: 3.5 ins.
Stroke: 2.94 ins.
Displacement: 170 cubic inches
Compression ratio: 8.7:1
Horsepower: 101 @ 4400 rpm
Torque: 156 lbs.-ft. @ 2400 rpm
Horsepower per cubic inch: 0.59
Ignition: 12-volt coil

Rear: 5-leaf semi-elliptic springs, rigid axle; direct-acting tubular shocks

Steering

Recirculating ball and nut
Turning diameter: 39.9 ft.
4.64 turns lock-to-lock

Wheels and Tires

Steel disc — 4 lugs
6.00 x 13 2-ply tubeless tires

Brakes

Hydraulic, dual-servo; self-adjusting
Front: 9-in. dia. x 2.25 in. wide
Rear: 9-in. dia. x 1.50 in. wide
Effective lining area: 114.3 sq. ins.

Body and Frame

Unitized
Wheelbase 114.0 ins.
Track, front 55.0 ins., rear 54.5 ins.
Overall length 194.8 ins.
Curb weight 2711 lbs.

Gearbox

2-speed automatic; column shift

Driveshaft

One-piece, open tube, with 2 cross-type U-joints

Differential

Hypoid — semi-floating
Standard ratio 3.50 (Optional 4:1 installed on test car)

Suspension

Front: Independent, single lower arm, coil springs, with stabilizer bar; direct-acting tubular shocks

trolled, four-wheel drift with very little effort. We don't recommend that, of course, but it is nice to know it can be done in a pinch.

The Meteor and the Monterey had power-assisted steering, which helped out nicely for in-town driving in heavy traffic. By comparison, the Comet steering at 4.64 turns lock-to-lock and no power assist was sluggish and tiring. Standard lock-to-lock turns on the Meteor and Monterey are 4.68 and 5.25, but with power are 4.34 and 3.75, respectively.

Exterior and interior quality and workmanship are excellent throughout the Mercury line. All panels, doors and trim were flush fit and well aligned.

For our personal configuration (5-11½, 180 pounds), we found that the Monterey offered the best seating position. In the Meteor we were slightly close to the steering wheel and in the Comet we were right on top of it. The Comet's 17-inch steering wheel is also too large for the space available. All

three offered plenty of hip-, leg-, and headroom for both driver and passengers (front and rear), but we kept opening the power windows on the Monterey with our left knee.

All three feature well-laid-out instrument panels with all instruments (the Meteor is the only one of the three with *real* gauges) and controls in easy sight or reach. Do-it-yourself tuners and tinkerers will be happy with the accessibility of everything in the engine compartment.

Total trunk volume on all three should be adequate for the average family. The Meteor, with 31.5 cubic feet, has the largest, followed by the Monterey with 30.7 and the Comet with 29.8.

In summing up, we might add that performance is not, and never has been, synonymous with quality. What the Mercs might lack in the first, they more than make up in the latter. Last year they were a solid sixth in total sales, which shows that there's still a big market for a quality product. /MT



MERCURY METEOR

2-door, 6-passenger sedan

OPTIONS ON CAR TESTED: 145-hp engine, automatic transmission, radio, heater, power brakes, power steering.

BASIC PRICE: \$2469

PRICE AS TESTED: \$2952.30 (plus tax and license)

ODOMETER READING AT START OF TEST: 2778 miles

RECOMMENDED ENGINE RED LINE: 5000 rpm

PERFORMANCE

ACCELERATION (2 aboard)

0-30 mph	5.0 secs.
0-45 mph	8.7
0-60 mph	15.2

Standing start ¼-mile 21.5 secs. and 70 mph

Speeds in gears @ 4500 rpm

1st	52 mph	High	95 mph (est.)
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Speedometer Error on Test Car

Car's speedometer reading	30	45	50	60	70	80
Weston electric speedometer	30	45	50	60	70	80

Observed miles per hour per 1000 rpm in top gear21 mph

Stopping Distances — from 30 mph, 50 ft.; from 60 mph, 166 ft.

SPECIFICATIONS FROM MANUFACTURER

Engine

Ohv V-8
Bore: 3.50 ins.
Stroke: 2.87 ins.
Displacement: 221 cubic inches
Compression ratio: 8.5:1
Horsepower: 145 @ 4500 rpm
Torque: 217 lbs.-ft. @ 2200 rpm
Horsepower per cubic inch: 0.64
Ignition: 12-volt coil

Rear: Rigid axle, 5-leaf semi-elliptic springs; direct, double-acting tubular shocks

Steering

Recirculating ball and nut, with power assist
Turning diameter: 39.5 ft.
4.3 turns lock-to-lock

Wheels and Tires

Steel disc — 5 lugs
6.50 x 14 4-ply tubeless tires

Brakes

Hydraulic, duo-servo. Single anchor, internal expanding; self-adjusting
Front: 10-in. dia. x 2.25 in. wide
Rear: 10-in. dia. x 1.75 in. wide
Effective lining area: 120.5 sq. ins.

Body and Frame

Unitized
Wheelbase 116.5 ins.
Track, front 57.0 ins., rear 56.0 ins.
Overall length 203.8 ins.
Curb weight 3224 lbs.

Gearbox

2-speed automatic; column shift

Driveshaft

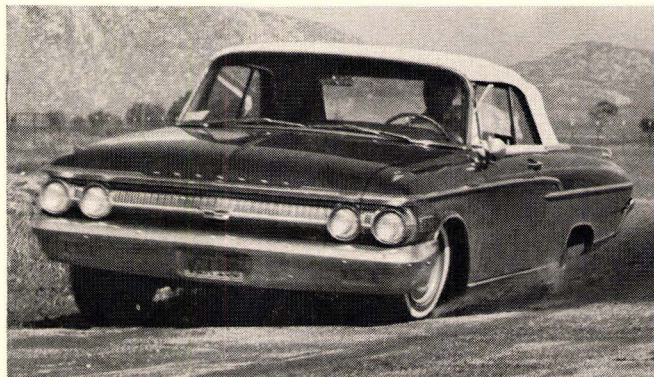
One-piece, open tube, with 2 cross-type U-joints

Differential

Hypoid — semi-floating
Standard ratio 3.00:1
(Optional 3.5:1 installed on test car)

Suspension

Front: Independent, single lower arm with high-mounted coil, stabilizer bar; direct, double-acting tubular shocks



MERCURY MONTEREY CUSTOM

2-door, 6-passenger convertible

OPTIONS ON CAR TESTED: 300-hp engine, dual-range Merc-O-Matic transmission, radio, heater, power windows, power seat, power brakes, power steering, padded dash and visor

BASIC PRICE: \$3222

PRICE AS TESTED: \$4086.95 (plus tax and license)

ODOMETER READING AT START OF TEST: 3908 miles

RECOMMENDED ENGINE RED LINE: 5200 rpm

PERFORMANCE

ACCELERATION (2 aboard)

0-30 mph	4.1 secs.
0-45 mph	6.7
0-60 mph	10.5

Standing start ¼-mile 18.9 secs. and 81 mph

Speeds in gears @ 4600 rpm

1st	47 mph	High	114 mph (est.)
2nd	79 mph		

Speedometer Error on Test Car

Car's speedometer reading	30	45	50	60	70	80
Weston electric speedometer	32	50	60	65	76	86

Observed miles per hour per 1000 rpm in top gear25.5 mph

Stopping Distances — from 30 mph, 58.5 ft.; from 60 mph, 158.5 ft.

SPECIFICATIONS FROM MANUFACTURER

Engine

Ohv V-8
Bore: 4.05 ins.
Stroke: 3.78 ins.
Displacement: 390 cubic inches
Compression ratio: 9.6:1
Horsepower: 300 @ 4600 rpm
Torque: 427 lbs.-ft. @ 2800 rpm
Horsepower per cubic inch: 0.77
Ignition: 12-volt coil

Rear: 5-leaf semi-elliptic springs, with double-acting tubular shocks

Steering

Recirculating ball and nut, with power assist
Turning diameter: 41.6 ft.
3.9 turns lock-to-lock

Wheels and Tires

Steel disc — 5 lugs
8.00 x 14 4-ply tubeless tires

Brakes

Hydraulic, duo-servo. Single anchor, internal expanding; self-adjusting
Front and rear:
11-in. dia. x 2.5 in. wide
Effective lining area: 180 sq. ins.

Body and Frame

Separate "X"-type frame and body
Wheelbase 120 ins.
Track, front 61 ins., rear 60 ins.
Overall length 215.5 ins.
Curb weight 4550 lbs.

Gearbox

3-speed automatic; column shift

Driveshaft

One-piece, open tube, with 2 cross-type U-joints

Differential

Hypoid — semi-floating
Standard ratio 3.00:1

Suspension

Front: Independent, single lower control arm with cushion-link coils, stabilizer bar; double-acting tubular shocks

EXHAUST SUPERCHARGER

Corvaire and the F-85 unveil turbo units that will harness free power

by Roger Huntington

BY THE TIME YOU READ THIS, Chevrolet will be in production on an exhaust-driven turbo-supercharger installation for the 1962 Corvaire powerpack engine. It will raise the maximum horsepower from 102 at 4600 rpm to 150 hp at 4400—and increase the maximum torque from 134 lbs.-ft. at 2800 rpm to 210 lbs.-ft. at 3300. This *could* be the first American turbo option available in the showroom.

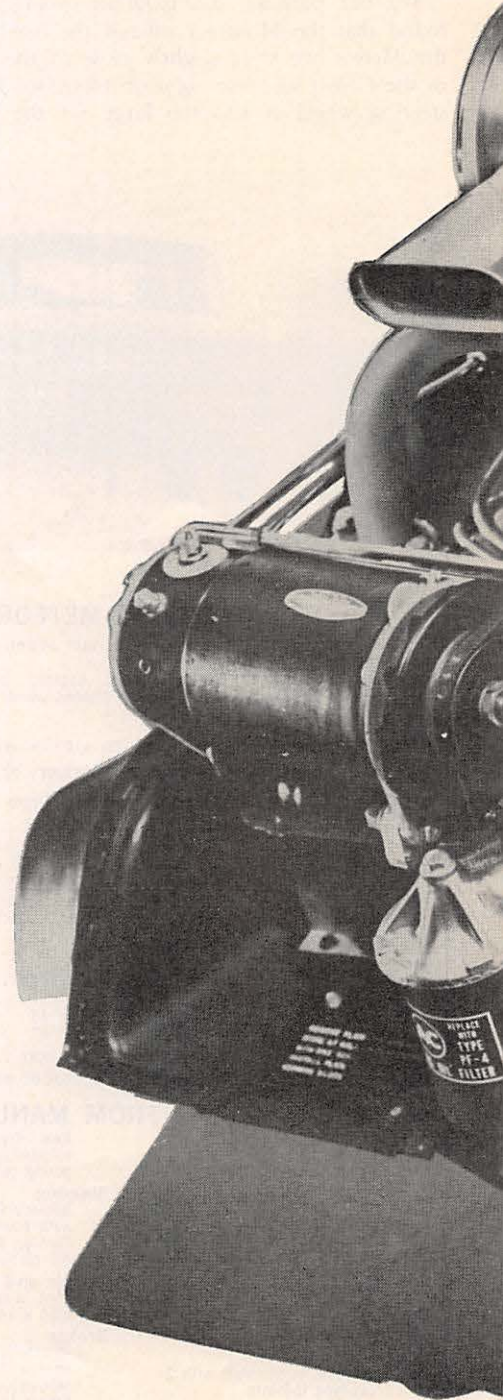
Oldsmobile announced development of an installation for the F-85 late last summer, but technical problems have held up introduction. Regardless of which wins this race, American car performance enthusiasts are about to enjoy the biggest single-step boost in acceleration they've ever been offered. Supercharging in general—and probably *turbo*-supercharging in particular—looks like the next big performance frontier for the American passenger car.

I think by now most MOTOR TREND readers are quite familiar with the layout of a turbo-supercharger and the principles of its operation. The turbo units on both the Corvaire and F-85 installations are basically similar—and both, in turn, are based on designs that have been widely used on commercial diesel engines for several years. There's no mystery here.

Actually, the big, important difference between the Corvaire and F-85 turbo systems—a difference that should be thoroughly understood by all performance enthusiasts—lies in the method of *controlling the supercharger pressure curve*. The whole future of this unique type of "blower" in the automotive field depends on a satisfactory solution of this very tough problem. We all know that the biggest disadvantage of the basic centrifugal-type compressor (which is used on all turbo designs) is that it doesn't pump much pressure at low speeds. The pressure curve rises steeply at the higher engine speeds... but it's obvious that we won't get much of a boost in medium-speed torque if we drive the centrifugal compressor at a fixed speed ratio with the crankshaft. This has always been one of the big problems with this type of blower, and it's never been adequately solved with crankshaft drive.

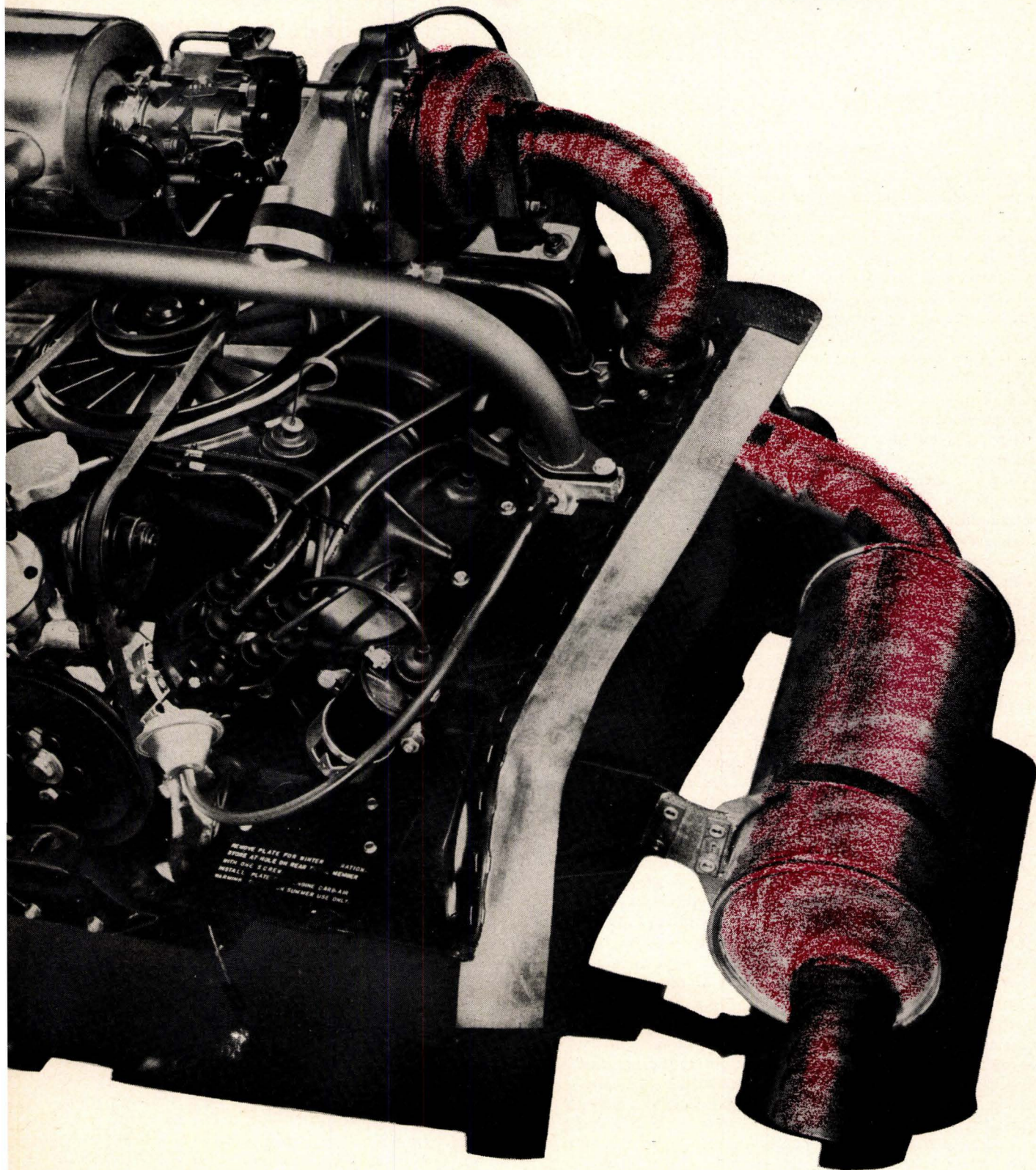
At first glance it might seem that this problem wouldn't exist at all with the turbo-supercharger, because the turbine-compressor unit is not tied to the crankshaft. It's a "free-floating" mechanism. Actually it's not as simple as that. Remember that the turbine speed will depend largely on the mass of exhaust passing through it—and this, in turn, is a fairly close function of the actual horsepower output of the engine (a product of engine cubic inches, rpm and throttle opening). So we still have a problem of low supercharger pressure at low rpm, though it's not nearly as critical as with direct crankshaft drive.

It's the job of the turbo system engineer to get the best



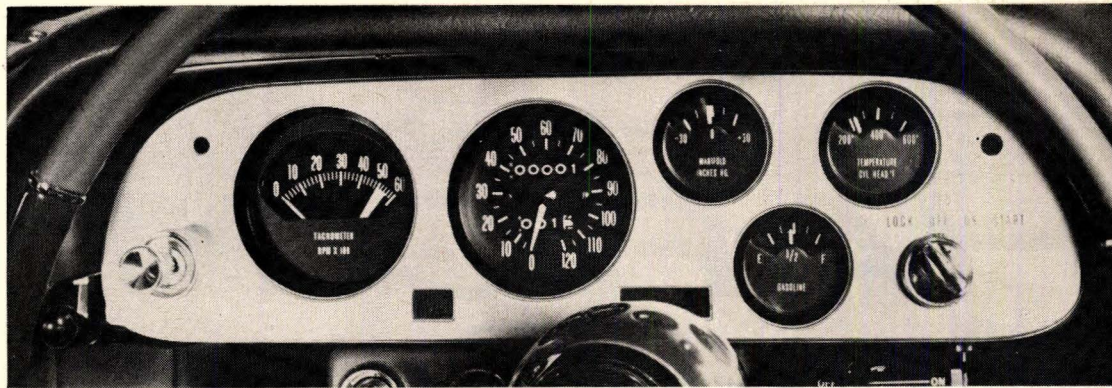
Turbo-supercharging filches 50 free horses for the flat Six by harnessing energy that was formerly wasted.

AUST HARGING



REMOVE PLATE FOR BLOWER
SCREW AT HOLE IN REAR
WITH ONE SCREW
INSTALL PLATE
WARNING: SUMMER USE ONLY

Corvair Spyder features functional instrumentation, but the manifold pressure gauge could be improved.



Exhaust Supercharging

continued

compromise on the pressure-rpm curve. Years of experience in the diesel engine field have taught us how to do about anything we want with the curve. An important secondary phase of this problem is to build in safety features that prevent over-boosting the engine at high crank speeds (in view of the inherent rising pressure-speed curve of the centrifugal compressor).

The Oldsmobile engineers have approached the problem by way of the exhaust by-pass valve. They have designed their turbo unit to give its full boost pressure of about six pounds/square inch at a low engine speed between 2000 and 2500 rpm. Then they put a by-pass (or "waste gate") valve at the turbo inlet that will automatically by-pass part of the exhaust gas around the turbine at speeds *above* this—and thus hold this six-pound boost clear on up through the speed range. This gives a very fat bulge in mid-range torque, a fair bulge at the top end, and prevents over-boosting at the top when the engine is over-speeded. The by-pass valve is controlled by a simple diaphragm that moves in accordance with blower boost pressure. The whole deal works like a charm.

But by-pass mechanisms cost money—and there are no engineers in the industry more sensitive to cost and service problems than the Chevrolet people. They have tried to get much the same effect on their turbo installation *without* any of this mechanism. Their answer is a brilliant piece of engineering.

What they've done is to put exhaust *back-pressure* to work for them to act as the turbo safety valve. Car performance enthusiasts have always been taught to consider exhaust back-pressure as a terrible enemy of performance, to be avoided at all cost. This is true...but this factor takes on a new significance when we're talking about turbo-superchargers.

We've got to think in new terms now. These are "pressure turbines" we're working with. That is, they operate by expanding a hot gas from a high pressure to a lower pressure (normally atmospheric pressure), thus extracting energy from the gas to give torque on the turbine. The turbine is *designed* to give a high resistance pressure. They *do not* utilize much of the *velocity* energy of the exhaust gas rushing down the pipe. This would give a more efficient turbine, but it would require very complex and expensive exhaust ductwork to tap the full potential—and engineers feel there is so much available energy in the exhaust that we don't have to resort to this complication *yet*.

So a turbo unit will generally run best with nearly as much pressure in the exhaust manifolds as the boost pressure in the intake manifold. (The difference is mainly due to the fact that the exhaust gas is at a much higher temperature, so a smaller expansion ratio on the turbine will pump a slightly higher compression ratio on the compressor.) Typical figures would be an exhaust pressure of eight pounds/square inch for a boost pressure of ten pounds. This would be at the point of maxi-

mum efficiency of the turbo unit. This point can be placed anywhere in the engine speed range by merely juggling the design of the turbo housing, nozzle area (if nozzles are used), flow area through the turbine, etc. At higher speeds and flow rates the exhaust pressure will gradually creep up *above* the boost pressure—and eventually it can go to even *two or three times* the boost, at flow rates that are way above the "design" point.

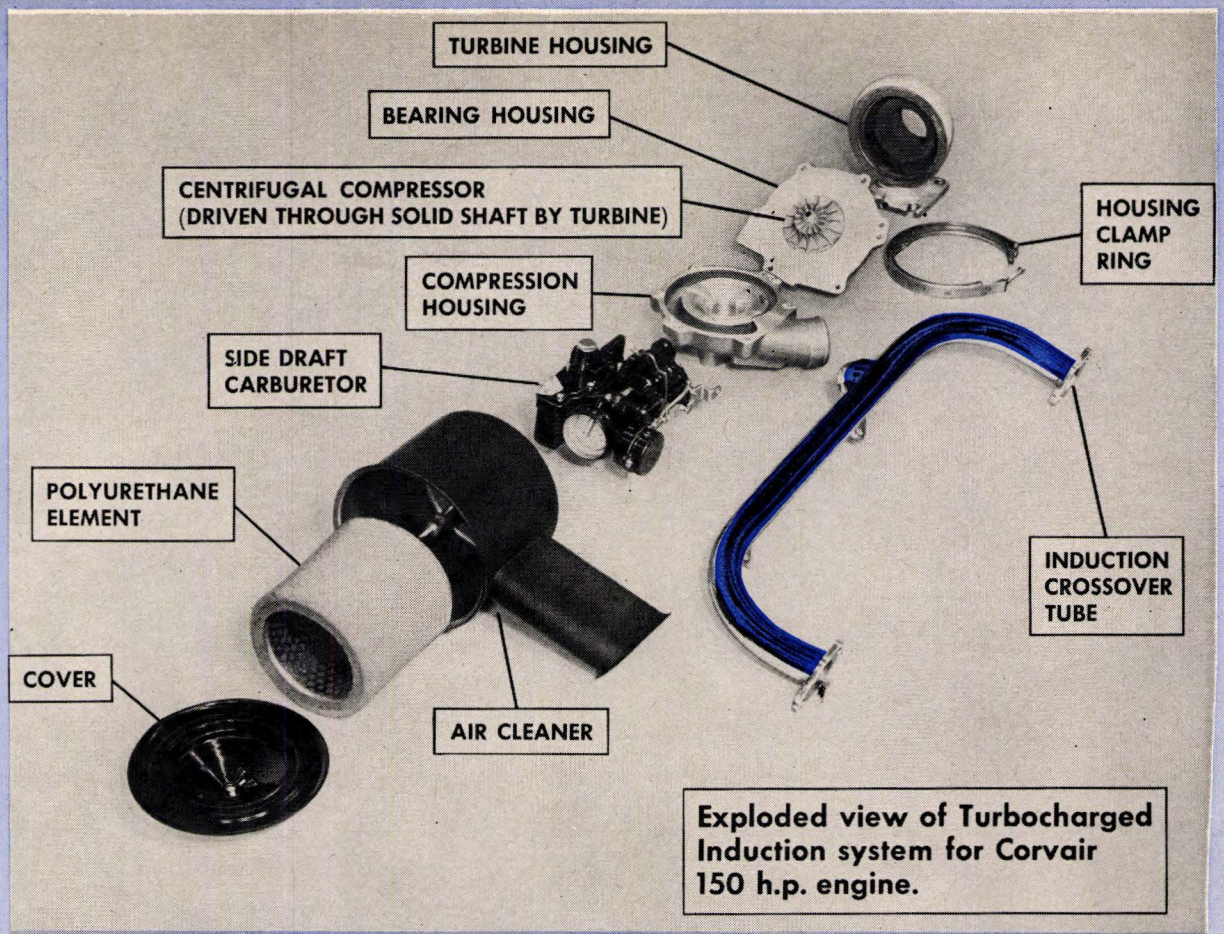
Chevrolet engineers reasoned that they could prevent over-boosting of their engines, and still get a good boost pressure-vs.-rpm curve, by tailoring their exhaust system for a steeply-rising pressure curve. This would limit the engine in several ways: For one, when the exhaust pressure goes above the intake boost the pistons have to work against this pressure on the exhaust stroke, and this subtracts horsepower from the crank. (Of course the intake boost pressure would *help* the pistons on the suction stroke, but when the exhaust pressure goes above the boost we get a net loss.) Furthermore, the effective "volumetric efficiency," or breathing capacity, of the engine drops swiftly when exhaust pressure goes above intake pressure—especially with large valve overlap. This means there's more waste exhaust left in the cylinder at the end of the exhaust stroke—and that means less fresh fuel-air mixture can be forced in on the suction stroke. These two effects really snowball when that exhaust pressure starts to shoot up. Eventually the engine is literally choked off.

I wish I could quote a lot of facts and figures now about the new Corvair turbo installation in terms of boost, exhaust pressure, turbine rpm, etc.—but I can't. Chevrolet Engineering definitely *will not* talk exhaust pressure. It's a pre-set policy. They know how car enthusiasts have for years abhorred exhaust back-pressure—and they're afraid to suddenly throw out these fantastic figures on the Corvair turbo unit. They'll scare you to death. It will require an education period, until these people thoroughly understand the true relationship of exhaust and intake pressure in turbo operation.

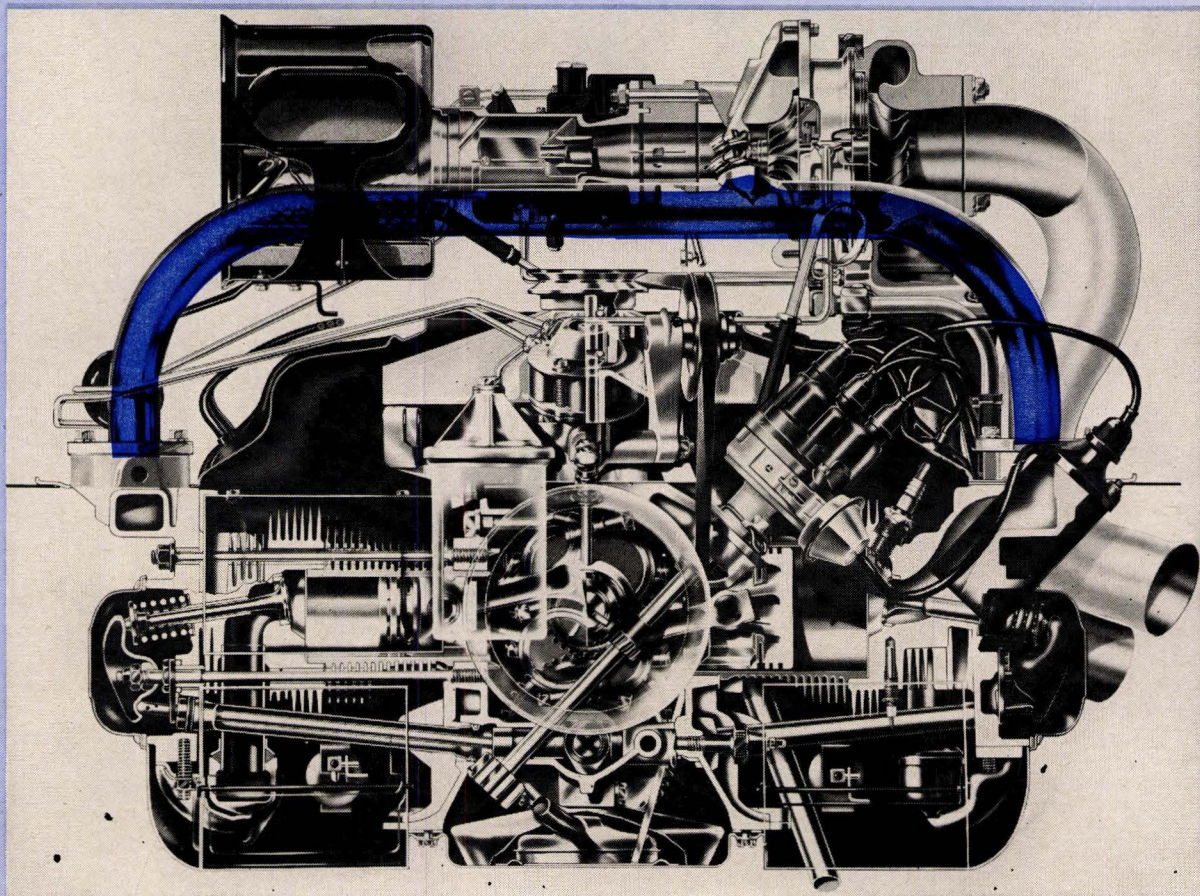
The Oldsmobile people feel much the same way about their F-85 turbo. They don't have as much back-pressure as the Corvair, but still pull about 13 pounds of pressure in the exhaust manifold at 4800 rpm, compared with about five to six pounds boost from the compressor. Their most efficient turbo range is in the 2800-3200 rpm band.

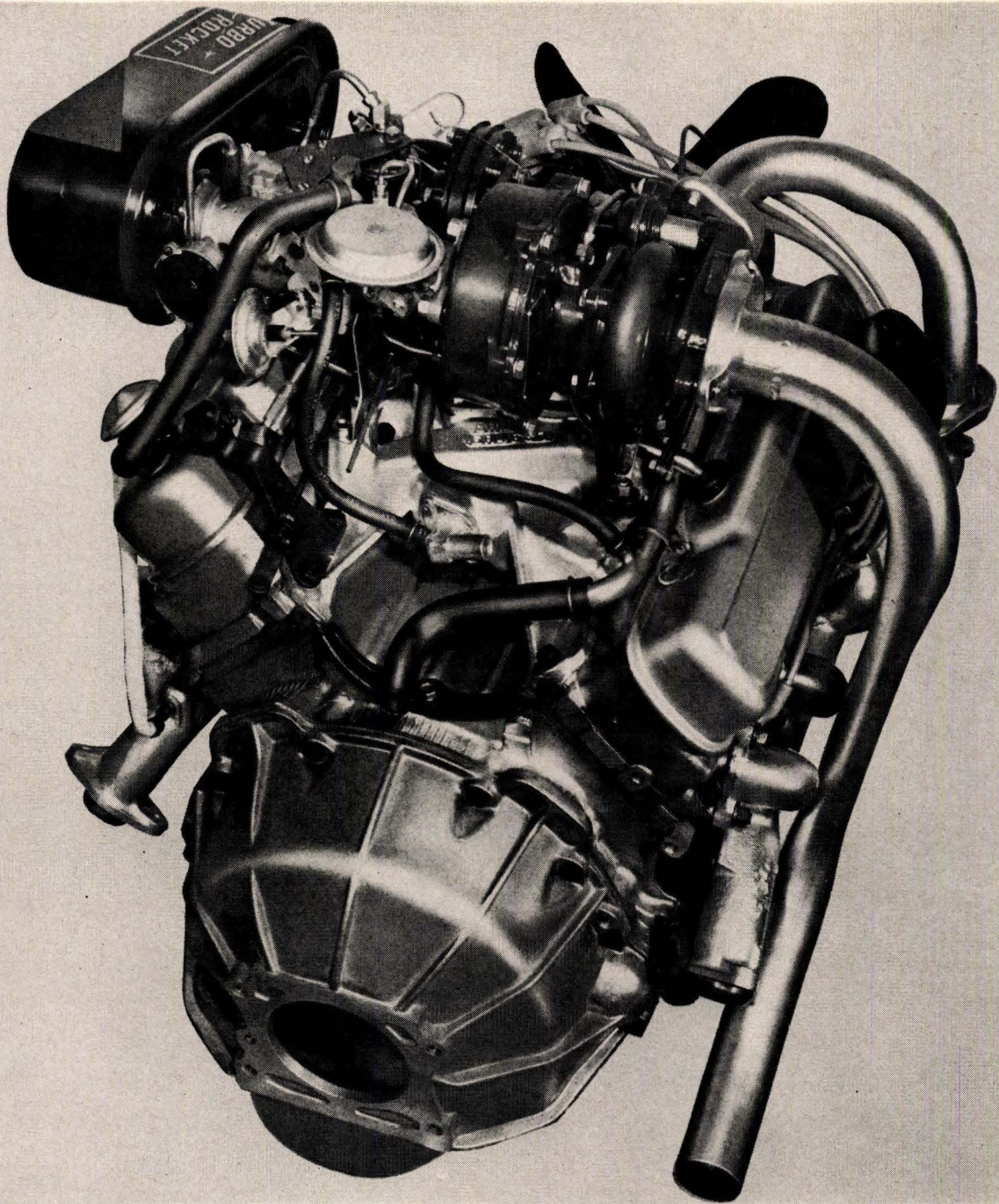
I hesitate to speculate about exhaust pressures required on the Corvair turbo-charged engine to get the boost pressure and horsepower curves that they get. But I'll go out on a limb and say that exhaust pressure at around 4500 rpm (full throttle) will exceed *three times* the manifold boost pressure—which in this case is about 11 pounds. In other words, I think exhaust pressure might run 30-35 pounds at this point! We'll know some day, when Chevrolet decides to release the figures—or when someone puts a pressure gauge on the exhaust manifold and actually measures it.

I do know that not all the exhaust restriction is in the turbo unit itself. Some of it is designed into the special reverse-flow



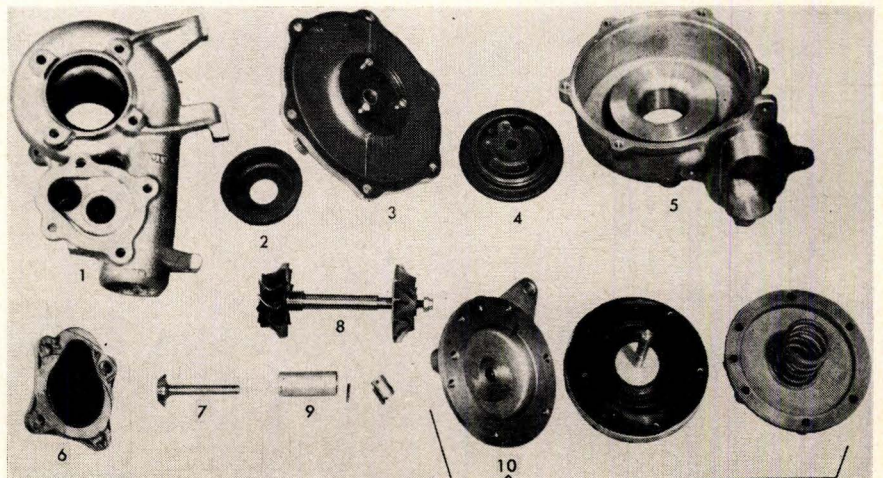
CORVAIR SYSTEM WAS DEVELOPED BY THOMPSON PRODUCTS, AND AS ILLUSTRATION SHOWS, IS OF SIMPLE DESIGN. CROSS-SECTION OF THE ENGINE WITH THE UNIT IN PLACE SHOWS COMPACTNESS AND SIMPLICITY OF INSTALLATION.





AiResearch charger installed on F-85 requires more space than Corvair's because of by-pass control valve use.

1. Turbine housing assembly
2. Heat shield
3. Center housing
4. Thrust plate
5. Compressor housing
6. Guide assembly — by-pass valve
7. By-pass valve
8. Rotating assembly-impeller
9. Cover-shaft and by-pass valve and lockwire
10. Controller assembly



Exhaust Supercharging *continued*

muffler that comes with the package. I understand if you take the muffler off, the turbo speed will shoot up, and over-boost the engine. This idea makes a lot of sense, because the flow restriction through a muffler increases roughly as the *square* of the flow volume — whereas it doesn't increase quite this fast across the turbine. Adding the muffler in series with the turbine causes the exhaust pressure curve to rise at a faster rate at high rpm. I understand the exhaust pressure is rising so swiftly in this range that the turbo rpm will not increase above about 4600-4700 rpm crankshaft speed, regardless of the load or speed of the engine. You can't over-boost as long as the standard muffler is used.

An accompanying graph shows the intake boost pressure curve. Notice how it rises swiftly in the mid-speed range, around 3000 rpm, then tends to level off at the top. This leveling off, of course, is due to the increasing exhaust pressure and the increasing flow restriction of the carburetor. This last factor is interesting. Chevrolet uses the Carter YH model carb for this Corvair turbo unit. It's a single-throat horizontal (side draft) that was originally designed in the early '50s for the old Nash LeMans and early Corvette six-cylinder engines. It has two "boost" venturis, in addition to the main venturi, to give better throttle response at the low end. The main venturi diameter of $1\frac{5}{16}$ inch is none too big for an engine that develops 150 hp. It would give plenty of restriction at the top end.

I figure the "pressure drop" (restriction) across this carb at 150 hp at 4400 rpm would be between five and six pounds! In other words, instead of the compressor starting with an initial pressure of atmospheric (14.7 pounds/square inch) it's having to start from around nine pounds. In order to compress the fuel-air mixture to a gauge pressure of 11 pounds above atmospheric (equivalent to a pressure ratio of about 2.8-to-1) I figure a three-inch-diameter compressor impeller would need to turn between 90,000 and 100,000 rpm. Chevrolet engineers speak of a maximum turbo speed of 70,000 rpm. I don't understand this discrepancy. We'll know more later, when more details are released. (Actually this turbo project at Chevrolet has been so rushed that full engineering tests had not been completed as this is written.)

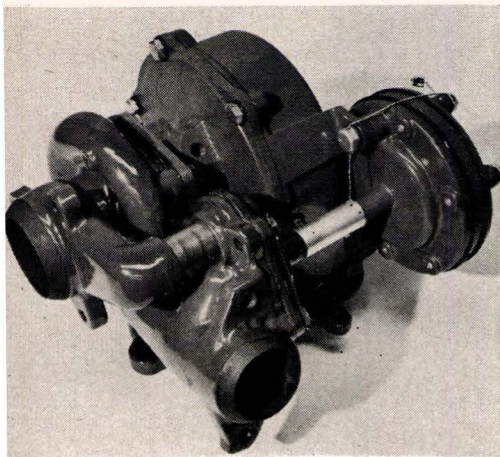
Another interesting difference between the Corvair and F-85

turbo systems is the engine compression ratio. The Olds engineers have tried to retain good fuel economy with their turbo installation. They retain the original powerpack compression ratio of 10.25-to-1, and then rig up a water-alky injection system to control detonation when the boost pressure goes above one pound. Chevy engineers have done away with this expense and complication, and just reduced compression to 8.0-to-1. This seems to give fair detonation resistance on premium fuel at 10-11 pounds boost.

Exhaust valve temperatures run considerably higher on the Corvair turbo — not only because of the lower compression ratio (which has the effect of *raising* exhaust temperature, but the increased density of the exhaust gases, due to the high back-pressure, transfers more heat to the valves. Chevy engineers have had to spend some time and money getting durability at this critical point. They ended up with a two-piece valve, with a nickel-base alloy for the head and a nickel silicon alloy for the welded-on stem. The special valve guides are a nickel-bearing aluminum-bronze alloy. Provision is made for valve rotation, to avoid hot spots. In addition, the Corvair turbo engine pistons, rods and crankshaft are beefed up slightly to take the extra loads. The crank is forged. Chevy engineers aren't afraid of this engine from the durability standpoint.

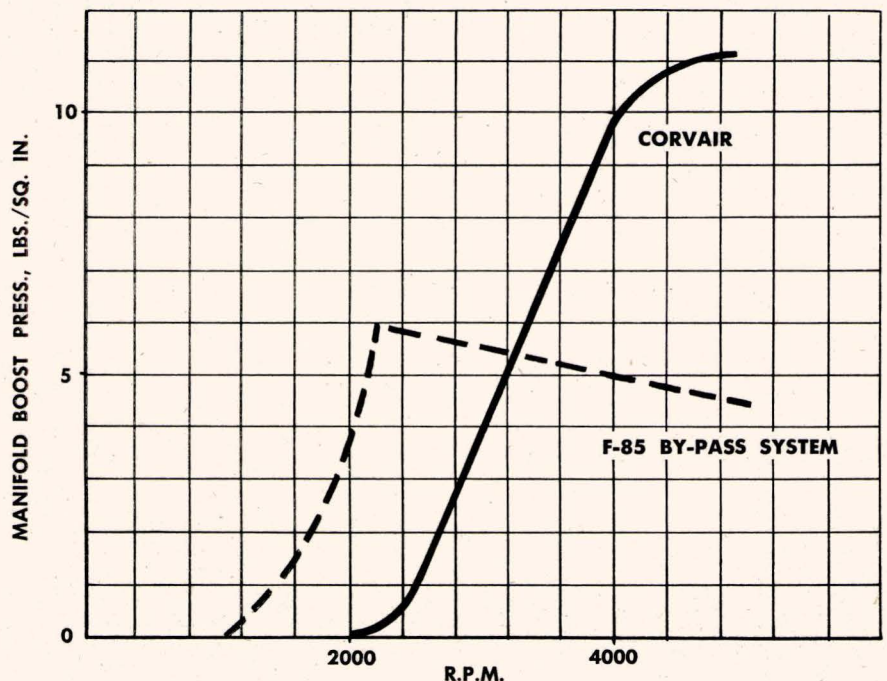
The spark advance curve is very interesting. This is always critical on a supercharged engine, especially on this one that would invite pre-ignition from high exhaust valve temperatures. Chevrolet has solved it by using centrifugal advance only, and then rigging a "pressure retard" mechanism that will retard the spark when the boost pressure goes above one or two pounds. The initial spark setting is a robust 24 crankshaft degrees (possible with the low compression ratio, as long as there's no blower boost), and this holds constant from idle to 3900 rpm. We get an additional 12 degrees of centrifugal advance between 3900 and 4500 rpm. The pressure retard mechanism kicks in about 2500 rpm (at full throttle), and retards the spark a constant nine degrees on up the range. In other words, with full throttle the total advance at, say 3500 rpm would be only 15 degrees (24 minus 9) — and this would go to around 27 degrees at the top end. This seems to be an excellent compromise among performance, response and fuel economy.

The whole thing is a beautifully engineered system. It's bound to revolutionize thinking on U.S. high-performance car engines. I hope they sell a million of 'em! /MT



Exhaust side of Olds' unit shows location of by-pass control valve. Device limits boost to five psi.

Comparative boost pressure curves show that F-85 has more punch at low end, but Corvair has it at the top.



AMERICA'S LUXURY CARS



by Wayne Thoms

Cadillac
Imperial
Lincoln Continental

THERE ARE THREE traditionally acknowledged luxury cars that bear Made-in-U.S. tags — Cadillac, Chrysler Imperial and Lincoln Continental. In marked contrast to the trio of imports tested last month, each of which had an individual approach to the luxury concept, our three are more notable for their similarities than their differences. True, each domestic has its own styling and size theme but appointments, gadgets, power assists, and even performance are remarkably the same.

Some of the luxury features are standard, some are tabbed as extra, yet most of these cars normally will carry a maximum load of extras so that they are fitted out almost identically. For example, all include or have available power windows and vent panes, six-way power seats, pull-down center armrest for the front seat, power door locks, electric antenna, remote-control outside mirror, a form of automatic speed-holding, and the expected features, such as air conditioning, power steering and brakes, and automatic transmission.

Since many of these features are available on less expensive models, what, besides high price, makes a luxury car? Obviously, not accessories, and it is certainly not engineering because these cars embody neither radical concepts nor techniques. It can be summed up in one word — quality. This takes in quality of coachwork, which means more care at time of assembly; quality of materials, particularly for interiors where the cars must convey an instant and strong impression of rich, good taste; and quality of mechanical components, as seen in more rigid inspections which will reject mechanisms not up to the highest possible standards. For these reasons one pays substantially more for a luxury car than for more conventional transportation.

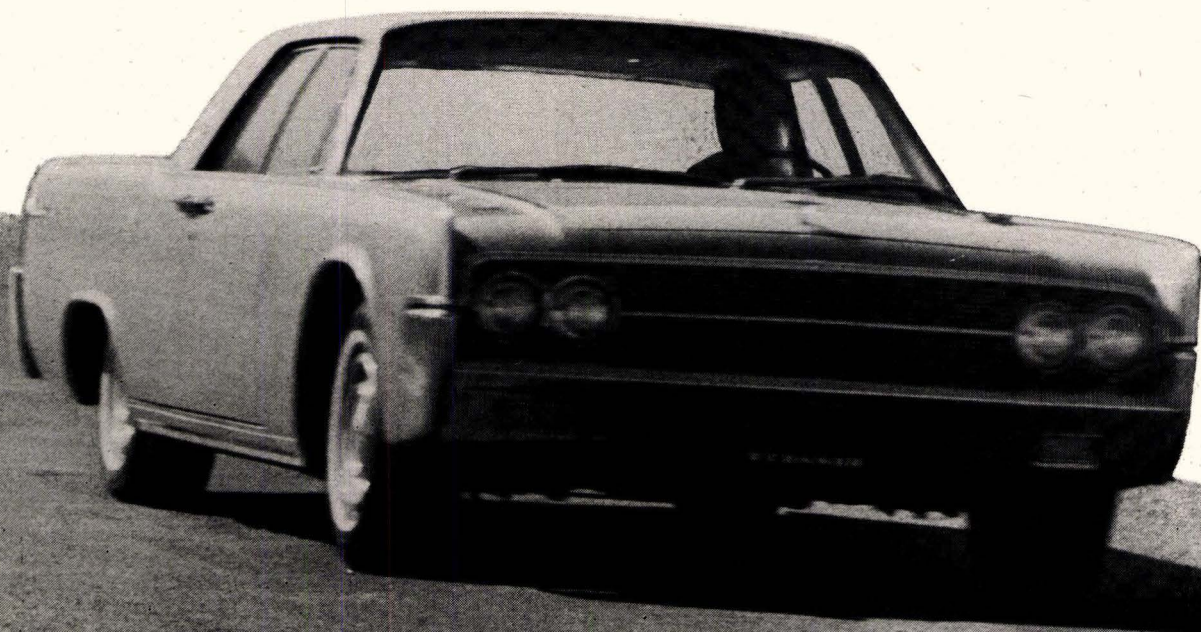
There is something else that is essential in the making of a luxury car — state of mind. The cars are recognized as ex-

pensive, ergo their possessors are recognized as commanding a certain type of wealth. Such recognition can be important to the ego, or it can be the cold business proposition of putting up a good front. In these cases it is unimportant whether owners recognize and appreciate quality. They buy the name, relying upon the manufacturer's integrity to also furnish them satisfactory transportation. This is the reason, and the primary reason, why a car maker associated with low-cost autos finds it impossible to upgrade his moderately-priced car into the luxury field; conversely, this is why luxury car makers who have tried to downgrade their product in the hope of mass sales have invariably failed in the attempt.

Moving away from the philosophy of luxury, it is pertinent to note the quantity of production relationship among the three makes. Cadillac leads the field, partly because of a wider diversity of models (13) at several price levels, although none of them are low enough to be in the popular price brackets. For the 11 months of 1961, Cad made 128,687 cars, Lincoln produced 27,644 Continentals, and Chrysler built 10,138 Imperials. Whether this ratio is shifting for '62 it is difficult to say. We do know that Imperial is moving into a strong campaign to sell the nation's leading business and professional people. Lincoln has been selling slightly less than half its production to leasing agencies, enabling persons who might otherwise not be able to afford them, to drive Continentals as their own on long-term leases. And there seems to be no shortage of customers for Cadillac dealers.

We learned one thing above all while testing these automobiles: driving America's three finest cars was extremely pleasurable — so enjoyable, in fact, that it was impossible to pick any one car and say categorically that it was the best.

PHOTOS BY PAT BROLIER



CADILLAC

NOW IN THEIR 60TH YEAR of auto production, Cadillac rolls along in '62 with an enticing selection of 13 models that rank as the largest one-make group of desirable luxury cars in the world. For our test we selected Cad's finest, the Fleetwood Series 60 Special sedan. There is one larger, the Series 75, but it is essentially a limousine on a 149.8-inch wheelbase and we did not feel it truly representative of what most potential Cadillac buyers are seeking.

Because of the close mechanical identity throughout the line, a test of the Fleetwood automatically becomes a test of any '62 Cad. All Cadillacs this year have the same engine, the 325-hp V-8 unchanged from 1961. Except for the big 75, they are all built on a common wheelbase and are 79.9 inches wide. Even length is quite constant at 222 inches. The only exceptions are some shorties in the Series 62 line, which have seven inches cut from the trunk.

The company doesn't exactly give the customer a great choice in power trains. As we said, engines are identical. Hydra-Matic is standard, and all cars carry a 2.94 axle, except when air conditioning is installed, then the ratio becomes 3.21-to-1. Also standard is the heater, power steering, power brakes and electric windows. From this point the sky is the limit in accessory options and interior combinations.

Our test car was equipped with a full load of extras, all of which we found desirable. Their only disadvantage was to increase the price from a suggested retail of \$6366 to \$7733.63. (This includes \$214.43 freight, but not tax and license.)

We felt one thing very strongly about the Cad after a few minutes' exposure — that this is a car which has undergone refinement after refinement over a lengthy period until every detail has a purpose. It was evident in the carefully thought-out driver controls, the near-perfect interior trim and the way in which body panels are assembled to close tolerances. Much of this may be traced to the fact that Cadillac gears its production on a steady year-round basis. Therefore, their craftsmen, who

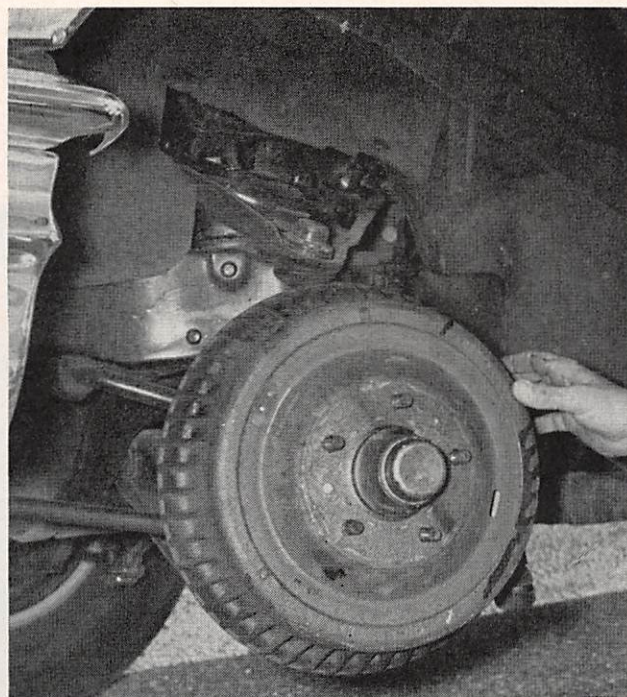
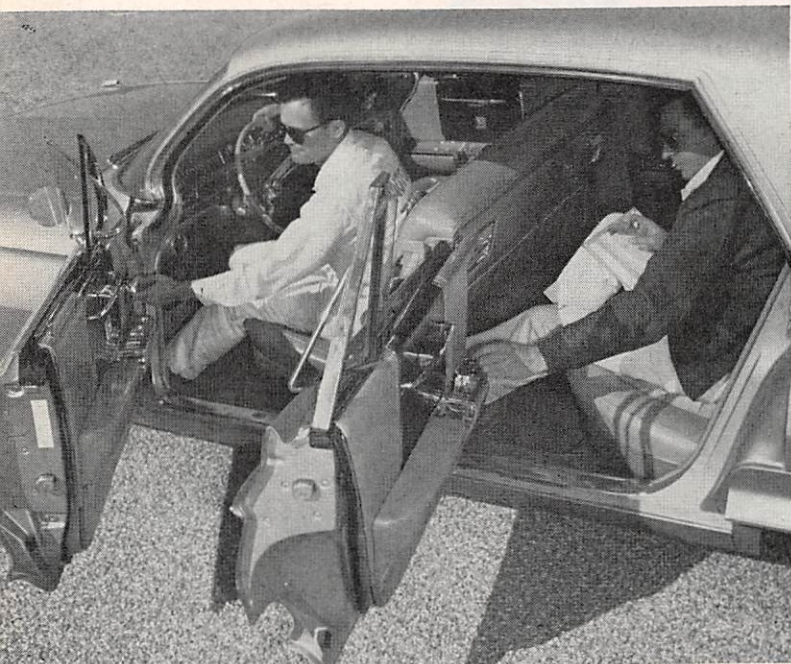
remain year after year, take pride in the car and work accordingly. It helped make us confident that the car would do virtually anything we asked of it, unhesitatingly and well.

Our confidence was well founded in most areas. The car moved out much quicker than most drivers ever will demand. Extremely high speeds can be held for hours on end while the engine loafs along, apparently with little effort. We rated general roadability as only fair because of the high-assist power steering. Wheel pressure is so light that we could almost wish the car around a turn, and there is virtually no road feel. At low speeds where one drives visually this is fine, but at higher velocities most drivers want to be able to sense the road conditions and car attitude through the steering. This would seem to be the price paid for effectively damping noise and shocks from the passenger compartment.

During one stretch of road we were able to experience at first hand the car's tracking ability. Gusty cross-winds became so vicious that trucks and house trailers were stopped by police; yet we drove through and found no problem in correcting our course to compensate for the gusts we later learned were in excess of 60 mph.

One area in which we felt highly confident concerned Cadillac's brakes. Not only do they stop well, they incorporate a dual hydraulic system which will always insure braking on at least two wheels, should a hydraulic line be cut. Only one other American make has this feature — Rambler. Also, the toe-operated parking brake can function as a true emergency brake, usable while the car is moving. We especially liked its operation. There is no release mechanism to forget. It can only be set while the transmission is in NEUTRAL or PARK, and as soon as a gear is engaged the brake releases automatically through vacuum pressure.

We found the ride to be soft and pleasing. Cadillac has combined medium-firm seats with their ride, adding up to a most



Big finned brakes offer effective and insured stopping power. New dual hydraulic system offers braking on at least two wheels even if one unit should go out.

There's room to stretch out and enjoy the elegance of the Fleetwood's interior. On driver's armrest there are controls for windows, locks and mirror.

satisfactory result that invites long hours at the wheel without the weariness often associated with cross-country travel. If silence is golden, then riding in a Cadillac is a 24-karat experience. When the windows were closed and the first-rate vent-heat-cool system turned on, there was no appreciable wind, road or traffic noise to distract passengers.

Eliminating noise takes patient research, and Cadillac's engineers keep dreaming up new ways to quiet the car. This year they have added dense rubber under the floor pan and in the cowl section between the front doors and front fenders to provide additional quieting. Also, they claim specially cut transmission gears, drive line improvements and new exhaust line mounting to keep down the noise. We can testify that it all worked to perfection.

There is a system of accessory controls for the left hand that pleased everyone who drove the car. Without removing the hand from the armrest it was possible to lock or unlock the doors, control all four windows and vent panes, adjust the outside mirror and move the front seat. Setting the Cruise Control is also a left-hand operation. It is wheel-type, mounted above and to the left of the dash.

Cad has two lighting innovations, different from what anyone else offers. At the side of the headlights is a cornering light which throws a 40-degree-wide steady beam whenever the lights are on and the turn signal set. The taillight in the bumper appears white in daylight, yet via a colored filter system it houses taillight, stop light, turn signal and back-up light.

We don't see how anyone can offer any complaints about interior space; our test crew did not. Rear legroom, measured in a bent line from the toeboard to the theoretical base of the spine, is 44.5 inches; comparable figure for the front is 45.6. There is more than ample hiproom (63 inches), with almost enough headroom to wear a hat. Trunk space is typically big Detroit; just toss in the golf bags, suitcases and packages without worry of arranging.

The interior of our Fleetwood had the luxury theme spelled out quietly, but in such a manner that there was no mistaking it. Doors feature handsome wood panels, which one source at Cadillac calls cherry veneer, another terms African Makori wood. Whatever it is, it blends well with the tuft-pleated cloth seats trimmed in soft, gray leather. In addition to the usual dash courtesy lights there are two lights, which Cadillac calls reading lights, on the upper rear quarter panels. Smokers have two big ash trays up front, each with a lighter, plus two more in the rear, also equipped with lighters.

Concerning fuel economy, Cad scored as well as can be ex-

pected, considering size and weight. We recorded as much as 13.5 mpg, dropping to nine under adverse conditions. It is liable to fluctuate on either side of those figures, depending upon how the car is driven.

There were a great many things we liked about our Fleetwood, many more than the few we picked upon to illustrate. As with all cars, there were some things we didn't like, but it is such an outstanding motorcar that finding the weak points becomes a tedious search. /MT

CADILLAC FLEETWOOD 60 SPECIAL

4-door, 6-passenger sedan

OPTIONS ON CAR TESTED: Air conditioning, 6-way power seat, whitewall tires, radio with electric antenna, Cruise Control, tinted glass, fog lamps, automatic beam changers, remote trunk lock, power door locks

BASIC PRICE: \$6366

PRICE AS TESTED: \$7733.63 (plus tax and license)

ODOMETER READING AT START OF TEST: 3456 miles

PERFORMANCE

ACCELERATION (2 aboard)

0-30 mph.....	3.7 secs.
0-45 mph.....	6.1
0-60 mph.....	10.8

Standing start ¼-mile 18.9 secs. and 78 mph

Speeds in gears @ shift points

1st ...26 mph @ 4100 rpm	3rd ...69 mph @ 4200 rpm
2nd ...42 mph @ 4100 rpm	

Speedometer Error on Test Car

Car's speedometer reading	32	48	54	65	76	86
Weston electric speedometer	30	45	50	60	70	80

Observed miles per hour per 1000 rpm in top gear23.5 mph

Stopping Distances — from 30 mph, 40 ft.; from 60 mph, 152 ft.

SPECIFICATIONS FROM MANUFACTURER

Engine

Ohv V-8
Bore: 4.0 ins.
Stroke: 3.875 ins.
Displacement: 390 cubic inches
Compression ratio: 10.5:1
Horsepower: 325 @ 4800 rpm
Ignition: 12-volt coil

Gearbox

4-speed Hydra-Matic, column control

Driveshaft

Open — 2-piece

Differential

Hypoid
Standard ratio 3.21:1

Wheels and Tires

15-in. steel disc wheels
8.20 x 15 whitewall tires

Suspension

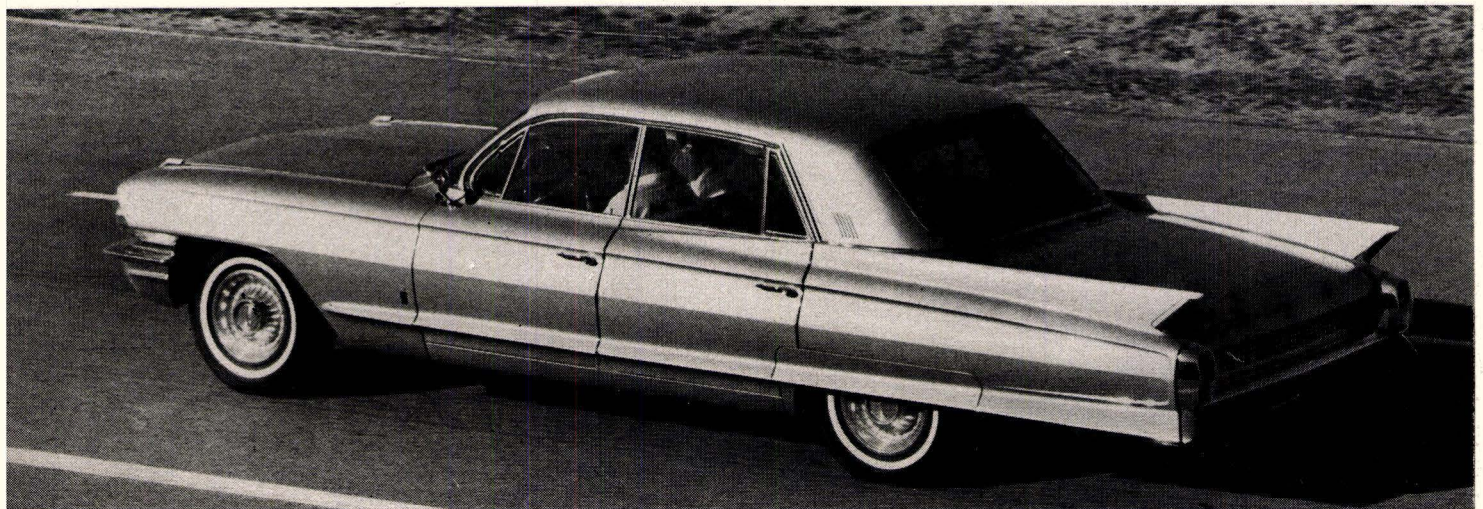
Front: Independent upper and lower control arms; coil springs with tubular shocks and stabilizer bar
Rear: Coil springs — tubular shocks, torque being taken by control arms

Brakes

Hydraulic, servo, self-adjusting
Front and rear: 12 in. x 2.5 in. wide
Effective lining area: 203.74 sq. ins.

Body and Frame

Tubular center X
Wheelbase 129.5 ins.
Track, front 61 ins., rear 61 ins.
Overall length 222 ins.
Shipping weight 4710 lbs.



RIDING IN THE CLOSED CADILLAC IS ONE OF THE MOST SILENT EXPERIENCES ON THE ROAD TODAY. EACH YEAR THE SOUND DIMINISHES.

IMPERIAL

IN SELECTING Chrysler's Imperial LeBaron four-door Southampton hardtop, we picked the biggest of the big in the luxury field. And with LeBaron we had the top of the Imperial line — the plush, fanciest automobile that Chrysler manufactures. We didn't have to take the measurements to realize that it is longer, wider and taller than anything else currently in the passenger car field. Massively proportioned, it looks big and impressive.

Yet, after checking exact dimensions, we found that it is only five inches longer overall than the Cadillac (actually a half-inch shorter in wheelbase), and less than two inches wider than the Cad. Its size, therefore, is partly an illusion. But only partly, as we learned while threading through narrow traffic lanes with what seemed zero clearance on the sides. So right off we were able to determine what seems to be about the only disadvantage of this car, the very thing that makes it desirable to most purchasers — its bigness. After a while, of course, the size became less noticeable and drivers compensated by driving a little less aggressively.

The modest rear window, providing considerable privacy for rear seat passengers, creates a town-car roof and a completely distinctive appearance that attracted a great deal more attention than we anticipated. Ordinarily, our domestic test cars never get a second glance, but there is something distinguished about the LeBaron that made people stare (we got the same treatment in the Rolls-Royce) — not so much at the car

but at its passengers, as if onlookers were expecting to see a real live celebrity.

Actually, there have been no significant mechanical changes in the car for '62. The engine remains Chrysler's extremely potent 340-hp, 413-inch powerplant, so beloved by Chrysler owners and hot rodders alike. That much punch is not wasted; it is essential in a car that can easily scale over 6000 pounds, loaded with six passengers and luggage. At that, acceleration should please the most critical. The feeling was strong, smooth power all the way up the speed range.

The three-speed automatic transmission operates and acts just like the old TorqueFlite it replaces but it has been redesigned internally, is more compact, giving more cockpit space, and is 60 pounds lighter, due in part to an aluminum case. Shifts were perceptible but seemed exceptionally smooth, in keeping with the way we believe a luxury car should perform. One other change this year is the use of a single exhaust system instead of the duals formerly used. A single system operates hotter and should lengthen muffler and tailpipe life.

The biggest changes (for the better, we felt) have been in styling. The fins have been chopped and the rear fender line flows easily, topped by the famous gun-sight taillights. The only other appearance change worth noting is the divided grille. On the inside, everything remains as it was in '61. The instrument panel is recessed between a series of transmission and heat/cooling control pushbuttons on either side, and surmounted by a nearly square steering wheel. Its acceptance in use became a matter of personal taste. Some of the test crew liked it, others tolerated it, no one felt violently opposed to the unusual shape.

The chassis is not Chrysler's highly-touted Unibody construction. They utilize the more conventional method of heavy, box-section frame rails with body welded in place. This year they have followed the industry trend to sealed lube points so that 32,000-mile intervals between lubrications are standard.

The Imperial is brimming over with interior space, particularly in the rear seat. The distance between the rear seat backrest and the back side of the front seat can vary from 32 to 37 inches. With just over five feet of hiproom, there is plenty of area for three big adults to stretch out and be comfortable. Headroom, front and rear, 38.9/38.3 inches, is perfectly ample



THE LEBARON IS A BIG, BIG CAR AND ITS STYLISTS HAVE NOT ATTEMPTED TO HIDE THE FACT. IT HAS A REAL TOWN CAR APPEARANCE.

for tall men to sit upright. There are about 32 cubic feet in the handsomely detailed trunk. The spare, which has its own upholstered cover, mounts flat and would necessarily be buried under a full load of luggage. This is hardly a new problem and will be with us as long as spare tires are stored in trunks.

Chryslers have a reputation for good handling, and the LeBaron upheld it. Steering is quick, 3½ turns lock-to-lock, although the turning circle is an enormous 48.8 feet. While this type of car is not intended for successful hard cornering, it remained reasonably flat and controllable in turns, indicating its adaptability to mountainous terrain. Brakes, with 251 square inches of lining, stopped us moderately well from 60 mph. With more than enough power assist, required pedal pressure is very low but they showed considerable tendency to lock up, a not uncommon trait on heavy, power-braked cars.

The true feeling of luxury really came on at fast highway speeds. Cradled deeply into the soft cushions, windows closed, heating or cooling on as the climate dictated, we found the Imperial to be a magnificent road machine. There was just a slight wind rustle as it curled around the windshield chrome, but never enough to infringe upon normal conversation. Engine and road noises were effectively isolated from passengers. The ride was soft, verging on but not quite marshmallow, so that we found very little in driving or riding to contribute to fatigue.

Our test car was equipped with the optional (\$57.45) limited-slip differential. We couldn't note any real advantage in normal operation although it's a handy device in snow, mud or sand. We found that the rear wheels would not break loose during

our acceleration runs, which could be attributed either to the differential or the car's extreme weight.

Another option of interest is the Auto Pilot (\$96.80). When locked on, it holds a steady pre-set speed over all terrain except steep downhills. Touching the brake releases it. It can be demonstrated that its use will actually increase fuel economy slightly but we found its biggest advantage on long trips, where we were able to shift position without having to worry about the position of our throttle foot.

Fuel economy is pretty much a matter of academic interest in the luxury field. The cars are big, heavy and powered with huge V-8's. What else can one expect except the eight to 12 mpg we experienced? The 2.93-to-1 axle ratio is about as far as one can practically go into an economy gear. The only answer is to keep the 23-gallon fuel tank filled.

Although it is the most expensive single option, the dual air conditioner and heater (\$777.75) does an outstanding job. Temperature, heating or cooling, may be adjusted and held to precise limits and while using it we were quite unconcerned about outside weather conditions. With this type of system we found very little necessity to ever open the windows.

The extra-cost options bumped the LeBaron's price from a base of \$6422 to a total of \$7735.90. Destination charge added \$205, making the car's delivery price \$7940.90, plus tax and license. For this kind of money one expects something awfully close to the best. We can only add that anyone seeking dignified, quiet luxury really need look no further than the Imperial LeBaron. /MT



The mammoth control console relies on the Chrysler pushbutton theme. Note the squared steering wheel.



Tall men will breathe a sigh of relief when they board the Imperial. There's even hat room on the inside.

CHRYSLER IMPERIAL LE BARON

4-door, 6-passenger hardtop

OPTIONS ON CAR TESTED: Dual air conditioner and heater, Auto Pilot, Sure-Grip differential, power door locks, automatic beam changer, radio and power antenna, seat belts, tinted glass, 8.20 x 15 rayon whitewall tires, door edge protectors, remote control mirror

BASIC PRICE: \$6422

PRICE AS TESTED: \$7940.90 (plus tax and license)

ODOMETER READING AT START OF TEST: 4051 miles

PERFORMANCE

ACCELERATION (2 aboard)

0-30 mph	4.2 secs.
0-45 mph	7.1
0-60 mph	11.0

Standing start ¼-mile 19.1 secs. and 79 mph

Speeds in gears @ shift points

1st33 mph @ 3600 rpm 2nd75 mph @ 4000 rpm

Speedometer Error on Test Car

Car's speedometer reading	31	49	55	65	75	85
Weston electric speedometer	30	45	50	60	70	80

Observed miles per hour per 1000 rpm in top gear24 mph

Stopping Distances — from 30 mph, 41 ft.; from 60 mph, 185 ft.

SPECIFICATIONS FROM MANUFACTURER

Engine

Ohv V-8
Bore: 4.19 ins.
Stroke: 3.75 ins.
Displacement: 413 cubic inches
Compression ratio: 10.1:1
Horsepower: 340 @ 4600 rpm
Ignition: 12-volt coil

Suspension

Front: Independent, non-parallel control arms with torsion bars, stabilizer bar, tubular shocks
Rear: Non-independent, semi-elliptic leaf springs, tubular shocks

Gearbox

3-speed automatic; dash-mounted pushbutton controls

Brakes

Hydraulic, power assist; total-contact brake shoes
Front and rear: 12 in. x 2.5 in. wide
Effective lining area: 251 sq. ins.

Driveshaft

2-piece open, pre-pack anti-friction U-joint bearings

Body and Frame

Welded double-channel box-section side rails, lateral cross-members, plus X-type cross-member
Wheelbase 129.0 ins.
Track, front 61.7 ins., rear 62.2 ins.
Overall length 227.1 ins.
Shipping weight 4805 lbs.

Differential

Standard: Hypoid, semi-floating
Optional (test car): Sure-Grip limited-slip
Standard ratio 2.93:1

Wheels and Tires

Steel disc, 15 x 6 L
8.20 x 15 rayon whitewall tires

LINCOLN CONTINENTAL

THERE IS a great temptation to describe today's Continental as a compact luxury car, and in the sense that its dimensions are substantially less than either Cadillac's or Imperial's, it is. But such a facetious tag is totally unfair, for the Continental is not really small and it measures up to accepted luxury standards in every way. And it brings to the field hidden features and a dual character that make it a surprising automobile.

We found the Continental to be loaded with quality. After making this rather obvious discovery, we dug into the manufacturing background. Lincoln is quite proud of the care they put into the car. In their second year of production on this series, they have made only minor changes for '62. They spend nearly half a car's four-day production time in inspection and testing. For example, at least once a week one of those handsome bodies is pulled off the line and destroyed, weld by weld, just to see if the various joints are holding. All engines are run on a dyno, transmissions are run for 30 minutes to check for noise and flaws and finally, each Continental gets a 12-mile road test, claimed to be the longest road check given any U.S.-built car. Obviously, they want to build a reputation, and honest quality is the best way to do it.

Styling comments are not generally part of a road test but the Continental's lines are so unusually clean and attracted such universally favorable reaction, that they deserve mention with attention to the compromises required in the interests of appearance.

Height is 53.7 inches, about three inches lower than the other two luxury cars tested, and it appears much lower, so skillfully is the roof mated with the body. A certain amount of headroom is necessarily lost. By actual measure, front/rear

headroom is 33.8 and 33.6 inches. Even though the headliner is mated directly to the top, there is not a great deal of clearance for a long-torsoed individual. In fact, the Continental's graceful styling contributes to crowded quarters in one other area—the rear seat—where luxury cars usually have room to waste. Rear legroom totals 40.7, only about three inches less than the other luxury cars, but it is a significant three inches and very noticeable. Up front there is ample space, with about the same seating width, front and rear, as the other cars. As for the trunk, how big need it be? The Continental has 22.9 cubic feet, which isn't large by big-car standards. Whether it's enough depends upon the user.

We concluded that the Continental is more than a pure luxury machine—it has a definite sporting flavor. Not that it is a sports car; let's just say it's a great deal less sedate than any domestic luxury car we've ever approached and trust that sedate Continental drivers will not be offended. Even that must be qualified; it doesn't refer to performance. The Continental has the biggest engine in the field but it turns out only 300 horses, enough for good but not sensational acceleration and passing speeds. It was, however, the only luxury car that would leave rubber during a full-throttle, first-gear start.

The sports feel is a combination of several things, including interior trim, handling and ride. For one, our test car had the optional leather interior. It covers a driver's seat that has a semi-bucket effect, due to a slightly curved backrest and a soft seat section that helps hold the driver in place. Also, there was a considerable amount of chrome molding, while the headliner was of a white, perforated plastic material. Taken as a unit, these are hardly what one expects to find in a luxury car, but they were effective in lightening the somber aura that seems built into most luxury cars.

Handling was analyzed in the light of the car's intended purpose rather than in terms of cars built primarily for good handling. The Continental shaped up well, the equal of most big cars on the road, during cornering and high-speed straight-away driving. Ride struck us as the firmest in the domestic luxury field, but it was still a long way from being harsh. Bending the car hard and fast around some of the turns on the Riverside Raceway brought forth a good deal of tire protest, but the car itself remained much flatter than we expected.



THE SEMI-SPORTY CONTINENTAL WAS THE ONLY MEMBER OF THE LUXURY TRIO THAT WOULD LEAVE RUBBER ON FULL-THROTTLE ACCELERATION.

The power steering kicked back very little road feel—just enough to be helpful while cornering faster than anyone is likely to demand. The steering wheel is small, only 16 inches across, with a thin rim that is surprisingly comfortable.

There was a strong feeling of confidence in the brakes in spite of a stopping distance from 60 mph somewhat above average. They stopped straight enough, which is reassuring when trying to haul down over 5000 pounds, but wanted to lock up, hence the few extra feet of stopping caused by punching the brake pedal several times.

Various sound-deadening materials run to several hundred pounds on any luxury car, and the Continental is no exception. There was nothing to criticize adversely and little to say except that the car was very quiet; little or no wind and road noise crept in—precisely as we assumed it would be.

Lincoln is doing something with the Continental that many experts called impossible only a few years ago—building it with unit construction. It is not customary to put together a big, heavy car by this method, but it can be done, successfully. They weld the underbody, which they call a torque box, to the body. These underbody members are such heavy-gauge steel—as much as 3/16-inch thick—that they are almost a frame, but the method is unitized and Lincoln is the only luxury car builder trying it. They have proven that it works, even in their four-door convertible.

We were a little surprised to find that the big-inch V-8 is nursed along by a two-barrel carburetor. Its only possible

reason for existence is economy, but that's a logical enough excuse. The Continental pulled almost 15 mpg maximum, falling to just below 10 in heavy traffic. There is one unusual engine refinement, a water-heated control for the automatic choke, which is said to aid economy during short runs. Among other things, it eliminates high engine idle speeds in short-trip operation and eliminates choke enrichment at high altitude because of low manifold vacuum pulling insufficient hot air into the choke housing.

The Continental held one more pleasant surprise—its price in relation to the luxury field. Our test car had a suggested retail of \$6074, which includes a flock of extras—radio, heater, three-speed automatic transmission, power brakes, power windows, power steering, power door locks, remote control mirror and white sidewalls. Added to the price of the test car were leather interior, \$100, six-way power seat at \$118.95, and a fine air-conditioning system at \$504.60. (This system is extremely effective and simple in its operation; it has only one knob which is also the heater control.) One can have power vent panes, electric antenna, auto pilot—in fact, every accessory available on the other two luxury cars to raise the price above the \$6797.55 of our test Continental.

Staff agreement was general that Lincoln has turned out an impressive, sophisticated luxury sedan without serious faults. Since it is only the second year with a totally new design, we feel that they have done a highly commendable job in a difficult area. /MT

LINCOLN CONTINENTAL

4-door, 6-passenger sedan

OPTIONS ON CAR TESTED: Air conditioning, 6-way power seat, leather interior

BASIC PRICE: \$6074

PRICE AS TESTED: \$6797.55 (plus tax and license)

ODOMETER READING AT START OF TEST: 5846 miles

PERFORMANCE

ACCELERATION (2 aboard)

0-30 mph.....	4.4 secs.
0-45 mph.....	7.6
0-60 mph.....	12.4

Standing start ¼-mile 19.7 secs. and 75.5 mph

Speeds in gears @ shift points

1st	45 mph @ 4100 rpm	2nd	70 mph @ 4200 rpm
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Speedometer Error on Test Car

Car's speedometer reading	30	45	50	60	70	80
Weston electric speedometer	30	45	50	60	70	80

Observed miles per hour per 1000 rpm in top gear

.....	24 mph
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Stopping Distances — from 30 mph, 41 ft.; from 60 mph, 205 ft.

SPECIFICATIONS FROM MANUFACTURER

Engine

Ohv V-8
Bore: 4.30 ins.
Stroke: 3.70 ins.
Displacement: 430 cubic inches
Compression ratio: 10.0:1
Horsepower: 300 @ 4100 rpm
Ignition: 12-volt coil

Gearbox

3-speed, twin-range Turbo Drive automatic; column control

Driveshaft

Open — needle roller bearing U-joints

Differential

Hypoid — semi-floating
Standard ratio 2.89:1

Brakes

Hydraulic duo-servo, self-adjusting
Front and rear: 11.06 in. x 3 in. wide
Effective lining area: 227 sq. ins.

Suspension

Front: Independent with upper and lower control arms, coil springs with tubular shocks, stabilizer bar, compliance struts from front of body to lower control arms
Rear: Non-independent, semi-elliptic leaf springs, tubular shocks

Wheels and Tires

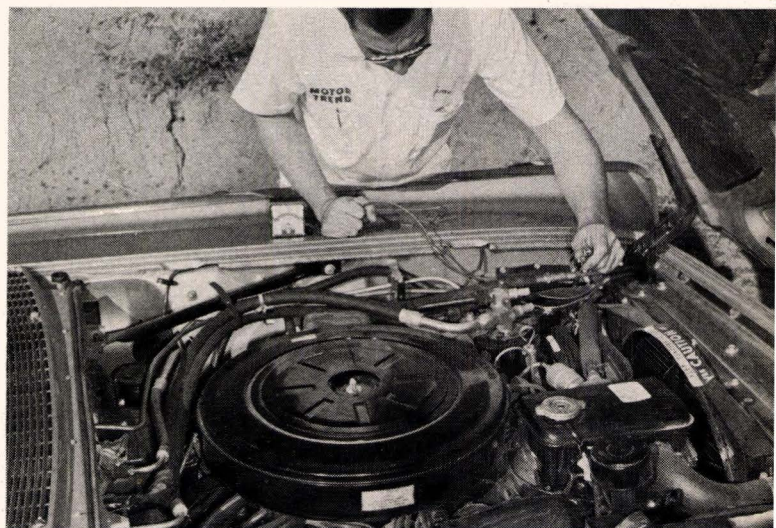
Pressed steel disc, 14 x 6 K
9.50 x 14 whitewall tires

Body and Frame

Unitized: Torque box underbody structure with welded body shell
Wheelbase 123 ins.
Track, front 62.1 ins., rear 61.0 ins.
Overall length 213 ins.
Curb weight 5132 lbs.



Front passengers are well taken care of with contoured seats, armrest and a full array of luxury components.



The Continental has the largest powerplant in the field (430 cubic inches), but turns out least power (300 hp).



COMPETITION - NASCAR



Grand National cars are impounded and inspected in a restricted garage area under constant NASCAR scrutiny.

DAYTONA 500

Fastest 500-miler ever run sets a new NASCAR Daytona record of 152.529 mph as veteran Fireball Roberts wins his first tri-oval 500

by Max Muhleman

WHEN FIREBALL ROBERTS streaked under the checkered flag at the world-record 500-mile average speed of 152.529 mph in February's Daytona 500 stock car race, a mechanic in the last stall along Daytona Speedway's pit road tossed his black cowboy hat as far into the air as he could hurl it. This was Smokey Yunick, the resident mechanical genius of Daytona Beach, Florida, enjoying perhaps his finest hour — certainly his most dramatic.

Yunick's elation was not simply over winning one of the richest stock car events in auto racing. He had already announced his plans to quit NASCAR's big league stock car circuit with the 1962 Daytona 500 to devote himself exclusively to an Indianapolis car, and when Roberts came flying home in his black and gold '62 Pontiac it meant that Yunick could retire a champion.

The Daytona 500 victory was the consummation of a brilliant two weeks for mechanic Yunick and chauffeur Roberts. They had won everything they entered in Bill France's colorful Speed Week program, and smashed all records in the process. The most spectacular marks were their five-mile qualifying speed of 158.744, their 100-mile race speed of 156.999 and the 500-mile average, 152.529.

These astounding stock car speeds were no accident, however. Equally as impressive as the skill and daring which Roberts exhibited in lead-footing his way to checkered flag after checkered flag was the flawlessly thorough manner in which Yunick prepared the machine.

"There were nights when we didn't get a wink of sleep," admitted Yunick after the triumph. "A particular one I remember was Friday before the Sunday of the 500. We had just won our 100-mile qualifying race and I decided to tear down the engine. It was daylight before we got it back together, then we had to go through inspection again. (Yunick tore down his 421-inch Pontiac engine four times between his first qualifying run and the 500-mile race.) That next day I could hardly move my right arm. It felt like all the nerves on my right

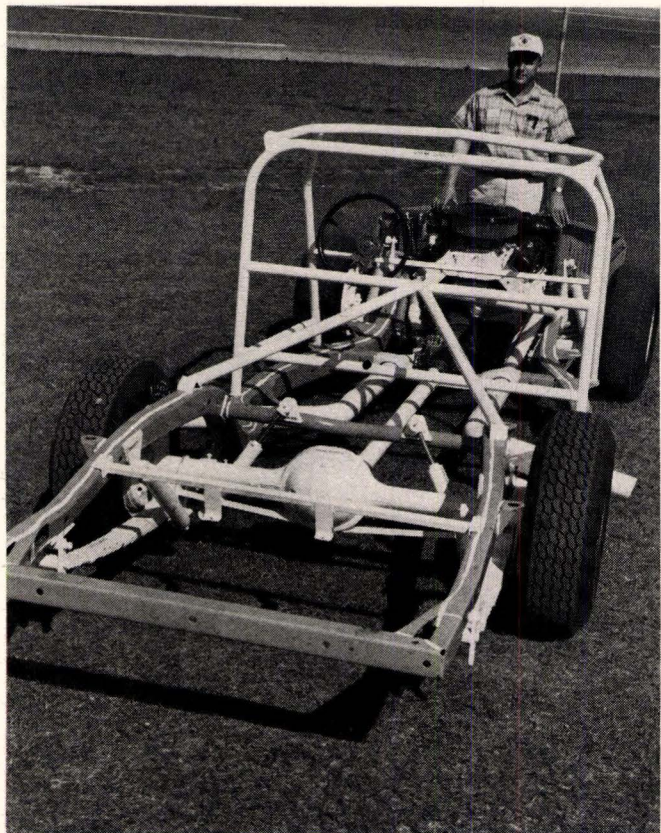
side had gone dead. I guess it was a sort of exhaustion."

According to NASCAR regulations, an engine may be torn down after it has passed its initial stock inspection, but after any such tear-down, it must re-pass inspection. The only adjustments allowed are those which bring tolerances and clearance to a uniformity specified in the rule book. Hence, the better-performing NASCAR stock cars are not wholly unlike European racing machines in that they might be considered "hand-built," rather than run with the slight imperfections which American assembly-line production breeds.

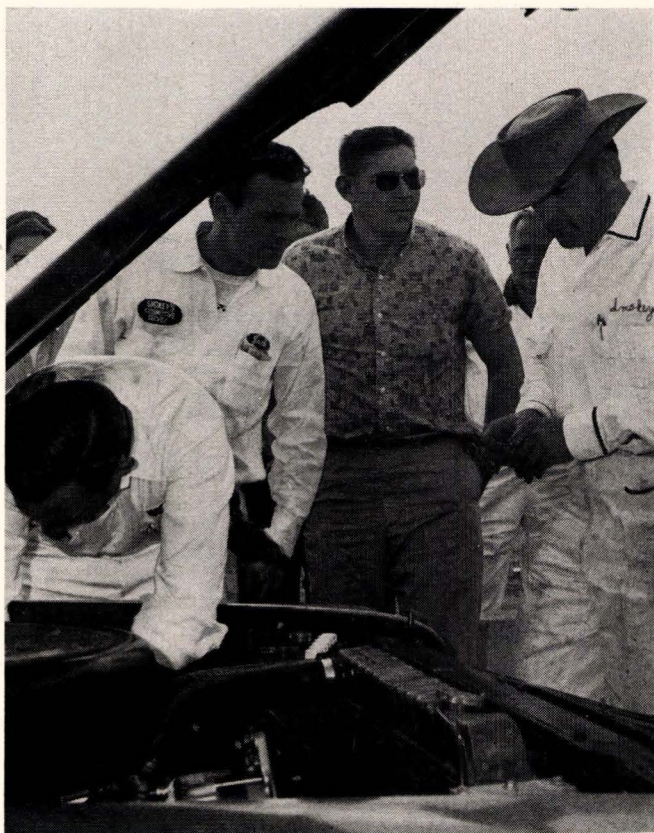
Except for the rule which allows only one four-barrel carburetor on any Grand National (late model stock) car, bolt-on speed equipment must be limited to that which is turned out by the manufacturer. It is in this area that Pontiac has made its biggest strides — advances in the production of performance equipment which, in the hands of mechanics such as Yunick, can be turned into veritable bombshells of speed.

But to say that Yunick won because he had the best driver in the best automobile would be grossly unfair to his own ability. Although Yunick refuses to support it, word from authoritative sources at Daytona was that one Pontiac engine which he built for Roberts' car pulled a true 440 hp in a dynamometer test, while the next best horsepower figure on Pontiac engines put together by other mechanics was 420. This reportedly did not include all the '62 Pontiacs entered at Daytona, but enough of the hotter entries to serve as an imposing testimonial to Yunick. The figures referred to, it should be pointed out, indicate honest horsepower and not the "showroom" figures which are advertised.

No small part of Yunick's task was to make a decision between the 389-inch Pontiac block which was the racing engine of 1961 and the new 421-incher. "We wrestled with it for a long while — right up until a few days before the 500, as a matter of fact," said Yunick. "We knew that because of different gear ratios we would have to turn the big new engine tighter than the 389, and those extra revs could mean



John Holman with one of his Holman-Moody Fords modified for stock car racing. Driver is protected by steel cage.



Fireball Roberts (flowered shirt) and Smokey (The Hat) Yunick hold under-hood conference on winning Pontiac.

Daytona 500 *continued*

trouble over 500 miles. The power was almost the same from both blocks, although Roberts told me the 421 accelerated better."

As it turned out, Yunick at last decided on the new 421. He announced his decision to Roberts one morning with this cryptic statement: "We'll go or blow with the big one." Roberts grinned and replied, "Suits me. I've got just one request. Let's charge all the way."

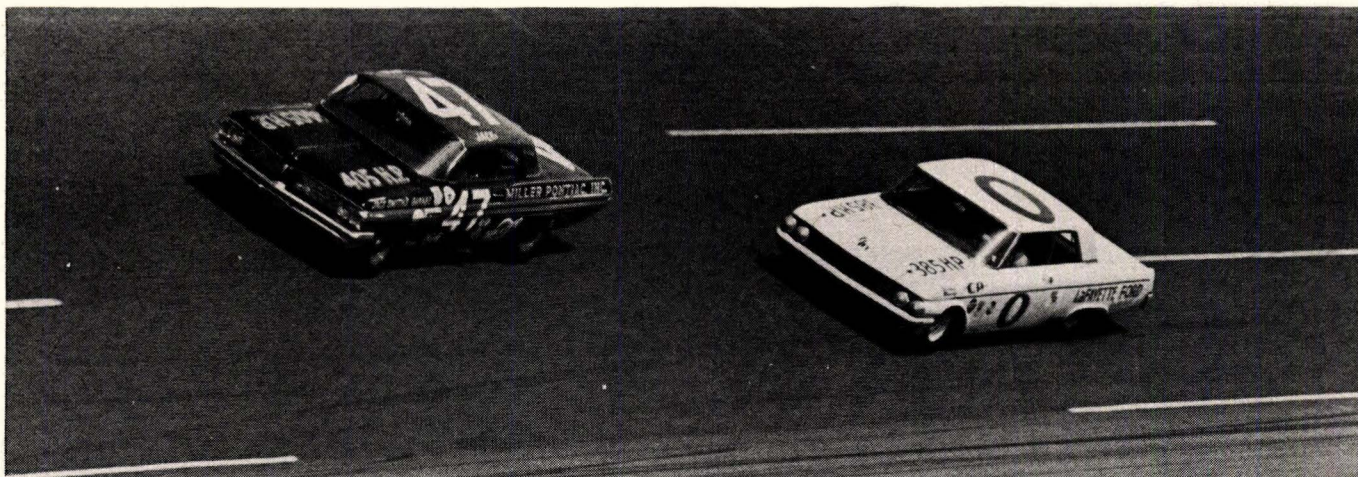
The Daytona 500 was something special to Roberts, also. Daytona was his home town, yet he had never won either a Daytona 500 or Firecracker 250 race at sprawling 2½-mile Daytona International Speedway since President Bill France swung its gates open in 1959. In the meantime, Roberts had either won races or set records at every other major track in the NASCAR kingdom. Also, he had led every Daytona race but had finished none. His frustration reached a peak in the 1961 500-mile when, with a huge lead, he encountered crankshaft troubles with 18 laps to go.

The Saturday before the Sunday on which the 500 was to be run found Roberts patrolling the Daytona Speedway pits as a spectator at the 250-mile Modified-Sportsman race. "People kept congratulating me on my intelligence in not running the modified race," puzzled Roberts, "but I really wouldn't have minded running at all. Personally, I think it's a lot safer race

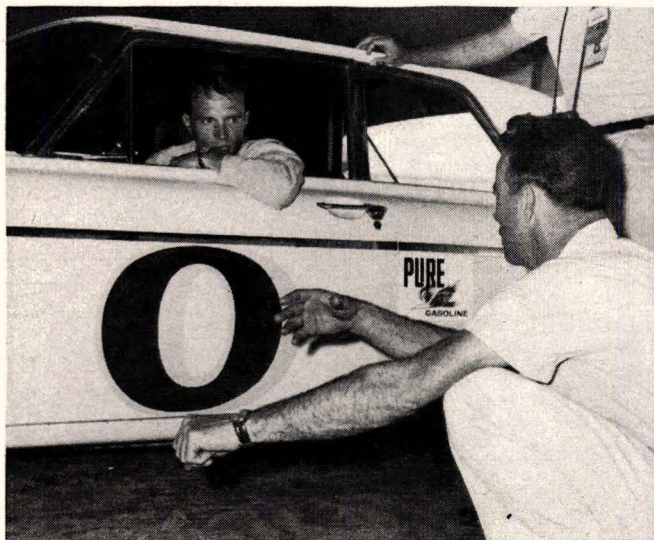
than the stock car events. You don't have near as many cars running about the same speed. They get strung out pretty well and traffic is no problem."

When the green flag fell, Roberts looked almost like a better prophet than driver. After Nelson Stacy had charged to the front, encountered mechanical troubles and dropped out, the 54-car field strung out neatly behind two drivers with same-sounding names, although no relation — Lee Roy Yarborough and Cale Yarborough. Larry Frank and Frank Secrist showed signs of strong challenges for many miles, but it went down to the checkered flag just that way: Yarborough first and Yarborough second. This one was soured with irony. Winner Yarborough was piloting a '56 Ford which Roberts had once driven on the old Fish Carburetor team. The supercharged Ford engine which Roberts had jockeyed had been removed for a Pontiac mill, however. Runner-up Yarborough was behind the wheel of the T-bird-engined '56 Ford which Jimmy Thompson had driven to victory in the 1961 250-miler. Marion Cox, who built Yarborough's machine, looked like a man who plans his races to the last foot when the car belched blue smoke on the homestretch of the last lap and breezed under the checkers with a blown engine.

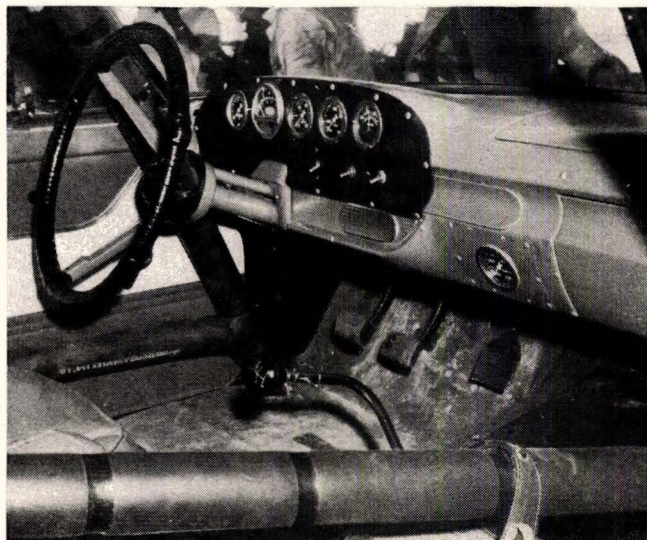
There were no accidents, and, except for the very early laps, negligible close competition. It was quite a departure from the day before, when the Grand National boys ripped off their two 100-mile races. These two events were staged to determine starting positions in the 500-miler behind inside pole-winner Roberts and outside pole-winner Darel Dieringer. Roberts bat-



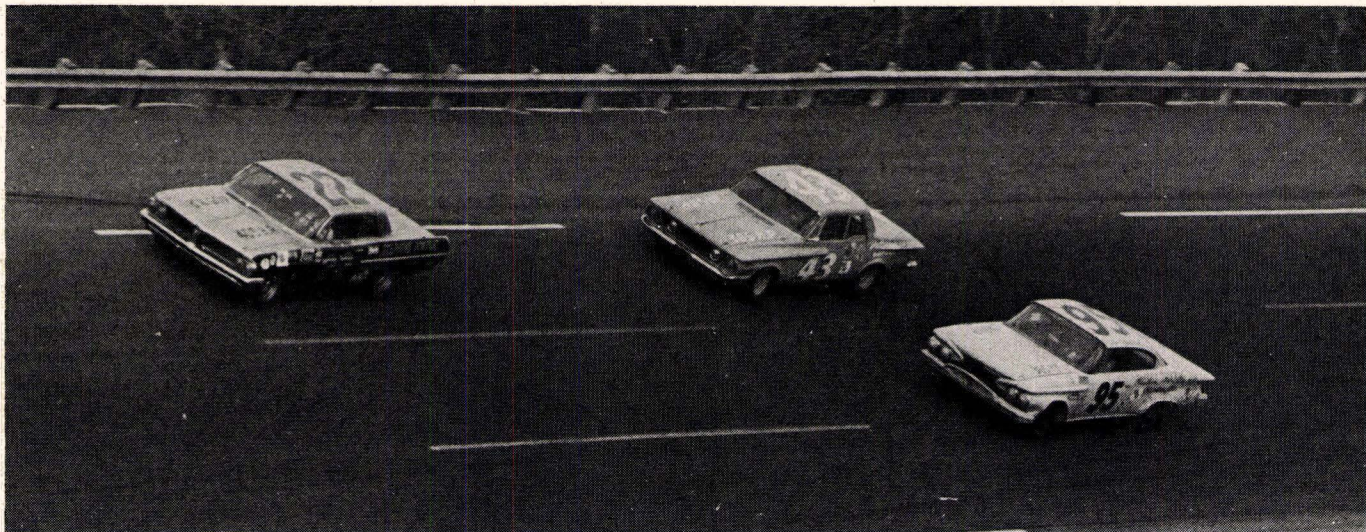
SPORTS CAR DRIVER DAN GURNEY IN THE FORD NUMBER ZERO HELD A STRONG FOURTH POSITION, DUELING WITH SEASONED NASCAR VETERANS.



Ralph Moody, right, gives some pointers to driver Dan Gurney prior to final practice sessions on Daytona oval.



Driver's compartment of the second-place Plymouth driven by Dick Petty is well protected by sturdy roll bar cage.



DICK PETTY, NUMBER 43, RIDES DRAFT ON WINNER FIREBALL ROBERTS' CAR AS THEY BOTH PASS THE '61 PLYMOUTH OF JIMMY CUSHMAN.

tled Junior Johnson in another '62 Pontiac for miles before finally pulling away to a decisive win at the end of the first 100-miler, and behind Joe Weatherly's first place '62 Pontiac in the second, a battle royal raged between Nelson Stacy's '62 Ford and Rex White's '62 Chevrolet for second, Stacy finally getting the upper hand.

Weatherly's average speed in the second was cut to 145.395 mph because of several laps run under the yellow flag following a mass spin-out started by Dieringer in a '61 Pontiac. There was precious little Dieringer could have done about it, however, for he struck an oil slick in one of the banked turns while in the process of making a bid for the lead. Dieringer's car was the '61 Pontiac which mechanic Ray Fox had built for young David Pearson the year before. With the car, Pearson had won three major events — the World 600 at Charlotte, North Carolina, the Firecracker 250 at Daytona and a 250-miler at Atlanta. The car suffered extensive body damage, and when Fox at last got it in shape for Sunday's race he installed Pearson in the cockpit after being informed that the '62 Pontiac he had built for handsome Dave was ineligible for the 500 since it had not been qualified for the Friday 100-milers.

Sound complicated? Fox thought so too, and a few drivers protested the ruling in behalf of Pearson, but scrutiny of the entry blank proved the NASCAR referees correct. No qualify, no run. The potency of the new '62 models was brought home when Pearson was able to finish no better than sixth in the 500 despite a highly commendable day behind the wheel of the machine that had dominated NASCAR's super speedways the year before.

Clearly, if the week's practice runs and Friday's two 100-milers were any sort of criterion, the 500 was to be a battle of Pontiacs. Yet the surprise of race day was a strapping young man from Randleman, North Carolina, named Richard Petty and his '62 Plymouth. With his three-time national champion father Lee working his pit, Richard darted high around Daytona's steel guard rail on the first lap and fell in behind the two chargers who were to set the torrid early pace — Roberts and Junior Johnson. Through the "drafting" process which is such a big factor at super-speed Daytona (running in the vacuum area behind a faster car, increasing the speed of the trailing car), Petty clung to Roberts and Johnson for long miles but was finally shaken when Roberts fell in behind Johnson and began literally pushing him down the backstretch at an estimated 165 mph. When the first pit stop was made, Roberts and Johnson had put a lap on the field, and it was this margin that was to be Roberts' insurance. Johnson fell out before the halfway mark with a blown engine, but Roberts went sailing on at top speed to his victory.

Young Petty made one less pit stop than Roberts (four to five) and fell in behind Roberts twice more during the afternoon for high-speed "rides" that kept him in the running all the way, but he was never able to make up the lap that Roberts had earned early and finally finished second by 28 seconds.

Roberts changed his two outside tires once for insurance, although Firestone men at the scene agreed that he was getting such fine wear that he possibly could have gone the distance on original tires, as did Petty. Tires, however, were not the cause for mid-race alarm. On his second stop, Roberts informed Yunick that his oil pressure had taken a dive. Yunick raised the hood, rushed in four quarts of fresh oil, and sent Roberts on his way with their longest stop of the day — 65 seconds. Two more quarts were added the next stop and Roberts finished without further problems.

The ingenuity of such top stock car mechanics as Yunick was illustrated on the second oil stop. In order to pour the oil as swiftly as possible, Yunick had placed the two quart cans under the hood of an idling automobile which sat parked near his pit. The engine heat thinned the oil sufficiently for Yunick to cram it into the engine before his pit crew could refuel the car.

Roberts and Petty were the only two drivers to complete the full 200 laps. Joe Weatherly and Jack Smith in '62 Pontiacs and Fred Lorenzen in a '62 Ford completed 199 laps and raced to third, fourth and fifth places, respectively. The top ten were rounded out by sixth-place Pearson, seventh-place Rex White in a '62 Chevy, eighth-place Darel Dieringer in the '62 Pontiac which Banjo Matthews had started, ninth-place Ned Jarrett in a '62 Chevy and tenth-place Bob Welborn in a '62 Pontiac.

What did it all prove? In the case of winners Roberts, Yunick and their new Pontiac, it proved that the necessary combination in a long-distance stock car race is top driver, top mechanic and crew, top car and long, hard work. Roberts had put in more practice laps than any other driver, including tire tests which he had made two weeks before the 500.

As an indicator of trends in stock car racing for the year, it proved that Pontiac is again the car to beat, but that Ford, Chevrolet, Plymouth and Chrysler could be reasonably expected to offer serious competition before long. As two-time national champion Buck Baker put it before blowing a tire and crashing the guard rail while running fourth in his 1962 Chrysler 300, "These Pontiac guys are still on top, but it can't last for long. This Daytona track is so fast and peculiar you can't forecast a whole year on what happens here. Personally, I think that there'll be plenty of competition for 'em before the year is half gone."

/MT



COMPETITION - NHRA

STOCKERS STEAL THE SHOW

High-powered late models please the crowds at NHRA's Winternationals

L IQUID CALIFORNIA sunshine and a week's postponement couldn't dampen the wild enthusiasm of 350-plus entrants or 39,000 aficionados from all over the country as they gathered recently at the famous old Pomona drag strip. The reason was National Hot Rod Association's Second Annual Winternationals dragfest.

All the top gassers were there, and when the last light was tripped, old-timer Jim Nelson and the Dodge-powered Dragmaster Dart were sitting firmly on the top eliminator throne. Jim's 170.13 mph and 8.71 e.t. weren't the meet's fastest but he has one of the coolest heads and *the* most educated throttle foot in the country, which he proved consistently by out-driving all the competition.

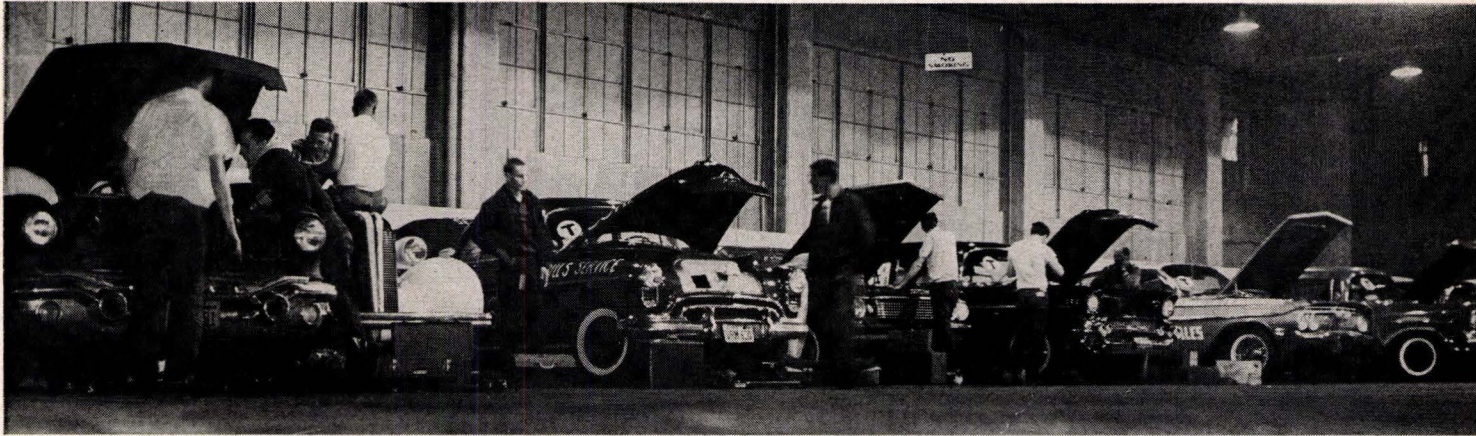
The crowd loved it, but even the big dragsters didn't bring them to their feet like the hot stockers did. Mild hysteria was the order of the day when Hayden Proffitt, Don Nicholson, Dave Strickler and the rest of the super and super-super stocks were going for the Mr. Stock Eliminator title. The action was fast and furious and the competition keen right down to the last few feet of the last run-off, when Nicholson put his '62 Chev in front of Strickler's for the big one.

Of the 26 stock classes Chev took ten places, plus stock eliminator, Pontiac was next with nine, followed by Ford, Buick and Dodge with two apiece and trailed by Olds with one. It's a tribute to the sport, the competitors and the NHRA that not one stocker was disqualified for any reason. /MT

Fast-paced action kept the capacity crowd on its feet most of the time. Event was incident- and accident-free.



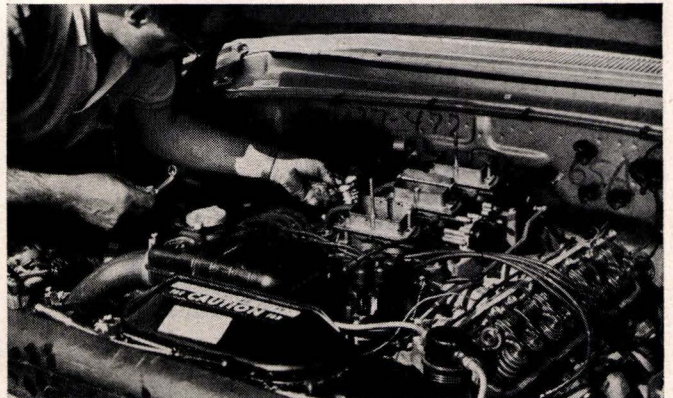
Over 2300 individually timed runs for the two-day meet were made possible by teamwork of NHRA personnel.



ACTIVITY IN THE HUGE INSPECTION AREA RIVALED THAT OF THE STRIP AS THE VARIOUS CLASS WINNERS DISASSEMBLED THEIR ENGINES.



Factory experimental class saw several interesting combinations, like this Chevy II wagon with 409 installed. Car took class with 108.96-mph run at 12.55 seconds e.t.



Pit action was furious, especially in the stocker area. Some of the more successful contestants used the P & G valve gapper to check and set clearances before each run.

Stockers Steal the Show

continued



NHRA rules say pump gas only, so checks were run on all cars to make sure no one had accidentally picked up the wrong can.



Carol Cox, one of the few women entered, showed the boys how it's done as she took S/SA Class gold at 107.65 mph and 13.06 seconds e.t. with a Hayden Proffitt-tuned Pontiac. Carol is a regular at most Coast strips.



Hotly contested SS/S Class was taken by Hayden Proffitt in his '62 Pontiac Catalina, with 12.75 e.t. and 111.94-mph top time. Proffitt had three entries and three wins.



Bill Dismuke, NHRA tech director, did an excellent job of checking cars for spec conformance.

Jim Nelson accepts Top Eliminator trophy from NHRA President Wally Parks. Jim picked off five champion contenders for the coveted title.





Proffitt's class-winning FX/A Tempest was crammed with 487 inches of screaming Pontiac. Charged through the lights at 117.27 mph, with 12.37 e.t. Car had big Pontiac driveshaft and rear axle. Engine was built by Thompson Enterprises.



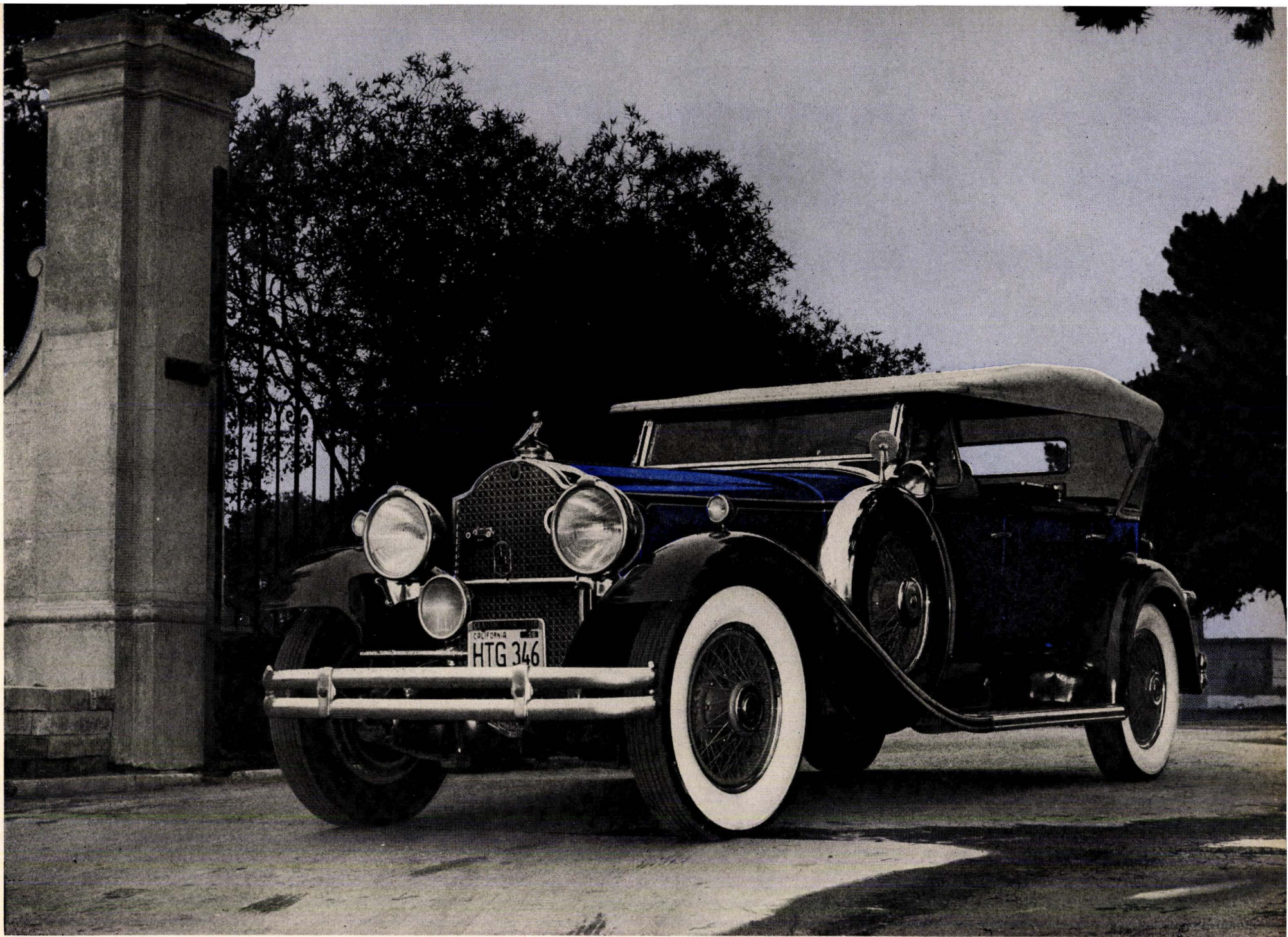
ANOTHER PROFFITT PONTIAC, ABLY DRIVEN BY CAROL COX'S HUSBAND, LLOYD, SHUT OFF EVERYTHING IN SS/5A WITH 107.78 MPH IN 13 FLAT.



BIGGEST CROWD-PLEASER OF THE TWO-DAY MEET WAS THE MR. STOCK ELIMINATOR GO THAT SAW 50 OF THE FASTEST TRYING FOR THE TITLE.



STRICKLER'S OLD RELIABLE COULDN'T MATCH NICHOLSON'S 109.22 MPH, 12.84 E.T. AS THE TWO '62 MODELS MADE THE FINAL RUN-OFF.



The good old days?

by Robert J. Gottlieb

1930 Packard Sport Phaeton

OUR FEATURE CAR is a late 1930 Packard Model 740 Sport Phaeton. It's owned by Mike McManus (see "The Good Old Days," April MOTOR TREND), and he has spent four years restoring it to its present condition. It's the same model car as that featured by Hubley in its new kit.

The Packard Motor Car Company designated models with numbers that mean something to the enthusiast who understands the numbering system. "Seven" stands for the 7th series (1930); "forty" means the 140-inch wheelbase. The 745 series means a Packard of the 7th series (1930) built on the 145-inch wheelbase.

The bodies for the 740 series were built by Packard. The bodies on all the 745 series were the custom creations of the classic era body builders. The popular misnomer for this car is Dual Cowl Phaeton. The manufacturer described it as a double windshield Sport Phaeton.

The present owner acquired the car many years ago and then spent the succeeding years in locating authentic parts and accessories. As an example, the spotlights are genuine; one was scrounged from a 1926 Packard and the other from an Auburn. Endless trips and searches finally produced such original important items as fenders, bumpers, windshields, and mechanical parts.

The car features a wild, original paint design consisting of a tan body, brown fenders and bright orange wheels. This combination was considered sporty, thus appropriate for a Sport Phaeton. Though the car was a production model, it contains many features of special interest. Those hard-to-find 7.00 x 19 tires are brand new. The transmission has four forward speeds, consisting of compound low, low, and the customary second and third. The Packard is an example of one built during the last year of the manually-operated one-shot lubrication. To lubricate the car, you pull out a knob. In 1931 and subsequent years the one-shot lubrication was automatic every 80 miles.

When new, the car sold for approximately \$4000, including the many accessories. The radiator ornament was an optional deluxe extra. The market price of this single item today is \$65.

Take another look at the photograph, and you will see an unusual extra which was included on Sport Phaetons but not on the other cars. It is the rear passenger ventilators cut into the body between the front and rear doors. Of course, the double cowl and double windshield were features that cost the original buyer additional money. Whether or not they effectively protected the rear passengers is a matter open to dispute. You have to fold the windshield, then raise the cowl (fortunately it's spring loaded) to get in or out of the back. Once you are seated, you lower the cowl, snap it into place with its hooks, raise the windshield — then freeze to death anyway.

Before road testing the car, we rode as rear tonneau passenger to ascertain the effectiveness of the second windshield. If you are reading between the lines, you will readily understand why we reserve comment. We were surprised to learn that the rear passengers sit up so much higher than the front passengers. You are actually a foot and a half higher than the driver, and this leads to an eerie feeling because you have the definite impression that the car is much higher than it really is.

Following a short briefing period, we took over for road testing purposes and recorded our impressions the instant they

arose. The first was most unfavorable. The car is extremely difficult to get into — so difficult that we wondered if we would really want to own it. There is insufficient room between the front seat and the front door for your feet. You have to be a contortionist and while we made it, every bone in our spine cracked during the process. Once behind the wheel, you notice that the seats are firm and that you sit erect. The curve of the back seat cushion was a little too great, the springs a little too stiff, and this led to slight discomfort.

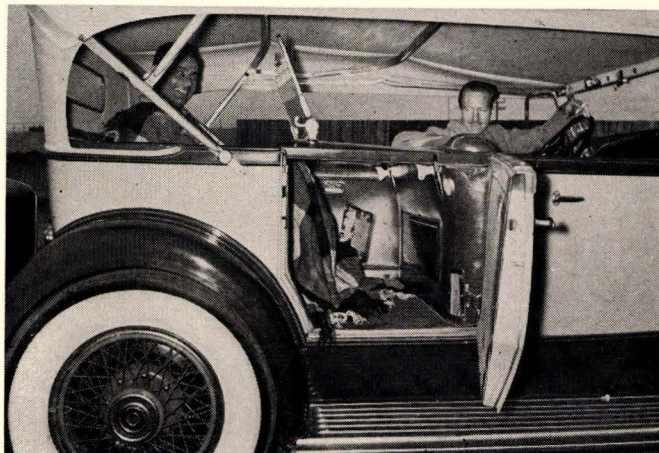
The huge-diameter steering wheel is well placed, the windshield height just right, and visibility to the front excellent. We could see both front fenders. Visibility to the rear is something else again, but we would describe it as being generally better than most phaetons.

It took some time to get used to the four-speed gearbox. You start off in compound low by moving the shift lever against spring-loaded pressure to the extreme left and back. Let the clutch out, give it the gas, and move the lever to neutral position, then straight back again and you're in low. The location of second and third gear is standard. You actually drive in compound low, then low, then second and third.

This car definitely has a sport car feel. It glues itself to the road on sharp turns and the 140-inch wheelbase smooths out all but the worst ruts. Steering is slow, hard, and best described as "difficult." If it were designed to be any faster, it would have been almost impossible to turn the wheel when the car was not in motion. In high you can throttle down to three miles per hour with no trouble at all. Acceleration was average when compared to other cars of the early '30s. It was naturally poorer if you compared it to a car of the mid-'30s.

The brakes were ample but by no means as effective as modern-day brakes. As is true when driving most classics, you can't follow the car in front too closely.

The smooth-running engine gulps gasoline at an average of eight to ten mpg, depending on speed and traffic conditions. The front wind wing (and other accessories) are extremely protective to the driver. We wondered about the visibility and comfort if the car had been equipped with side curtains. The owner expects to locate them some time in the future. There's really no hurry — it took him more than four years to find this much. /MT



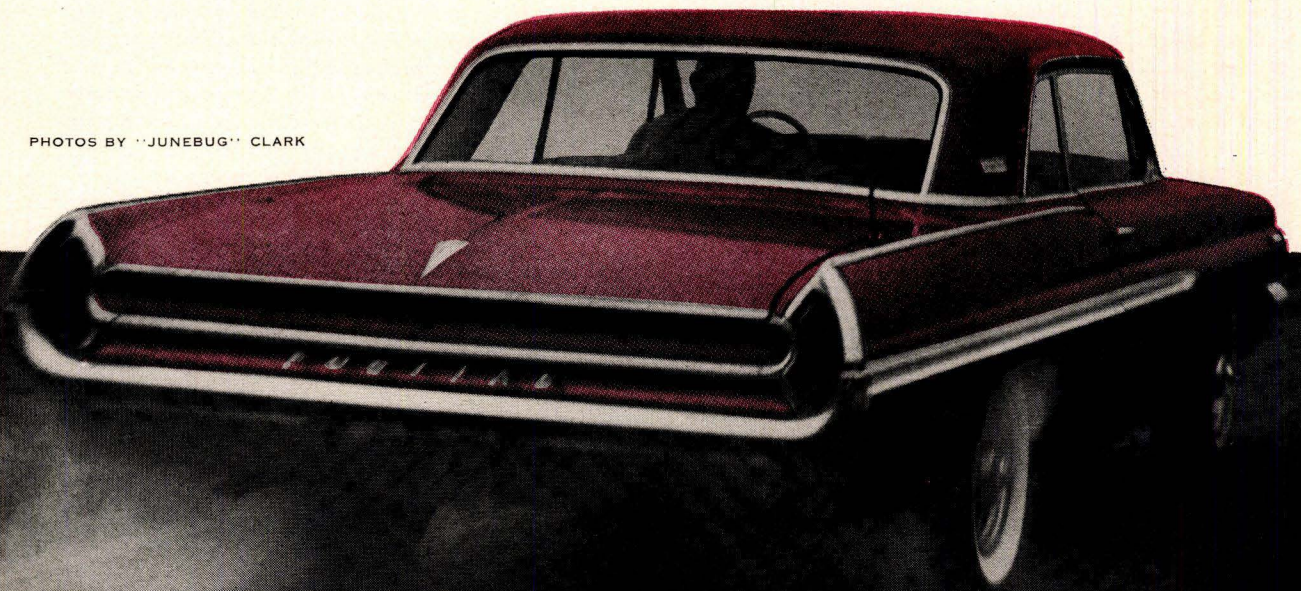
421

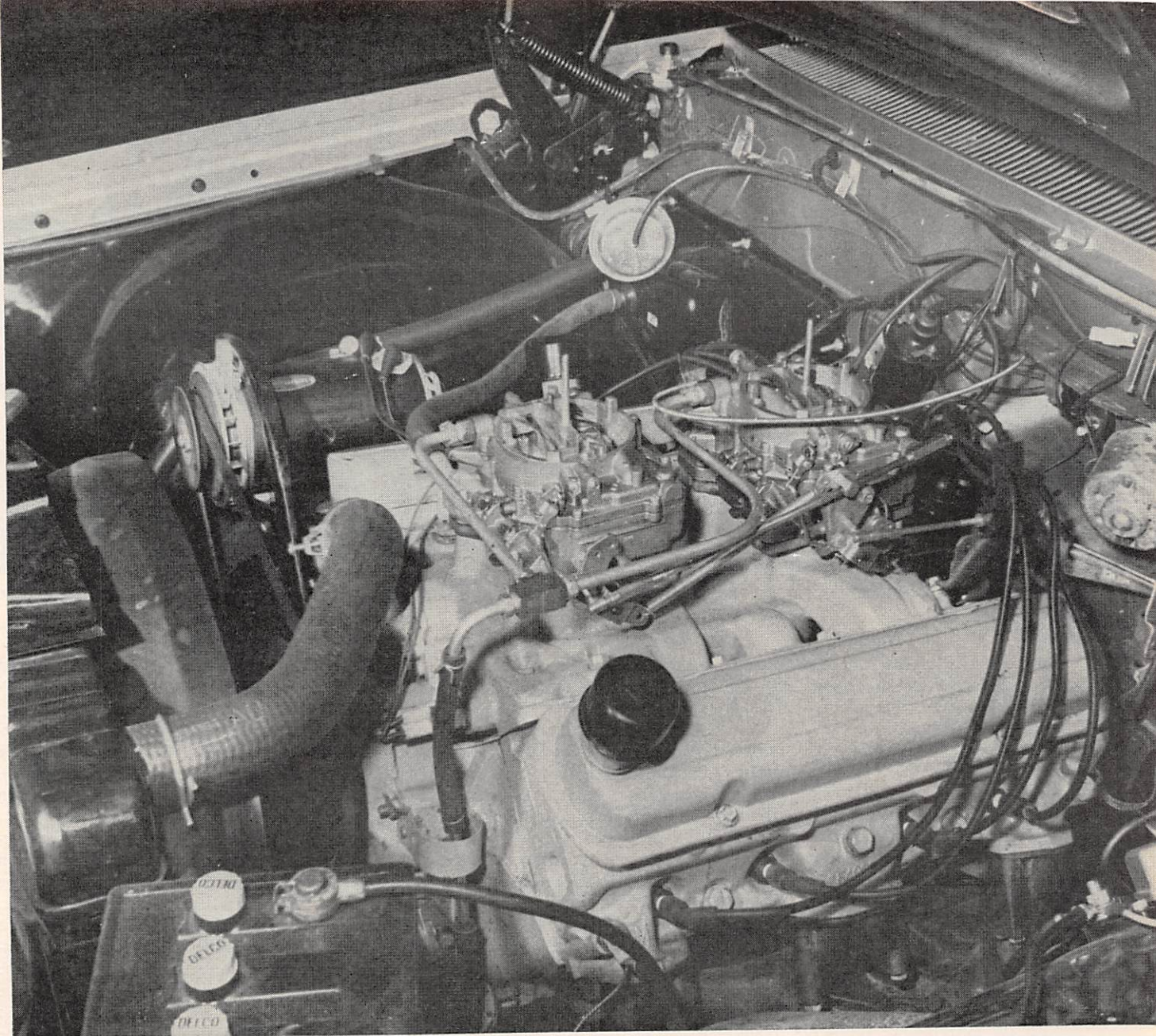


PONTIAC

by Roger Huntington

PHOTOS BY "JUNEBUG" CLARK





THE LIST OF COMPONENTS USED IN THIS FULL-RACE-FROM-THE-FACTORY MILL READS LIKE A CALIFORNIA SPEED EQUIPMENT CATALOG PAGE.

A new factory hot rod that makes fantastic power a buyer's option

JIM WANGERS pulled the big 421-cubic-inch '62 Pontiac Catalina coupe up on the starting strip of the Detroit Dragway, winged the throttle a couple of times and looked over at me. The scene was anything but suggestive of the big blast to come — a cold, gray January day, timing tower all locked up, puddles of ice and water down the center of the strip, a handful of devotees shivering in the background. I fingered my stopwatch. "Ready any time you are."

And *BOOM*. Wangers got into that big

Poncho, and we *went*. Low gear was a rubber-burning fishtail, with the indifferent traction available. A snap shift to 2nd at 5500 rpm, and 60 mph came up in a bit over five seconds. The bellowing open exhausts rattled the whole countryside. Second and 3rd gears almost tore my head off. Then across the finish line in high at 5300 — stopping the watch at 13.9 and 107 mph! And finally that delicious back-off, with the exhausts popping and banging, and the wonderful smells of gasoline and rubber and clutch lining!

And here's the joker: This Pontiac *had just been driven off the factory assembly line*, with no more tuning than a spark advance check and valve lash adjustment! Acceleration figures like these are not unusual these days in the Super/Stock classes on our drag strips. But when you can turn them with a car just the way you buy it, you have something to scream about. Think of the potential with a little more tuning and better traction conditions. Pontiac has a fantastic package.

Here's the story . . .



421 PONTIAC *continued*

IN ITS FRESH-OFF-THE-ASSEMBLY-LINE FORM THE BIG PONTIAC STANDS A GOOD CHANCE OF TAKING STOCK ELIMINATOR AT ANY DRAG STRIP.

In the first place, MOTOR TREND and I were fortunate to be able to get this car for testing so early. It was one of five of the first 421-cubic-inch jobs actually built at the factory, before a supplier strike shut off supply of the long-stroke cranks. Four of the cars (built in December) had gone to professional racing men for Daytona. But the Royal Pontiac people in Royal Oak, Michigan, who have sponsored a big performance program for three years and who seem to have an "in" around Pontiac on this sort of thing, were able to nail the other one.

The car was supplied through the cooperation of their performance sales expert, Dick Jesse. It was tuned and set up by Royal's performance specialists, Frank Rediker and Jack Kay. I asked Jim Wangers to drive because of his experience with four-speed Pontiacs. (You'll recall he won top stock eliminator at the 1960 N.H.R.A. Nationals with one of Royal's cars.) This crew really made the road test jump!

I should point out that a "super-duty" package like this off the Pontiac assembly lines is something brand new. They have always steered away from offering their hottest equipment options off the line because of service, assembly and adjustment headaches. Up until December the hottest Pontiac you could order complete had the 348-hp Trophy engine with hydraulic lifters. If you wanted anything hotter you had to buy the parts over the counter and assemble the combo yourself. What changed the picture was the new N.H.R.A. rule that all stock-class cars must be available *as is* off the factory assembly lines. Over-the-counter equipment must run in a separate "Factory Experimental" class.

So the Pontiac people have followed Ford and Chevrolet off the deep end, with

all-out *racing cars* assembled at the factory — and warranted just like normal cars. There are two packages, both available only in the Catalina two-door hardtop or sedan series. One is aimed at NASCAR track racing and will have the 389-cubic-inch block, single four-barrel carb on a cold aluminum manifold, and 3.42-to-1 rear end gears. (The 389 block is used because the Pontiac engineers are not sure how the long-stroke engine will stand up at continuously high rpm on the fast, banked speedways.) The other package is designed strictly for drag racing, with the big 421 engine and all the goodies — dual four-barrel carbs, close-ratio four-speed with Hurst floor-shift linkage, and 4.30 gears with "Safe-T-Track" limited-slip. This is the car we tested.

More specifically on the equipment: All late 421 blocks are coming through with .030-inch overbore, so this engine actually had 428 cubic inches. Cylinder heads are the '60-'61 high-performance type with 1.92-inch intake valves and 1.66 exhausts, bigger ports, undercut valve heads, and 1.65-to-1 rocker arm ratio to give high valve lift without excessive acceleration of the lifter-pushrod mass. The cam is the No. 10 McKellar solid-lifter job, giving 308 degrees intake duration and 320 degrees exhaust. The factory recommends a maximum of 5500 rpm with the standard dual valve springs.

The lower end of the engine is pretty well beefed up, with special heavy-duty connecting rods, Moraine aluminum bearings, Mickey Thompson forged pistons (giving 11.0-to-1 compression ratio), four-bolt main bearing caps, heavy-duty oil pump and six-quart pan, light flywheel with heavy-duty clutch and clutch counter-shaft.

The engine is set up loose for minimum friction. Pistons have a fantastic .009-.013-inch skirt clearance, .002-.003 bearing clearance, with .030-.035 side clearance on the rods. The pistons sound like a boiler factory when you start up cold — and the slap is only slightly less when warm! But it *runs!*

The carbs are big Carter AFB four-barrels that mount on a beautiful big-port aluminum manifold that *does not* have provision for exhaust heat in cold weather. A manual choke is provided. This, plus the fact that the special dual-point distributor has no vacuum advance, makes the car not really very suitable to drive on the street. You can get there and back, but it's like driving a racing car in traffic. The straight mechanical throttle linkage can overcarbureate at the low end, too — no problem on the strip, but not the best on the street.

Incidentally, they use a lot of spark advance on this engine: The factory recommends an initial setting of 10 crank degrees, with another 27 degrees in the distributor — giving a healthy 37 crank degrees advance at the top end. The Royal mechanics frequently use five to ten degrees more on the initial setting. The engine seems to thrive on it.

The exhaust system deserves special comment. The unique "pulse-flow" dual-outlet cast-iron exhaust headers used for the last two years (where you have cylinders on each bank paired into two outlets so that exhaust pulses do not overlap) have been redesigned with huge *three-inch* outlets, two on each side. Then we have a special casting that bolts to the header outlet flange, with a three-inch opening on one side and an adapter for a 2.25-inch exhaust pipe on the back. The side open-

ing can be uncapped to free the exhaust at the drag strip. In other words, we have a factory "lakes by-pass." (Who could have predicted it ten years ago?) When capped we put the exhaust through dual low-restriction mufflers that give a maximum of quieting with minimum back-pressure — very efficient.

The above engine and four-speed transmission package carries a list price of \$1342.85 over the standard V-8 engine and three-speed transmission. In addition, our test car had several other extra-cost options, including heavy-duty radiator, battery, stiffer springs and shocks, Kelsey-Hayes aluminum wheel-drum units, radio, heater, interior decor group, etc.

About the only options you'd really need for the drag strip (other than the engine-transmission-rear axle package) would be the heavy-duty springs and shocks — which list at only \$3.82. This would save weight as well as money. Our test car weighed 4070 pounds without passengers and a full tank of gas. You should be able to strip 250-300 pounds off for racing, maybe more.

But to the performance test...

To begin with, our using Gil Kohn's Detroit Dragway for this test had both advantages and disadvantages. The big advantage was that we could uncapped the exhaust, which wouldn't have been possible even on our isolated test areas on public roads. The big disadvantage was poor traction. The strip had recently been covered with ice and snow, was dirty, and bite was nowhere near as good as under normal drag strip conditions — or even as good as a concrete highway. So the Royal team threw on a set of Goodyear



The unbeatable Hurst-Campbell floor shift and heavy-duty linkage setup is standard equipment with the four-speed box and 421 engine combination.

9.00 x 14 soft recaps, and added about 150 pounds of ballast in the trunk. This helped a lot — but the car never bit very good off the line. Also it put our test weight up just under 4500 pounds, which didn't do anything for the speed at the end of the quarter.

Here's a recap of the acceleration figures under these conditions:

0-30 mph2.7 secs.
0-45 mph4.1 secs.
0-60 mph5.4 secs.

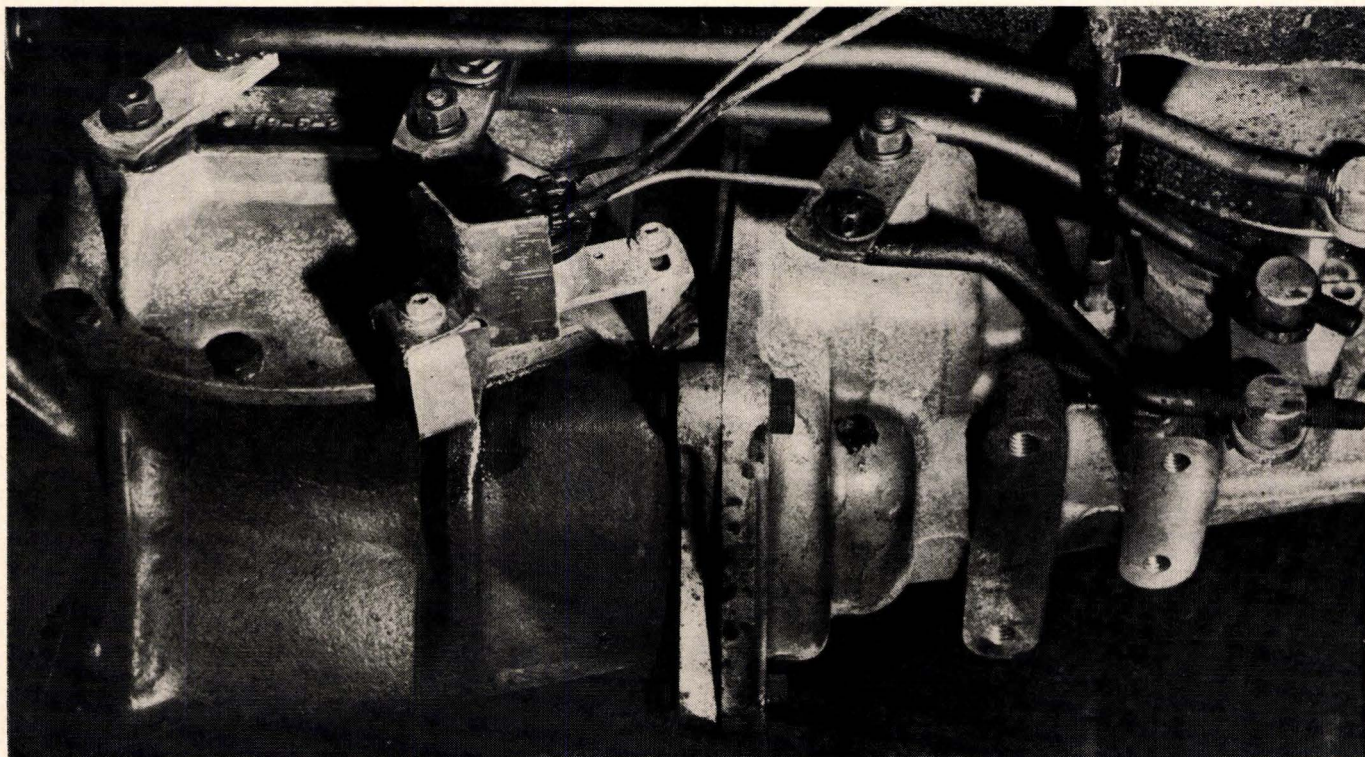
Quarter-mile13.9 and 107 mph

Wangers took it through the quarter once alone, without hand-timing and with the ballast out, and the tachometer indicated 109-110 mph. Keep in mind also that hand-timing with a stopwatch gives a bit different e.t. figures from the electric-eye timing at a drag strip.

My timing technique is to start the watch the instant the driver pops the clutch and punches the throttle, which is an instant before the car actually moves. With electric timing the car is rolling before it breaks the first light beam. I have found that this makes a difference of .2 to .3-second on e.t. for the quarter. In other words, with regular drag strip timing we would have been turning e.t.'s of 13.6 and 13.7 in this test.

I have no doubt that the potential of this car — under optimum conditions of strip surface, weather conditions, engine and chassis setup — would be e.t.'s around 12.5 and 112-115 mph! (And this would correspond to 0-30 times around two seconds flat, and 0-60's around 4.5!)

What shook me up more than the acceleration figures on the car was the horsepower and torque that it put out. The





421 PONTIAC *continued*

TEST CAR CAME EQUIPPED WITH CLOSE-RATIO CORVETTE GEARS, 4.30-TO-1 REAR AXLE AND ALL THE HEAVY-DUTY SUSPENSION OPTIONS.

factory rates this combination at 405 hp at 5600 rpm, and a maximum of 425 lbs.-ft. of torque at 4400 rpm. I took a series of accelerometer readings at various speeds in 3rd gear, and calculated out the true horsepower curve *at the clutch*. The peak was a fantastic 465 hp at a crankshaft speed of about 5300 rpm — and the peak torque was 510 lbs.-ft. at 3500! I didn't want to believe it either. But there it is. The accelerometer doesn't lie, as long as you feed correct speed and weight figures into the formula. I'm very confident of these figures within 10-15 hp.

Undoubtedly the cold air temperature (around 35°F) and open exhaust had a lot to do with it. The Pontiac advertised power figures are corrected to 100 degrees, under the GM "Test 7" code — and the difference of air density here would make a difference of around 30 hp. The Test 7 code doesn't call for mufflers, but our exhaust system might have been more efficient than the factory dyno system. I took a flash accelerometer reading at 5300 rpm with the exhaust outlets capped, and calculated 420-425 hp. That is, we were losing about 40 hp in the mufflers. So maybe that 460-465 is possible after all. I know it is possible to get more flash horsepower with an engine *in a car* than is generally possible on the dynamometer stand, running at constant speed.

One other important point on the engine: The power falls off very rapidly beyond 5400 rpm. A flash accelerometer reading at 5600 rpm showed that we had

dropped approximately 100 hp between 5300 and 5600! It felt almost as though you had shut off the fuel or ignition. And yet there was no sign of a miss or bucking.

A conference with Pontiac engineers solved the problem. It turns out that lower-tension dual valve springs from the 348-hp 425A engine are installed on these Super-Duty 421's at the factory, to prevent excessive camshaft lobe wear during the initial break-in. (After break-in you are instructed to install the regular springs.) Anyway these springs don't have the pressure to force the valves to follow the radical contours of the No. 10 McKellar cam above 5500 rpm. You don't get into a serious valve crash situation, but the power drops off pretty fast. With the regular Super-Duty springs, the Pontiac engineers say the engine should wind to 6200.

They also admitted that the '60-'61 high-performance cylinder heads, originally designed for the 389-cubic-inch block, didn't have enough valve and port area to feed the extra cubes of the new 421. The drop-off in power above 5600 rpm is steeper than it should be, even when the valves are working perfectly. It's obvious that another 20-40 hp could be available in this range with relatively minor head design changes. These new heads are now in the works. They've been designed and dyno-tested and are being tooled. They will be installed on assembly-line 421's as soon as possible. This might be the gimmick that will give us

those 500 honest horses and that 115 mph in the quarter!

In conclusion, a word on the chassis: The close-ratio Corvette gears in the Warner four-speed (2.20 low, 1.66 in 2nd, 1.31 in 3rd) seem to be definitely better than the wider-ratio gears when used with 4.30 or 4.56 rear end gears on the drag strip. You've got all the starting ratio you can use, and the narrow rpm drop between gears is very important when you have to shift right near the peak of the horsepower curve, as we did with the light valve springs. We shifted at 5400-5500 rpm, and the tach dropped back to only 4200 in the next gear. When you have a very broad, round peak on your power curve — and if you can wind *beyond* the peak in the gears — the close-ratio gears aren't so important. But I imagine this 4.30 axle combination with Corvette gears will still be the most popular with 421 owners.

Pontiac is installing the Hurst-Campbell floor-shift linkage as standard equipment on this package — and I'm glad to see it. I'm glad to see them willing to spend extra money for quality parts in this critical area. It's unbelievable how some of these drag strip drivers can punish a shifting linkage with their lightning-quick speed-shifts. Standard factory linkages (and even lower-quality conversion kits) can bust up like taffy under this pounding. I've seen them. You need brute *beef* here — and the Hurst linkage has it. And yet it works as smooth and quick

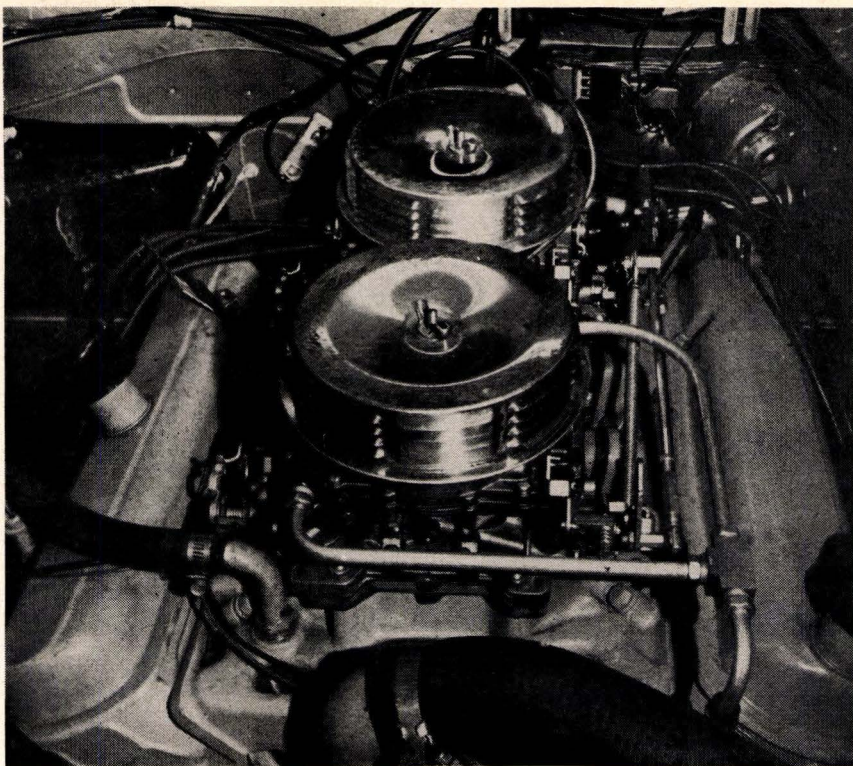
as grease. It's an ideal finishing touch to this out-and-out drag strip package.

I can't over-emphasize the importance of ordering the optional heavy-duty springs and shock absorbers with this package. They should have made them standard equipment. Any car with the weight/horsepower ratio of this one, with flabby standard-equipment springs and shocks, will dip and dive and bob and lurch all over the place when you blast off the line or throw a fast shift under full power. Our test car had the stiffer suspension, and it was real steady under hard acceleration. The nose hardly lifted and there was little heeling of the body due to torque reaction.

I must say this new 421 Pontiac is a terrific piece of automobile. I'm still shaking!!

/MT

A series of accelerometer readings showed horsepower peak, available at the clutch, to be 465 at 5300 rpm, with 510 lbs.-ft. of torque at 3500!



PONTIAC CATALINA

2-door, 6-passenger hardtop

OPTIONS ON CAR TESTED: 421-cubic-inch engine, 4-speed transmission, heavy-duty suspension, heavy-duty radiator, aluminum wheel/drums

PRICE AS TESTED: \$4895.56 (plus tax and license)

RECOMMENDED ENGINE RED LINE: 6000 rpm

PERFORMANCE

ACCELERATION (2 aboard)

0-30 mph.....	2.7 secs.
0-45 mph.....	4.1
0-60 mph.....	5.4

Standing start 1/4-mile 13.9 secs. and 107 mph

Speeds in gears @ 5600 rpm

1st	51 mph	3rd	89 mph
2nd	70 mph	4th	116 mph (est.)

Speedometer Error on Test Car

Car's speedometer reading.....	31	47	53	63	73	83
Weston electric speedometer.....	30	45	50	60	70	80

Observed miles per hour per 1000 rpm in top gear.....20.5 mph

SPECIFICATIONS FROM MANUFACTURER

Engine

Ohv V-8
Bore: 4.09 ins.
Stroke: 4.00 ins.
Displacement: 421 cubic inches
Compression ratio: 11:1
Horsepower: 405 @ 5600 rpm
Torque: 425 lbs.-ft. @ 4400 rpm
Horsepower per cubic inch: 0.96
Weight-to-power ratio: 10.04:1
Ignition: 12-volt coil

Rear: Coil springs; direct-acting 2-way shocks, torque being taken by control arms; heavy-duty stabilizer bars.

Wheels and Tires

Steel disc — 8 bolt
9.00 x 14 4-ply tires

Brakes

Hydraulic, internal expanding 2-shoe, single anchor. Ribbed aluminum air-cooled drums, with bonded cast-iron braking surface.
Front and rear: 11 x 2.50 ins. Effective lining area: 173.7 sq. ins.

Body and Frame

Perimeter type — boxed
Wheelbase 120 ins.
Track, front 62.5 ins., rear 62.5 ins.
Overall length 211.6 ins.
Curb weight 4070 lbs.
Steering 4.25 turns lock-to-lock bar.

Gearbox

4-speed, all-synchro; Hurst floor shift (dual pattern)

Driveshaft

Open tube — single

Differential

Hypoid — semi-floating
Standard ratio 4.30

Suspension

Front: Coil springs with upper and lower control arms; direct-acting 2-way shocks and heavy-duty stabilizer bar.



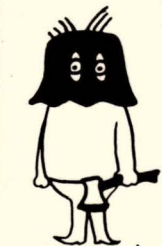
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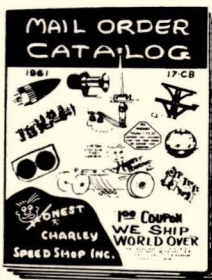
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FOR MANY YEARS, the outdoorsman had only two choices in off-highway transportation. He either purchased a four-wheel-drive vehicle, or if that was beyond his means, a power scooter.

Now a third choice is possible. Two separate manufacturers have marketed three-wheeled off-trail vehicles that look like toys but perform like camels. Designed primarily for transportation over sand, where other vehicles falter, the new Terra Kart, by George Du Bay, and the Maverick, by Bug Engineering, offer the strangest motor-powered combination to come along in years.

Both vehicles mount the amazing Terra tires developed by Goodyear Tire and Rubber Company. Shaped more like a beer-barrel than a tire, they literally "float" over sand, mud, snow, and rocks without damage, and without bogging down. They carry a pressure of only two pounds per square inch, which enables the Terra to fold around obstacles that would shred conventional tires.

the Terra Kart or the Maverick. They'll let you cross a sandy gulch that stops a Land Rover, and where scooters bog down, these new three-wheelers excel. In sandy country, over wet grass and loose gravel, up steep hills and across rocky flats — we tried everything. The two machines are quite different in design. Here are the results:

THE TERRA KART:

With a wheelbase of 52 inches and an overall width of 52 inches, the Terra Kart has two wheels in front, steers by the single rear wheel behind. Steering is a sensation best compared to a boat. When you tug on the steering wheel, things happen fast. The rear end swings wide, and the driver must constantly remember that fact. Inside turning circle is about 8½ feet. Cables and pulleys run from the rear-wheel yoke forward to the pulley attached to the steering shaft.

Two fiberglass bucket seats are mounted over the front wheels for weight and

MOTORIZED

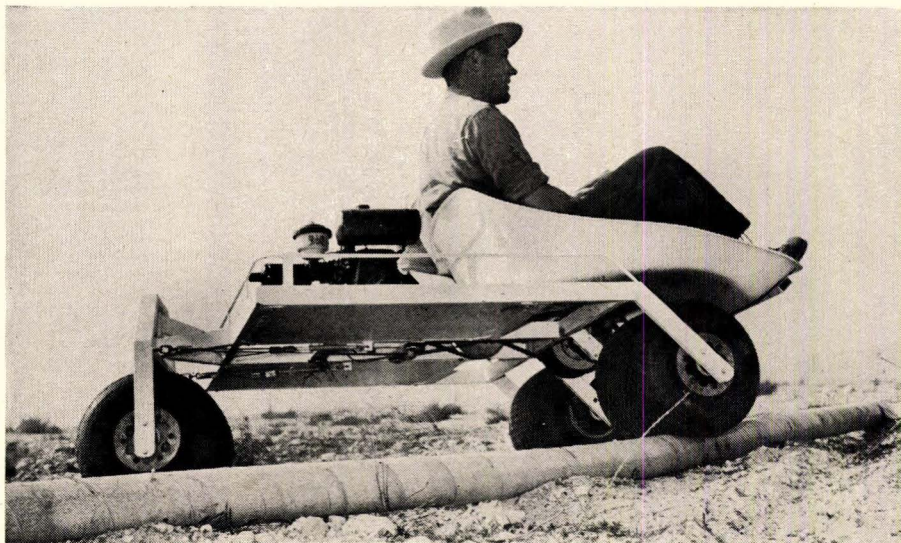
by Ben Reed

During a three-day test of the two new three-wheelers, they were run over a half-acre cactus patch, through sand washes, over sharp roots in a wooded area, and down a gully filled with broken glass, tin cans, and debris. They came through unscathed.

We ran through a variety of terrain in days that the average buyer would take years to encounter. Of one thing I'm sure. You've never ridden a vehicle quite like

traction. The driver steps into the Terra Kart with one easy motion. Frame height is about 12 inches, minimum ground clearance to the chain sprockets is about 5 inches. The first thing you notice is the side-saddle steering wheel. It's mounted in the center, between the two seats. Either driver can control the direction of Terra Kart, but only the driver on the left side can reach the brake and throttle pedals with his feet.

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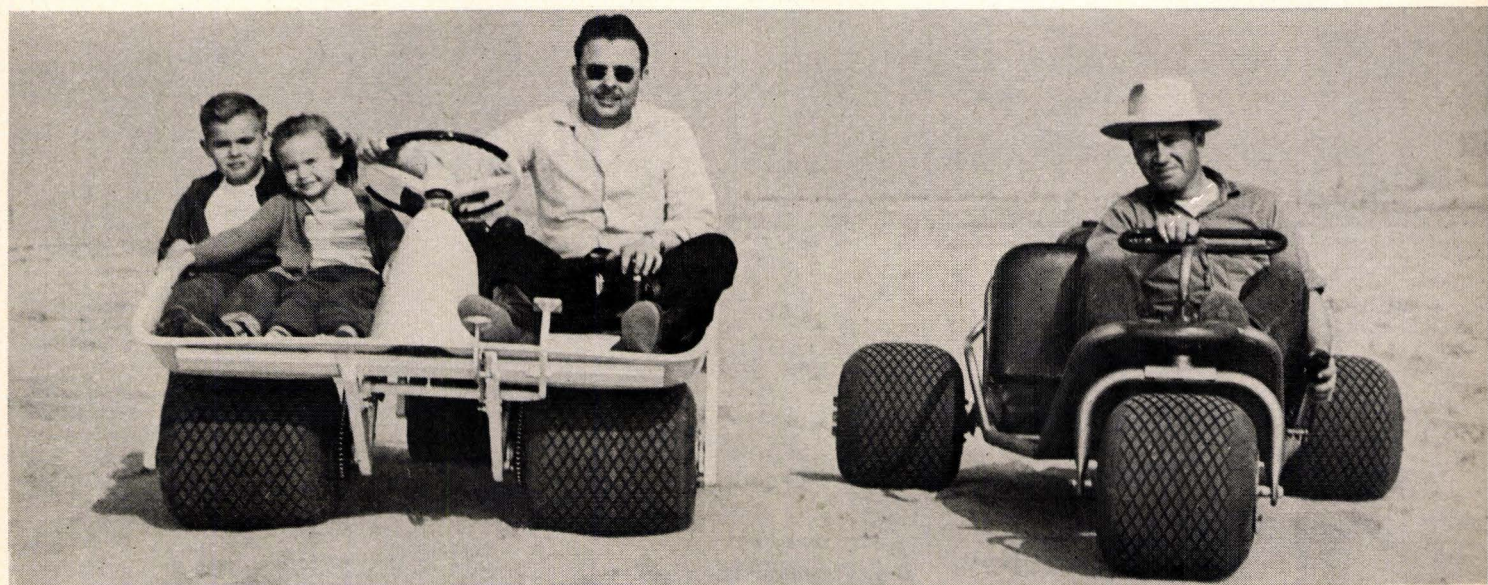


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BURROS

The Terra Kart and the Maverick
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for off-the-road adventures



TERRA KART, LEFT, STEERS BY WHEEL CONTROLLING SINGLE REAR WHEEL YOKE. MAVERICK STEERS FRONT WHEEL WITH TILLER LEVER.

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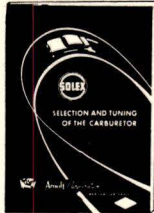
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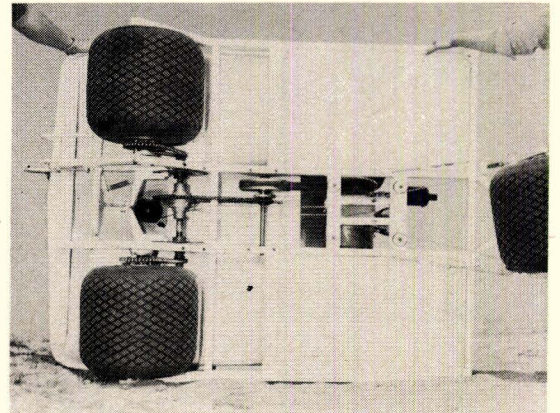
Motorized Burros *continued*

Power is supplied by a four-cycle Kohler, four-horsepower engine installed just behind the seats. Starting is by rewind cord. A roomy cargo rack behind each seat allows the transportation of tent, sleeping bags, food, water, and other gear. Advertised weight capacity is 1000 pounds or more, depending on the terrain encountered.

With the little engine fired, the driver hits the throttle pedal and the centrifugal-pulley, variable-ratio clutch takes over. At low speeds the clutch yields maximum pulling force. As engine speed picks up, the pulleys move apart, yielding a higher ratio and higher speeds. There is some slippage involved in this setup, but it isn't bothersome.



Free-wheeling centrifugal clutch on Maverick gives hair-raising ride as it hurtles down sandy slope.



Terra Kart undercarriage reveals chain-driven front wheels, variable-speed pulley-type transmission.

Even prickly pear cactus is no obstacle to the flabby Terra tires. The pressure is so low that no suspension is necessary.



The driving sensation over sand is weird. With a gentle rocking motion, the flabby tires drift from one silty mound to the next, never hesitating, never digging down. Terra tires flow over sharp projections like an amoeba on a glass slide. In one test, the tires were purposely guided over a broken bottle and then carefully examined. We found tiny scratches, but no cuts or damage.

The power train on Terra Kart consists of two jack shafts, a differential, and a variable-pulley clutch. A notched belt runs from the engine down to the clutch on the jack shaft. From there, a chain-sprocket leads off to the second jack shaft and a higher gear reduction. Chains then drive down to sprockets on each of the two front wheels. The caliper-type disc brake mounted on the jack shaft is actuated by a foot pedal. The machine is 38 inches high, weighs 250 pounds, with a frame of rectangular steel tubing, all welded joints.

The Terra Kart handles easily, and provides a comfortable ride. Low seat back height is objectionable, and could be increased for more support. Traction is good with two passengers aboard, but with a single driver, one wheel has a tendency to spin on rough terrain. Terra Kart will climb a reasonable grade, but the four-horsepower engine obviously has limits.

For surf fishing at the beach, crossing sandy wastes, exploring remote areas, it will do a good job with a minimum of difficulty. Base price is \$910 delivered anywhere in the U.S. Foam rubber upholstery adds \$15.25. Electric starter-generator is another \$70. Custom trailer is \$250. Canvas top is \$70 extra. If the buyer wants the machine less engine, deduct \$87.20. From: Terra Kart, 12691 Nelson, Garden Grove, California.

MAVERICK

This odd-looking three-wheeler was designed low-slung for maximum stability. Total height is 29 inches. Tires are 12 inch wide by 16 inch high Terras at a pressure of two pounds per square inch. Ground clearance to the frame is 8 inches. Clearance to the axle sprocket is about 4½ inches, but because the sprocket is close to one rear wheel, there is minimum difficulty with rocks.

Maverick's power train is simplicity itself. A single jack shaft is mounted ahead of the engine, which in turn drives the axle sprocket with an 18-to-1 reduction. A husky Mercury centrifugal clutch (three times as big as standard kart clutches) is fitted on the crankshaft of the seven-horsepower, four-cycle Kohler engine. All chain drive. Caliper disc brake is attached to the jack shaft, up out of the way of rocks and sand. Rear axle length is 60 inches and is supported with four bearing hangers at strategic points.

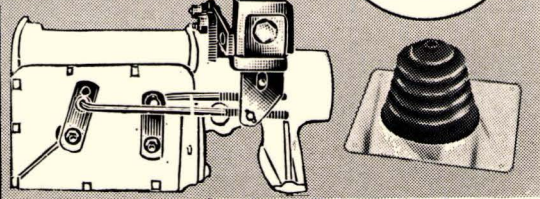
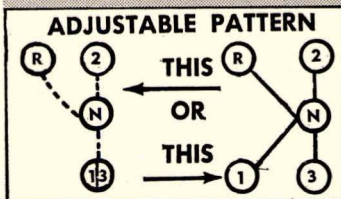
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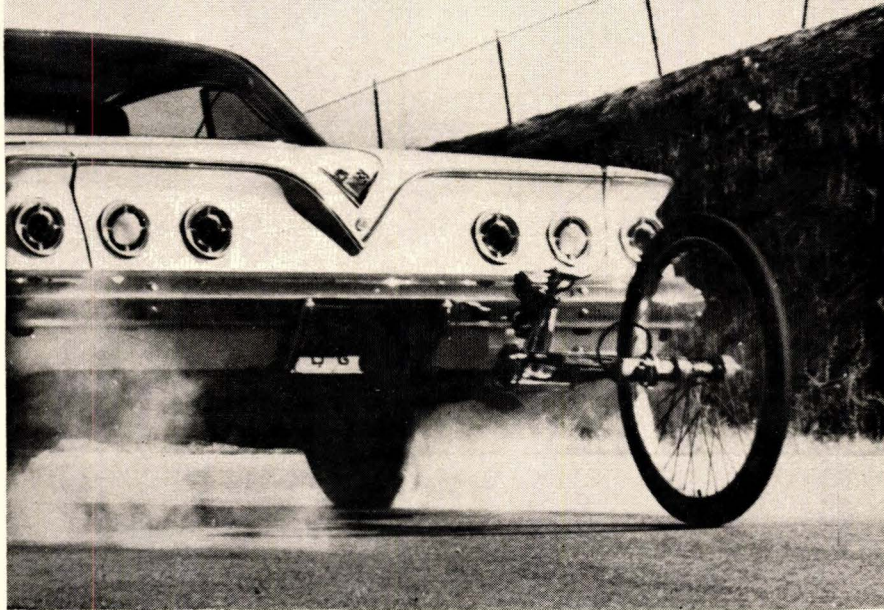
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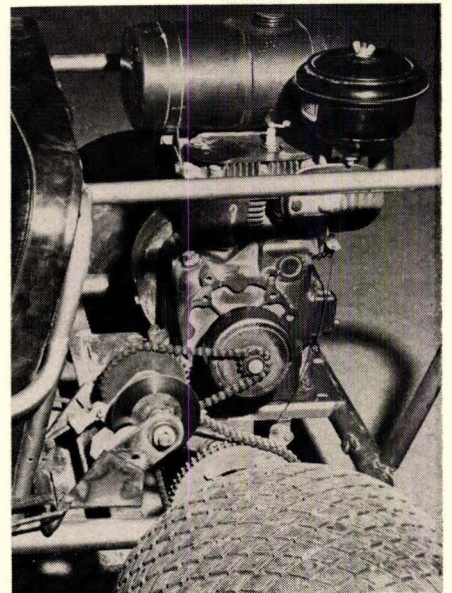
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Motorized Burros

continued

Control of Maverick is a unique single lever mounted on the left side by the driver's hip. Special linkages are attached to both the brake and the throttle. Push ahead to go forward, pull back to lock the rear wheels — simple and effective. On a downhill run, the brake will set the rear wheels instantly and stop the vehicle in a matter of feet — not yards. The lever is held under spring tension so that the machine can be stopped on a down-grade without a parking brake. Just release the control lever and Maverick comes to a halt. If the driver bounces out this could be an important safety factor.

Maverick is fitted with thick seat and back upholstery of reprocessed and ground plastic foam for support and comfort.



Kohler engine is powerplant on both of the three-wheeled burros. This is seven-hp installation on the Maverick. Terra Kart version produces four hp. Both start with rewind cord.

Seat back height is 18 inches, seat width, 34 inches. For one passenger, it's plenty roomy. For two passengers, it is cramped. The manufacturer intends to widen the seat on future models to take care of this problem.

Like the Terra Kart, Maverick has no springs or shock absorbers. The super-soft tires provide suspension on a wheelbase of 60 inches. Because the rear axle width is also 60 inches, the geometry forms a triangle that on rough ground works out well. No matter how uneven the earth, three-point suspension is always in contact, with no body twist. Unlike four-wheel designs, one wheel will not be left hanging in mid-air on uneven ground.

Conversely, following a road that is deeply rutted can be a problem for a

three-wheeler. One wheel will ride the center hump. But for cross-country travel, the three-wheeled design has certain advantages.

Overall length of Maverick is 79¾ inches. The one-piece frame is 1½-inch O.D. steel tubing that has only one weld—the rest are bends (excluding the seat and storage rack).

Driving Maverick is a real surprise. There is no worry about balance, as with a scooter. You start with a rewind cord, then hop into the Maverick and brace your feet. Push the throttle lever forward and the machine instantly surges ahead. Low gears force the engine to rev quite high in normal operation, which provides plenty of torque for climbing. Actual tests proved that the Maverick will climb a grade of 100 per cent or better. It surges up the slope of a hill to a point about half-way, then slows down to a chug-chug travel that eventually takes you over the top. On downhill grades, gently apply pressure to the disc brake or give the throttle a slight pressure to engage the clutch to hold you back.

The steering lever has a 10-inch plastic-dipped loop for the driver to grab. The tiller bar swivels inside a lubricated steel sleeve and is directly attached to the front-wheel yoke. Surprisingly, steering effort is light. Inside turning diameter is less than 8 feet. Getting used to the steering is a matter of about ten minutes.

Maverick weighs less than 250 pounds and can be carried in the back of a station wagon with the gate dropped, or inside the bed of a pick-up. A couple of husky guys could even load it atop a street sedan.

Top speed is about 15 mph due to low-geared chain drive, but the thing will go up, down, or sideways at about the same speed. Gear ratios can be changed in minutes by swapping sprockets. Test-driving Maverick revealed that on level ground it absolutely defies tipping over. It's low, and because passengers sit between the rear wheels, stability is excellent. The big, seven-horsepower Kohler, driven through the 18-to-1 sprocket reduction, provides all the power the machine needs to get you over sand, on snow, over medium-sized rocks, and up steep hills. It'll climb places a power scooter can't make, with more comfort. However, the axle width of 60 inches restricts its use to open country. On desert terrain it's darn near unstoppable, and over sand it has absolute mastery.

Base price is \$549.50 for the 4½-hp model, and \$595 for the seven-horse model. An optional top is available, and such other extras as electric starting, custom paint, storage racks, extra fuel capacity, and racks for water cans.

Fuel economy tests revealed about eight hours of driving on a single tankful of gas. From Maverick, Bug Engineering, 330 S. Irwindale, Azusa, California. /MT



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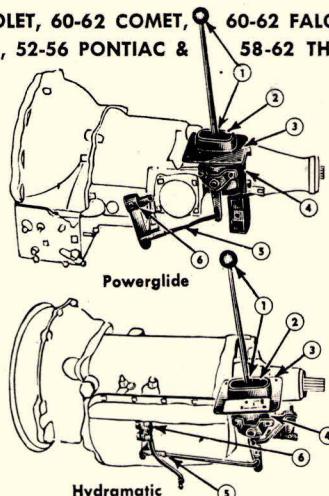
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PEUGEOT

An upgraded version of a classic import
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WHEN PEUGEOT announced their smart new 404 sedan a year or so ago, their intent was to phase out the more prosaic 403 from the U.S. market. But the anguished screams of American dealers could be heard all the way to the factory in Sochaux, France. Left with only the 404, the dealers were immediately out of the 403's attractive \$2250 price bracket. They liked the 404, but they still had customers who wanted the 403. The result: Today both are available in the United States, and the 403 has been improved and upgraded into the 403-B. That the decision to retain the 403 was wise is evidenced in its sales—it is selling in approximately equal numbers to the 404.

Changes in the 403 to this new B series are so subtle as to be almost unnoticed. They are the result of field reports in the U.S. market. There is nothing affecting appearance or horsepower. Instead, when complaints came in about valve burning and transmission troubles, these matters were corrected. Also, changes have been made in suspension, heater ducting and intake manifolding, perfecting an already good machine.

Our overall impression of the Peugeot is that it is sound, sensible, well-built transportation. It is a compact in every

sense of the word, comparing directly and favorably with several domestics. Quoting Peugeot, the 403 is "approximately the same price range and size as the Corvair, Falcon, Lark, Rambler and Valiant... and it's just a little bit bigger than a Rambler or Lark and a bit smaller than a Valiant or Falcon."

Now that we have its position pegged, let's find out specifically how it fulfils its role. Power is the first point. The engine is relatively small by our standards, twisting out 66 horses at 4750 rpm. From the car's dry weight, 2262 pounds, we know that acceleration cannot be outstanding. After a day or two behind the wheel, one learns to use the gears to keep up with traffic. The factory states that maximum engine speed is 4750 rpm, but we attached our portable tachometer and buzzed the

mill to 6000 without any audible protest, which indicates a substantial margin of safety. We found it to be smooth, quiet and capable of being lugged down to low revs without bucking or lurching when power was applied.

One of the keys to making the Peugeot go is judicious gear use. Fourth gear should be used as overdrive (40 mph and above) and rarely used in town where second and third provide enough punch to stay ahead of most traffic situations. First is synchronized, but we found that the car had to be moving very slowly to avoid a noisy gear clash. The shift pattern is somewhat different from most. The first three gears and reverse are just like a conventional column lever. Fourth is up toward second; push toward the dash at the neutral gate, and into gear.

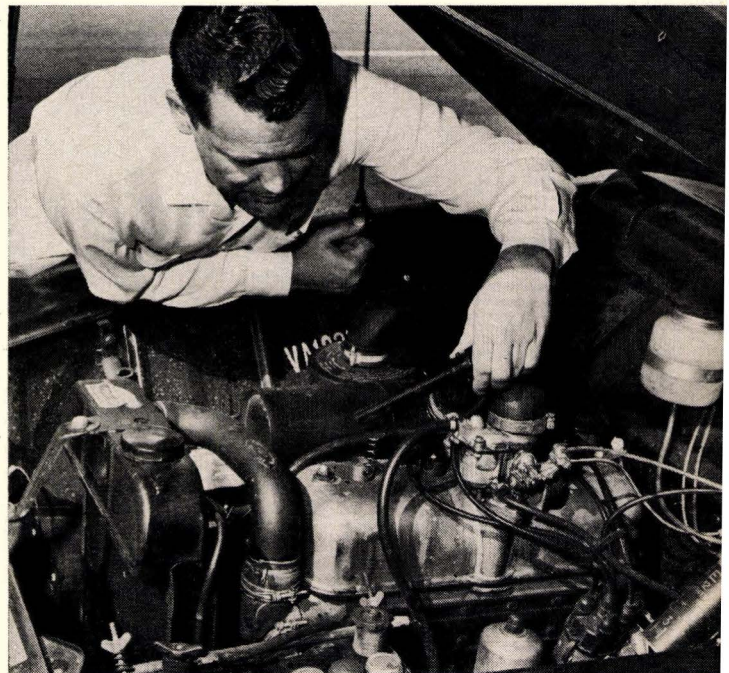
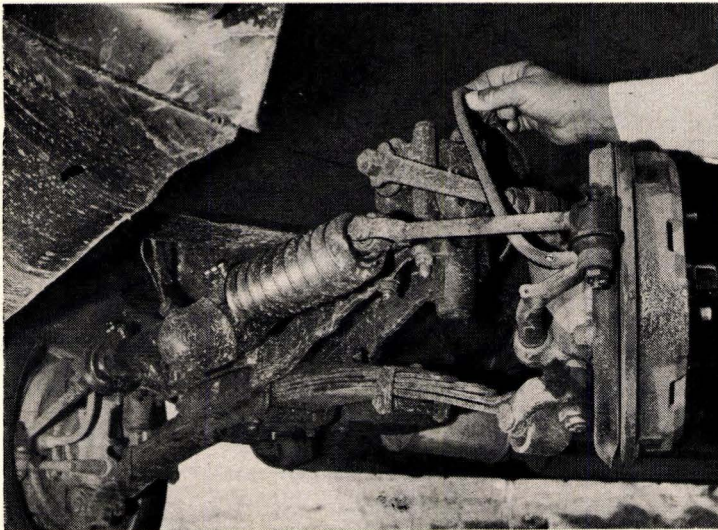
continued

Roomy interior features reclining front seats as standard equipment. Upholstery materials are a mixture of high-quality fabrics and vinyl.



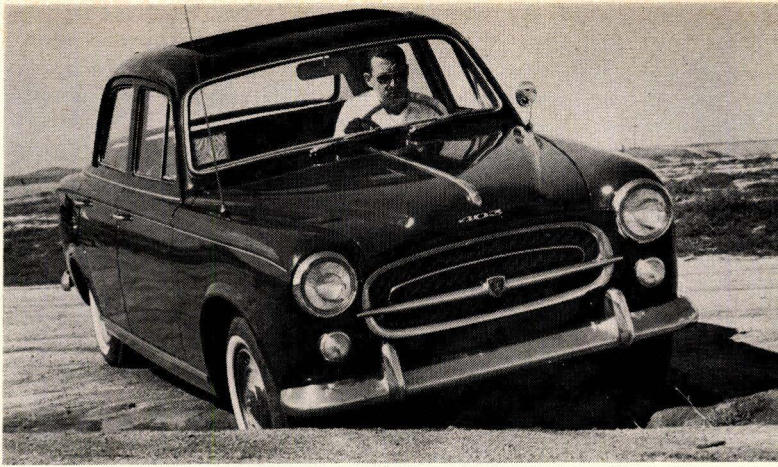
Front suspension uses shock/control arm with transverse spring. Steering is rack and pinion.

Aluminum head has hemispherical combustion chambers and integral intake manifolding.



403-B

by Wayne Thoms



Peugeot 403-B

continued

Suspension is rugged but comfortable. Excellent traction and adequate ground clearance allow the 403-B to take some pretty rough terrain in its stride.



Peugeot makes a point of its worm gear rear end, advantages of which are lower rear axle housing, less floor tunnel and more padding on the center of the rear seat. From those viewpoints it is effective and satisfactory.

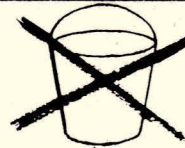
A point at which the car drew the ire of our crew was the location of the ignition key. A minor point? Yes, but one called to attention every time the car is started. The key slot is buried beneath the steering column at about dash level. There didn't seem to be any successful method of quickly inserting the key and twisting the starter without making a two-handed, uncomfortable procedure of it.

Where we felt the Peugeot was particularly impressive was in the stopping division. We found pedal pressures so light the brakes felt power assisted. And they haul the car down in a hurry in a straight line without locking, unless one really clamps them on. We had the opportunity to drive through some deep water and were pleased to find that the brakes did not fail until after such repeated dunking that any drum unit would

NOW! Clean and SHINE Every Inch of Your Car In 10 Minutes or Less... without Washing or Effort with Sensational New NENETTE Dust Absorbing POLISHER!



15" LONG-REACHES ANY PART OF CAR



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Sensational new invention, just imported from England. The amazing Nenetete Dust-Absorbing Polisher "eats" the dirt from your car and polishes your car at the same time... without water, without elbow-grease, without soiling your hands or clothes... in 10 minutes or less! Thoroughly impregnated with an astonishing chemical that absorbs dust and polishes car surface at same time. Will give you hundreds of car polishings... at a cost of less than 2c per polishing!

Actually absorbs dust... Improves with use... Lasts years

With Nenetete, you can start with dirtiest part of car (even the wheels!) and finish with interior trim... because Nenetete absorbs the dust. The longer it's used, the better Nenetete cleans and polishes. And the more often you use Nenetete on your car, the better it stays protected from dust and dirt. Handle keeps your hands clean; 15" long, so you can reach even the center of car roof without strain. Also ideal for polishing furniture. Get one for each car, another for furniture.

Nothing Else Like NENETTE on the Market!

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- Comes in handy hang-up metal container.
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I enclose check or money order \$3.95 to cover payment in full (or 25% if C.O.D.) for the sensational new Nenetete Polisher, which will be sent to me POSTPAID.

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have been saturated. It gave us a comfortable feeling of security.

It was during this downpour that we really determined what a snug, sound auto the 403 is. There were no leaks, even around the sunroof, where we expected to find a few drops. The heater-defroster worked like a charm, as did the wipers, and we were able to forge through the wet with no trouble.

Peugeot buyers have a choice of Michelin-X or Dunlop (whitewall) tires and we really can't see why anyone would choose other than Michelins — although our test car was not so equipped. Having some experience with Michelins, we feel that the car would have handled much better in the wet had they been installed. Michelins have a reputation for sticking on any surface and with very few exceptions will noticeably improve a car's road-holding. As it was, the Peugeot held on quite nicely, felt stable, and recovered itself instantly from a deliberately induced spin on wet pavement.

Rack-and-pinion steering, at $3\frac{3}{4}$ turns lock-to-lock, is reasonably quick. We found it to be heavy at low speeds and while parking, but it became very light at moderate speed. The 31-foot turning circle insures ability to maneuver in tight spaces with uncanny ease.

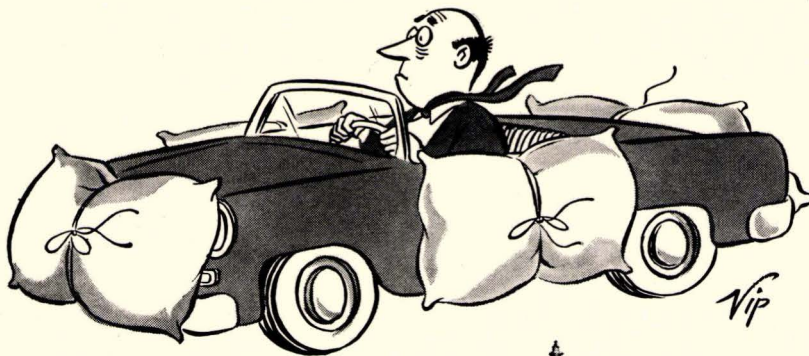
At 105 inches, the wheelbase choice has been made with an eye to passenger comfort. The 403 didn't have the usual small-car choppiness; in fact, we found the ride exceptionally comfortable. The suspension soaked up bumps satisfactorily and there was no undue fatigue after a long open highway ride.

Seating on the split front seats is fairly high, 13 inches, and made entry through wide doors a cinch. Front seats recline, a feature all sedans ought to copy. Front legroom is fair. A long-legged driver may find some knee interference with the wheel. Headroom is excellent and there is adequate hip- and kneeroom in the rear for three passengers. Anyone hauling youngsters (as we did) should consider the leatherette upholstery over the cloth. The gray cord seats in our test car picked up dirty footprints and would soon need an extensive cleaning job. Parents will appreciate the rear door safety lock which prevents the doors from opening from the inside.

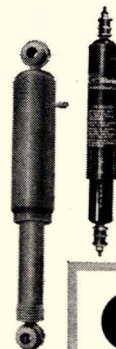
We found the interior to be generally well detailed. Floor mats, for example, are foam backed. The dash is thickly padded and there is a generous glove box plus map pockets in the front doors. Fresh-air fans should like the sliding steel sunroof (no extra cost). And in these days of warning lights it was refreshing to see a couple of almost extinct gauges — water temperature and amperes. The trunk is not huge but does have 20 cubic feet, is well upholstered, and has a spare that can be

continued on page 70

How to be a WRECK-LESS driver...by *Vip*

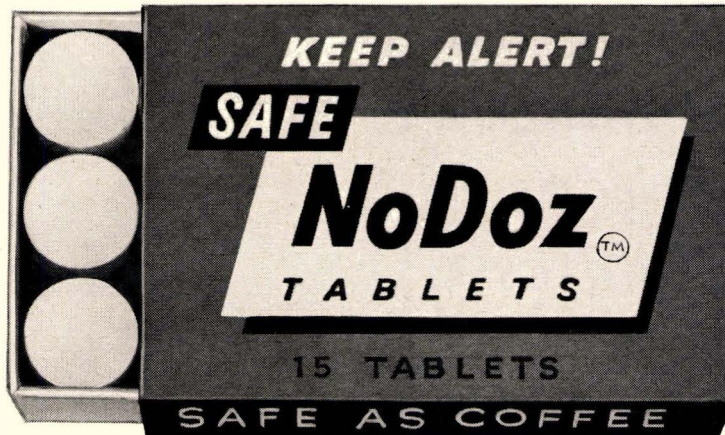


A more practical way to safeguard your life is with good shock absorbers. Wornout shocks cause dangerous swaying . . . loss of braking and control by allowing your tires to leave the road. Have your shocks checked regularly. For the safest, most comfortable ride of all . . . insist on Gabriel Shock Absorbers.



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**YOU'VE ASKED ABOUT THEM
AND HERE THEY ARE:**

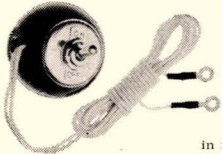
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Soft-Grip Steering Wheels as used in Petersen Publications 24-Hour Corvair Endurance Test.

Wheels feature non-fade soft plastic grip in choice of colors: White, Black, Red, Yellow, Blue, Green, Gold or Silver. Full installation equipment included in all kits. Corvair and Volkswagen\$28.95
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Throw a Faster Shift! The most convenient overdrive switch yet.

For all cars using Laycock de Normanville O.D. including Austin Healey (all models), TR-2-3-4, Sunbeam and Jaguar. Combination knob and switch only \$4.95!

Installed on gearshift lever in minutes with no special tools.



6000 lbs. Test! Competition approved seat belt and shoulder harness with metal-to-metal buckle, 3-inch Nylon webbing in black or red.

Belt alone: \$13.95
Harness: \$8.95
Both: only \$21.95

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Write to

MOTOR TREND MAGAZINE
5959 Hollywood Boulevard
Los Angeles 28, California

Peugeot 403-B *continued*

removed without first removing all the luggage.

Out on the highway, the 403 rolled along at 70-75 mph with very little wind or engine noise. It was not especially sensitive to cross-winds, and we felt it would be a perfectly good choice for a long trip. The only drawback, as with any low-powered car, is lack of mid- and upper-range acceleration, which one must always remember before starting to pass.

Economy is a considerable factor in Peugeot operation. We averaged a consistent 20 mpg during city driving, picking up about four mpg on the highway. Anyone really squeezing out mileage could do much better, probably close to the 30 mpg claimed by the factory.

Not that it has any direct bearing on today's 403, but Peugeot is the oldest firm in the automobile business. Armand Peugeot sold his first car in 1892 (when Henry Ford was still bicycling). Its owner is supposed to have said that "it is no faster than a bicycle, but more comfortable." And few people remember that Peugeot was an important name in racing (they still build high-quality racing bicycles), winning the Indy 500 outright in 1913, '16 and '19.

The 403 profits from this lengthy heritage. We found the car to be extremely well assembled, no doubt the result of the one man engaged in inspection or quality control for each 17 employees. In its price class and considering the number of legitimate extras included at no extra cost — sunroof, electric clock, reclining seats, heater, built-in roof rack mounts — the Peugeot deserves real consideration from the compact shopper. /MT



Trunk is large enough for several small suitcases with additional room available on the optional roof rack.

PEUGEOT 403-B

4-door, 5-passenger sedan

OPTIONS ON CAR TESTED: Radio
ODOMETER READING AT START OF TEST: 1743 miles
RECOMMENDED ENGINE RED LINE: 4750 rpm

PERFORMANCE

ACCELERATION (2 aboard)

0-30 mph 6.3 secs.
0-45 mph 12.8
0-60 mph 23.3

Standing start 1/4-mile 23.3 secs. and 60 mph

Speeds in gears @ 4750 rpm

1st 19 mph 3rd 49 mph
2nd 34 mph 4th 72 mph

Speedometer Error on Test Car

Car's speedometer reading 31 46 52 62 72 82
Weston electric speedometer ... 30 45 50 60 70 80

Observed miles per hour per 1000 rpm in top gear 15 mph
Stopping Distances — from 30 mph, 41 ft.; from 60 mph, 131 ft.

SPECIFICATIONS FROM MANUFACTURER

Engine

Ohv in-line 4
Bore: 3.15 ins.
Stroke: 2.87 ins.
Displacement: 89.6 cubic inches
Compression ratio: 7.5:1
Horsepower: 66 @ 4750 rpm
Horsepower per cubic inch: 0.736
Torque: 85.3 lbs.-ft. @ 3000 rpm
Ignition: 12-volt coil

springs, tubular shocks,
radius rods
Steering: Rack and pinion
3 3/4 turns lock-to-lock

Wheels and Tires

Steel disc — 3 lugs
6.50 x 15 Dunlop whitewalls
(Michelin-X optional)

Brakes

Hydraulic; 2 cylinders per front wheel, single cylinders rear; cast-iron drums
Front and rear: 10-in. dia.
Effective lining area: 126.7 sq. ins.

Body and Frame

Unitized, bolt-on fenders
Wheelbase 105 ins.
Track, front 52.75 ins., rear 52.0 ins.
Overall length 176 ins.
Dry weight 2262 lbs.

Gearbox

4-speed, all-synchro; column control

Driveshaft

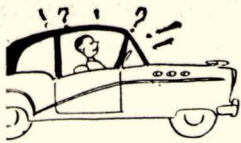
One piece — closed torque tube

Differential

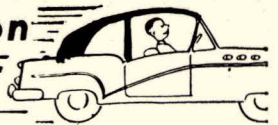
Worm and wheel, underslung
Standard ratio 4.2:1

Suspension

Front: Independent, upper A-arms/
lever shocks, lower trans-
verse leaf spring
Rear: Non-independent, coil



Convert Your Column Shift Transmission to this NEW Touch'n'Go Floor Shift for the FASTEST GETAWAY in the U.S.A.!



New TOUCH 'n GO

KAR-LIFE Straight-Line FLOOR SHIFT CONVERSION KIT

Loaded with Exclusive Top-Quality Features not found in any other kit... at ANY price!

Here's the floor shift transmission kit that has no equal in performance, appearance, or durability—regardless of price! Combines all the best features of kits costing up to \$70.00... PLUS exclusive features not found on any other kit! Easy-to-install TOUCH'n'GO is the fastest, shortest-stroke shift-stick kit on the market—only 5 inches between positions! (Other kits have 6½" to 7" strokes.) Imagine—at this low price you get the COMPLETE kit—even the ball, shaft, boot, and handsome chrome-plated floor plate are included! The built-in quality in this kit enables us to guarantee the entire kit for the life of your car, as long as you own it!

CUSTOM DESIGNED TO FIT AMERICAN CARS (INCLUDING 1962's) WITH STANDARD OR OVERDRIVE TRANSMISSION.

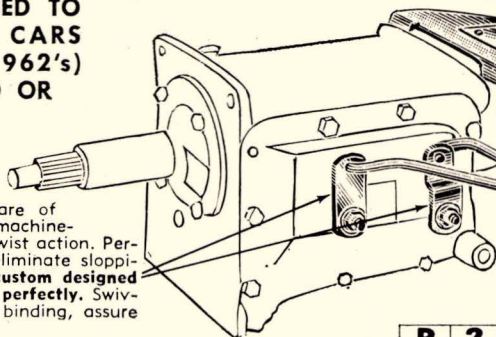
Hardened, Cadmium Plated Rods & Arms

Precision formed rods are of heavy 3/8" solid steel, machine-bent for non-flex, non-twist action. Perfect-fitting shift arms eliminate sloppiness and lost motion—custom designed to fit your transmission perfectly. Swivel-type joints eliminate binding, assure smooth movement.

Here's straight-line floor board shifting at its fastest. Heavy dual-H pattern springs assure you a lightning-fast smooth shift from 1st to 2nd without a pause, from 2nd to 3rd with a flick of the wrist. And you flick the ball only 5" between positions. There's no faster shift in the U.S.A. today, at any price!

UNCONDITIONALLY GUARANTEED AS LONG AS YOU OWN YOUR CAR!

The TOUCH'n'GO Kar-Life Floor Shift is unconditionally guaranteed to last for the life of your car, while you own and drive it. If any part wears out while you own the car in which it is installed, we will replace the part or the entire unit FREE (labor not included). Guarantee is only valid providing parts or unit have not been subjected to abuse or neglect.

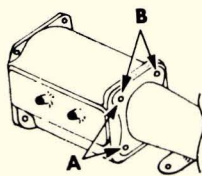
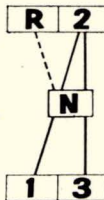


NEW ADVANCED STRAIGHT-LINE PATTERN:

LOW: Pull back as regular shift.

2ND: Straight forward.

HIGH: Straight back.



COMPLETE—READY TO INSTALL

FOR ONLY **\$29.95**

NOTHING ELSE TO BUY!

Plastic Ball and Adjustable Chrome Plated Shaft. Usually optional extras on most kits, but included in this TOUCH'n'GO kit. Solid steel shaft can be swiveled to most comfortable position for you. Positive lock nut locks shaft in preferred position.

Oval Pleated Rubber Boot Usually an optional extra, but included in this kit. Dresses up base, conceals positioning lock nut and hole in floor.

Chrome Plated Floor Plate Usually an optional extra, but included in this kit. Adds a touch of elegance. Plate also has shift pattern embossed on it.

Wear Compensation Adjustment A TOUCH'n'GO EXCLUSIVE! Simple nut adjustment permits firm or sloppy shift action—can be tightened to compensate for wear.

Shift Lever Position Adjustment Simple adjustment permits moving shift lever farther forward or backward, as preferred, for the most comfortable "reach". Easy to adjust at any time.

Heavy Dual-Pattern Shift Springs — Hardened Shift Pin. Kit includes heavy duty springs as used only in the finest kits. Shift pin is larger and stronger than those used in other kits for most wear-resistance.

Combines All the Best Features of Kits Costing up to \$70.00 and More... Plus Many Exclusive TOUCH'n'GO Features!

Cadmium-Plated Hardened Steel. All moving parts are made of rugged hardened steel to insure greater durability. All parts are cadmium plated to resist rust.

Custom Fit Bracket. A TOUCH'n'GO exclusive! Bracket is custom designed for your specific make, model and year of car. Not a universal bracket, but a bracket shaped and drilled to fit your transmission. No cutting, bending or welding necessary—a breeze to install!

Color-Coded Arms. You can't mix up the rods and arms. Arms are color coded so you can't make a mistake.

Swivel-Type Joints. Found only on the most expensive kits. Swivel-type joints eliminate binding, assure smooth movement with no loss or motion.

Shortest Shift - Stick Travel. Only 5 inches between gear positions... the shortest, fastest shift pattern on the market. Others are 6½" to 7".

Easiest Kit to Install. Complete illustrated, clear step-by-step instructions are included. Custom fit bracket and color-coded arms eliminate possibility of error. Installation can be made in 1 hour with ordinary tools.

CUSTOM ENGINEERED TO FIT THE FOLLOWING CARS WITH STANDARD TRANSMISSION WITH OR WITHOUT OVERDRIVE

Make Model Stk. No.
BUICK
 61-62 Special... 491
CADILLAC-LASALLE
 For use in 32-48
 Ford or Merc... 492
 For use in 49-50
 Olds... 493
CHEVROLET
 40-48 See Last Listing at right.
 49-54 Std. Trans. 495
 55-62w/orw/oOD. 496
Chrys.-DeSoto-Dodge
 57-60w/orw/oOD. 498
COMET
 60-62 Std. Trans. 499
DODGE
 57-60 exc. Dart—See Chrysler.
 60-61 Dart... 500
 61-62 exc. Dart 501
FALCON
 60-62 Std. Trans. 499
FORD
 32-48 Using 37-53 Cad.-LaSalle Trans. 492

Make Model Stk. No.
FORD—(Cont'd.)
 40-48 Std. Trans. 502
 49-62 Small Trans. "B" meas. 4½" 503
 57-62 Large Trans. "B" measures 6" 504
LINCOLN
 40-55w/orw/oOD. 506
MERCURY
 40-48 Std. Trans. 502
 49-62* exc. Inter. Trans.w/orw/oOD. 507
 56-62 Inter. Trans. w/or w/o OD. 508
 *E'51 has round holes in shift arms. L'51 has slotted holes in shift arms. Specify.
OLDSMOBILE
 49-50 Std. Trans. 493
 61-62F85... 491

Make Model Stk. No.
PACKARD
 38-54w/orw/oOD. 509
 Specify 4 or 5-bolt flange when ordering.
PLYMOUTH
 57-59 Small Trans. w/or w/o OD. "B" meas. 5¼" 510
 60-61 H.D. Trans. "A" meas. 5½" 511
 1961 Fury Std. Trans. "A" meas. 6" 512
 1962 Std. Trans. 513
PONTIAC
 58-60 exc. w/ Bucket Seats. Small Trans. (Non-Sel.) w/o OD. "A" meas. 3¾" 496
 w/OD. "B" meas. 5¼" 496
 H.D. Trans. "B" measures 6" 514

Make Model Stk. No.
PONTIAC—(Cont'd.)
 61-62 H.D. Trans. "B" measures 6" 515
 1962 Std. Trans. 516
RAMBLER
 50-62w/orw/oOD. "B" meas. 3¼" 517
STUDEBAKER
 49-60 Champ. w/or w/o OD. "B" meas. 4½" 518
 49-60 Comm. w/or w/o OD. "B" meas. 5¾" 521
 57-58 Scots. w/or w/o OD. "B" meas. 3¼" 524
 59-62 Lark. w/or w/o OD. "B" meas. 4½" 525
 1962w/orw/oOD. 527
 Each... \$29.95

CHEVROLET
 40-48 w/converted side cover... 528
 Each... \$42.50

When ordering, specify Make, Year, Model, With or Without Overdrive, Stk. No. Where measurements are required (check sketch above), please specify.

J. C. WHITNEY & CO.

1917 O-25C Archer Ave., Chicago 16, Illinois

J. C. WHITNEY & CO.

1917 (O-25C) Archer Ave., Chicago 16, Ill.

I enclose check or money order for \$29.95 (or \$7.50 if C.O.D.) plus \$1.00 postage, for complete TOUCH'n'GO Floor Shift Conversion Kit. My car is a:

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TYPE OF TRANS.		Standard <input type="checkbox"/> w/Overdrive <input type="checkbox"/>
		Heavy duty <input type="checkbox"/> w/oOverdrive <input type="checkbox"/>

Stk. No. _____ Measurements (where Necessary) _____

NAME _____

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CITY _____ ZONE _____ STATE _____

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| <input type="checkbox"/> Complete Tachometer & Sending Kit | \$12.95 | <input type="checkbox"/> Deluxe Illum. Chrome-Face Tach & Kit | \$16.95 |
| <input type="checkbox"/> Deluxe Illuminated Tach & Sending Kit | \$14.95 | <input type="checkbox"/> Steering Post Mounting Bracket | \$ 1.00 |
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Car, make, year, model

No. of Cyls. (6 or 8) Volt. (6 or 12)

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ENGINEERING DEPT. MTT-5
MILFORD, PA.

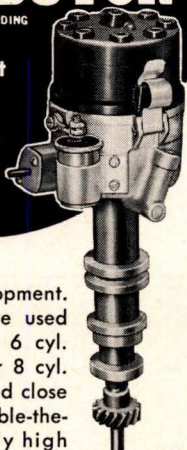
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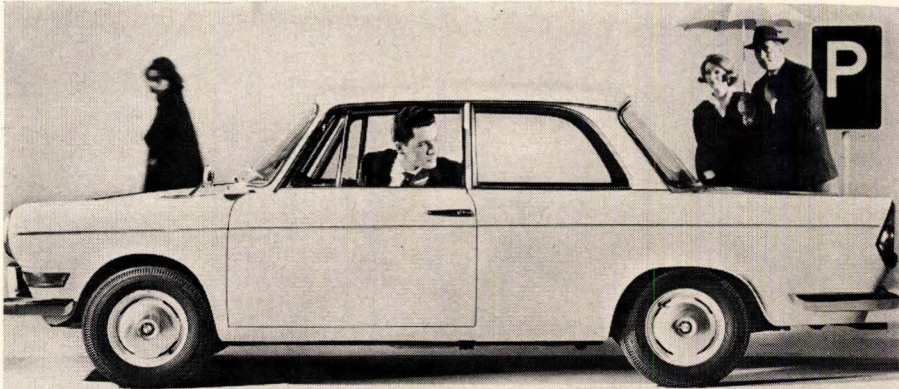
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EUROPEAN REPORT



FIRST LOOK AT SHELBY AC-COBRA SHOWS PROMISING APPETITE FOR CORVETTES

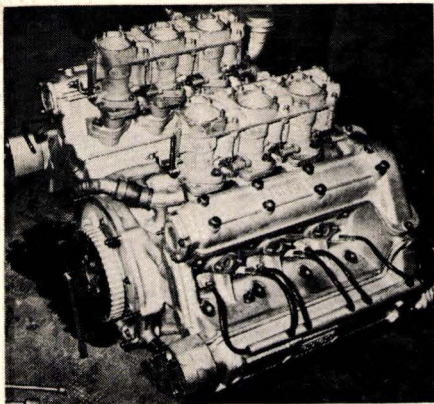
Soon to be marketed in this country by Carroll Shelby Enterprises, the car has a 260-cubic-inch Ford powerplant. For "B" production sports car races, the engine produces 260 hp with a four-barrel carburetor. For "A" production events, four dual-throat Webers and a Racer Brown roller cam bring the output up to a whopping 330 horses. Cobra features a stock Ford four-speed gearbox, independent suspension, Girling discs on all four wheels.



NEW BMW LUXAS IS AN IMPROVED VERSION OF THE SMALLER TWO-CYLINDER 700

A lengthening of the wheelbase and the overall dimensions has resulted in eliminating some of the boxiness that was evident in the older model 700. Same two-cylinder, air-cooled engine is used, but it produces slightly more horsepower. A form of auxiliary air springs is used on rear suspension.





FERRARI FORMULA 1 120-DEGREE V-6

The highly successful Dino 156 engine will be used again this season, but with a few improvements. The torque curve is said to be stronger over a wider range and the horsepower is a solid 190. Engine features six single-throat Webers and two spark plugs per cylinder.



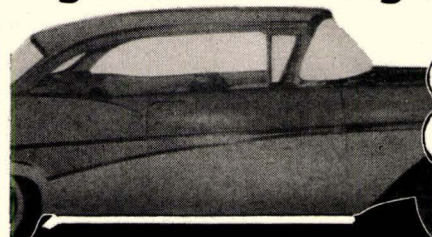
IMPROVED '62 BRM GRAND PRIX CAR

Chief development engineer, Tony Rudd and his test driver look over the new BRM GP car. Four-cam, V-8 engine features Lucas transistor ignition system and fuel injection.

A GT BODY FOR THE MINI MINOR
British coachbuilder David Ogle has come up with an interesting version of the MiniMinor (left). It uses the platform and mechanical parts of the series production saloon to mount the fiberglass two-seater body.

continued on page 76

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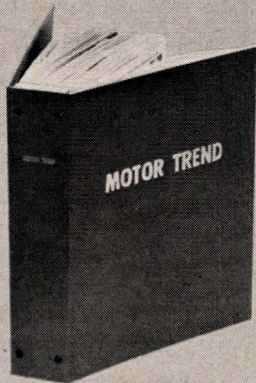


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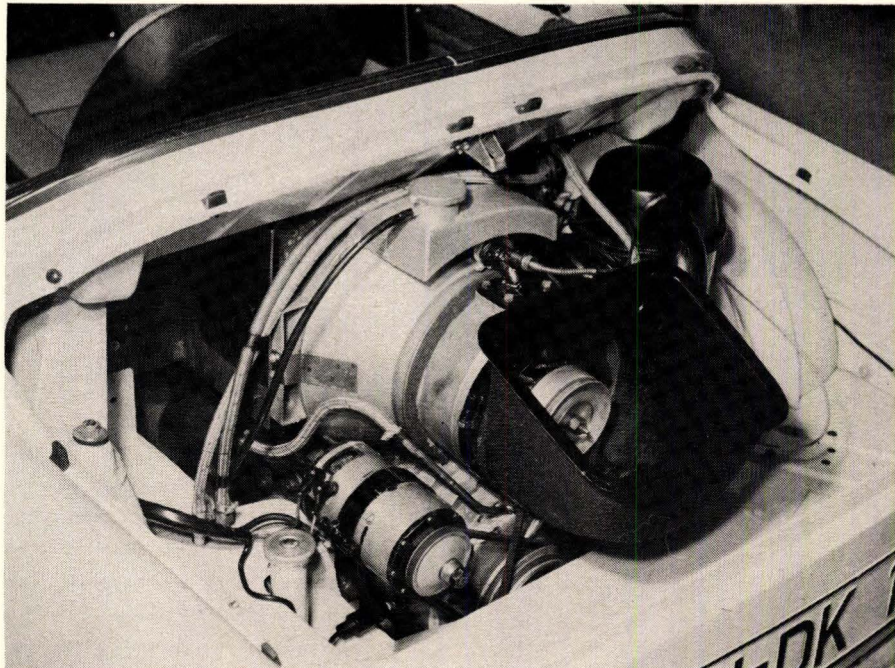
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European Report *continued*



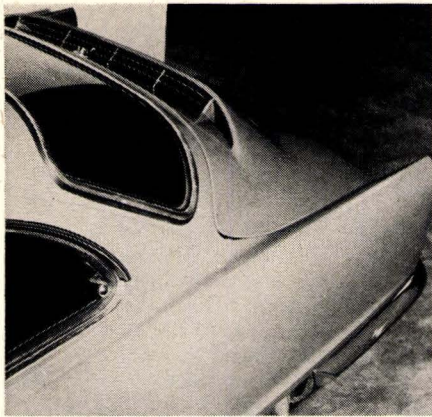
DEVELOPMENT CONTINUES ON NSU-WANKEL ROTARY PISTON ENGINE

The research department of NSU is still experimenting with the new engine in their Sport Prinz. The car is running under normal conditions on open roads, but the latest rumor is that it will still be some time before one ever reaches production. They are still having sealing problems with the engine, and it has been found that high-octane fuel must be used.



SAAB OFFERING IMPROVED SPORTS VERSION OF TWO-STROKE-ENGINE CAR

The SAAB 96 Sport features a bigger engine and a separate lubrication system. The engine now displaces 841cc. A three-liter tank supplies the oil that is now pump-fed to the four main bearings and connecting rod bearings and is sprayed on the cylinder walls. A spark plug, developed by Champion in cooperation with McCulloch for high-performance two-stroke engines, is used.



WANKEL-EQUIPPED NSU SPORT PRINZ
The only outward difference in the NSU Sport Prinz undergoing tests with the Wankel rotary piston engine installed is the extra-large air-scoop shown here. Horsepower rating on this 400cc engine is 40.



FOUR-SEATER FAMILY CAR FOR ISRAEL
Reliant Engineering has unveiled plans for the FW-3, which will be assembled in Haifa, using components made by Reliant in England. Power is supplied by a 997cc Anglia engine.

In response to the many inquiries from readers regarding "Cars in a Kit," March MOTOR TREND, here is a list of the manufacturers and their addresses:

KIT CARS

- Warwick — Bernard Rodger Development Ltd., Mill Lane, Slough, England.
- Lotus — Lotus Cars Ltd., Delamare Rd., Cheshunt, Herts, England.
- Rochdale — Rochdale Motor Panels, Littledale Mill, Littledale St., Rochdale, Lancs., England.
- Heron — Heron Plastics Ltd., 123 Calvert Rd., Greenwich, London S.E. 10, England.
- TVR — Layton Sports Cars Ltd., Hoo Hill Works, Bispham Rd., Layton, Blackpool, Lancs., England.
- Elva — Elva Cars Ltd., Sedlescombe Rd., North, Hastings, Sussex, England.
- Ashley — Ashley Laminates Ltd., Bush Fair, Harlow, Essex, England.
- Musketeer — Butterfield Engineering Co., Dovercroft Works, Paynes Lane, Nazeing, Essex, England.
- Turner — Turner Sports Cars Ltd., Pendeford Airport, Wolverhampton, Staffordshire, England.
- LMB — LMB Components Ltd., Weyford House, Woodridge Meadows, Guildford, Surrey, England.
- Tornado — Tornado Cars Ltd., 90 Uxbridge Rd., Rickmansworth, Herts, England.
- Marcos — Speedex Castings & Accessories Ltd., 17-A Windsor St., Luton, Beds., England.
- Century chassis — C.R.S. Auto Engineers Ltd., High St., Footscray, Kent, England.
- Falcon — Falcon Shells Ltd., 23 Highbridge St., Waltham Abbey, Essex, England.

CONVERSION KITS

- Paddy Gaston Ltd., Albany Park Service Station Ltd., 215 Richmond Rd., Kingston, Surrey, England.
- Speedwell Performance Conversions Ltd., 76 Finchley Rd., London N.W. 11, England.
- Jack Brabham (Motors) Ltd., 248 Hook Rd., Chessington, Surrey, England.
- Alexander Engineering Co. Ltd., Thame Rd., Haddenham, Bucks., England.
- G.M. Carburetor Co. Ltd., 3 Church Hill, Knutsford, Cheshire, England.
- Downton Engineering Works Ltd., Downton, Nr. Salisbury, England.

STRAIGHT LINE LIGHTNING-FAST Floor Shift CONVERSION KITS

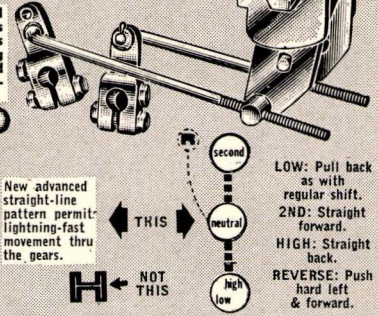
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Specify car, year, model, type of transmission and stock number when ordering.
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CHEV. 1/4-T. P'up Trk. 49-54 Std. Tr.	598 178		w/OD	617 190	
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w/OD	603 182		w/OD	609 189	
FALCON 60-62 Std. Tr.	605 185		51-61 Std. Tr. w/Lge. Circ. Bell Hsg. exc. '51 w/OD	607 187	
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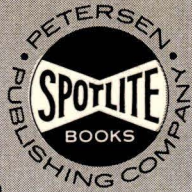
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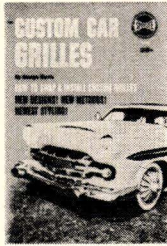
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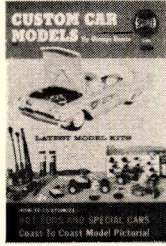
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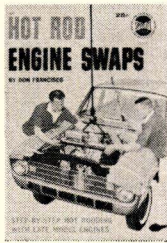
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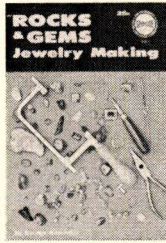
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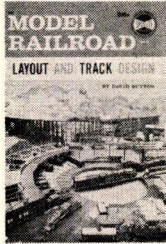
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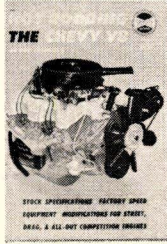
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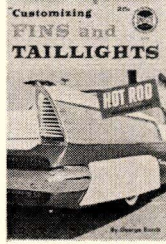
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CAR CLINIC

by Doane Spencer

Doane Spencer, well-known auto expert, will answer readers' technical questions each month. Your letters are invited.

LIFTERS

While reading the coverage of the National Drags, I saw an interesting article — but it beats me. It states that Chevy and Pontiac owners could adjust their hydraulic lifters "out to the end of their travel, therefore becoming almost 'solid'."

How is this done? I've asked around, and nobody has done it around here. Most say if you get them too loose (as the article seems to suggest), it will wipe the cam "clean as a hound's tooth."

I have a '57 Chevy 220, with stick and overdrive and 4.11 gears. It goes good to 40 mph, and then someone turns on the popcorn popper. If I could fix the problem I could really go, so please explain clearly how this is done.

W. L. Walls

Columbus, Ohio

In the top end of the Chevy and Pontiac lifter is a wire clip. This clip is referred to as a push-rod seat retainer. When the lifter in a stock car is operating correctly, it is somewhere near the middle of the limits or three-fourths of a turn from the top limit, which is governed by the push-rod seat retainer.

To create this "solid" hydraulic lifter condition, all one must do is loosen the rocker to the point where the push-rod seat is against the snap ring, therefore limiting any more expansion of the lifter. This can best be done with the engine running, with both the water and oil temperature at normal. Back off each rocker adjustment slowly, allowing the lifter to pump up, until such time that you have about a .001 clearance.

SHIFTLESS SPRITE

I own a '60 Austin-Healey Sprite. I am having trouble shifting into first and second from a dead stop — the gears clash. Even after I do get the car in gear and moving, it is hard getting into second. I have no trouble getting into third or fourth, even after the car is stopped — but not first or second, or even reverse.

The gearbox is synchromeshed in second, third and fourth gears only. The car is never abused in any way, and I have no trouble shifting when it is cold. It has a hydraulic-operated clutch.

My other problem deals with overheating in traffic. My cooling system is in good condition, but in traffic it heats very easily; once moving, however, it cools off. In the winter my engine will not run over 140°. I have tried several thermostats, but nothing has helped. Could you give me any tips?

Gerald Greb

Your shifting problems probably stem from a worn clutch release bearing or a cuffed pilot bushing in the crankshaft. The former is probably the more likely.

Cars in the B.M.C. line come equipped with a carbon throw-out bearing. For a person who is not familiar with this mechanical faux pas, there are a few rules that must be followed: avoid any unnecessary use of the clutch, such as sitting at signals with

the clutch depressed, riding the clutch, etc.

The carbon in the throw-out wears, which, in turn, requires the piston in the slave cylinder to move further in the cylinder to engage the bearing. The slave cylinder has a snap ring in the end of the bore, so that when the bearing is sufficiently worn, the piston hits this snap ring. This limits the travel of the pedal and consequently, the gears clash.

As for the heating in traffic, if you look carefully, you will see that your two-bladed fan is in reality a four-bladed fan, but the blades are stacked together. Disassemble and refit in the four-bladed configuration.

On Sprites being raced, it is an old trick to reverse the contour of the grille from convex to concave. This usually makes a difference of 10° to 15°.

Thermostats come in various ranges, such as 140°, 160° and 180°. Check and make sure that you are installing the desired range. If sufficient heat still cannot be obtained, remove the small by-pass hose and fitting at the front of the head and replace with two 1/4 pipe plugs.

REVERSED?

On page 80 of the February '62 issue, you state (in connection with the '62 Corvair), "Another trick that adds up to a better-handling Corvair is reversing the rear wheel rims." On page 76 of the same issue, under the picture of the '61 Thunderbird, it is stated, "Wheels have been reversed," and on page 74 of the January MOTOR TREND, under the picture of the '61 Corvair Monza, reference is made to "reversed wheels" and they are pictured.

One question — are all these statements referring to the same physical act? Is reversing wheel rims and reversing wheels the same thing? If so, did the '61 Corvair in the January issue also have a portion of the front spring clipped to make the car level?

"The wheels may be purchased from your dealer." Are you referring to regular replacement wheels or reversed wheels? How about the effect on steering geometry if done in front?

Russell M. Lyman Washington, Del.

"Reversed wheels" is actually a misnomer, for in reality just the rims are reversed. On all modern American cars the wheel is attached to the rim, not at the mid-point, but at a point that allows the greater portion of the tire to be inside.

Here in California, most chrome shops and wheel repair stations do this simple task. Most Ford and Chevrolet agencies sell them over the parts counter.

As for these wheels having an adverse effect on steering — that is true, and for that reason I never recommend their use on the front of the car. There is another reason for my saying this — the loads are also reversed on the front wheel bearing. The little bearing is then doing the job intended for the larger bearing, and vice versa.

The Corvair to which you refer appears to have a full turn cut from the front spring.

DRIVING FUN

I received the February '62 issue of MOTOR TREND and my '62 Monza Coupe the same day. I noticed a couple of items in "Car Clinic" concerning Monzas and would like to ask a couple of questions.

Regarding the "No-Sway Monza" item — what is an anti-sway bar and another item mentioned, a camber compensation bar?

When I ordered this machine, for economy purposes I got the small engine with a four-speed transmission. After 500 miles in it, economy is becoming secondary. I'm rapidly re-learning that driving can be fun. Even worse, so is my wife!

I'm considering a Judson blower and either or both of the above-mentioned items, and anything else that you would care to suggest as essential to performance and safety.

Keep in mind that this is practically a do-it-yourself project (except for the blower) for a couple of novices. Offer your suggestions and tell me where to order the parts.

Bruce Meighen Speedway, Ind.

I have a 1961 Corvair which has a stock 80-hp engine. I intend having it souped up to 98 hp. My dealer says they can do this for about \$30.

Can I put two two-barrel carburetors in place of my stock two one-barrel? Will this help my performance and, if so, what carburetors should I use?

Robin Beaird Kansas City, Mo.

The speed and power equipment for Corvairs is almost as plentiful as it used to be for the old flathead Ford.

To my knowledge, there is no kit or adapter available to install two two-throat carburetors on the existing head, though it could easily be done with a little cutting and welding.

There is one kit put out by Induction Engineering Co., 8135 Willow Glen Road, Hollywood, California. It is referred to as their Ram manifold, which is using a 265- or 283-cubic-inch Carter four-barrel, centrally located. It has all the advantages of the multiple-carburetion setup and none of the disadvantages, such as linkage problems, hard starting, gas boiling and percolating, etc. An honest 25 hp can be gained, at the rear wheels, and it can be installed by a novice in half an hour.

As for the sway bar and camber compensator — the sway bar is no more than a torsion bar connected to each of the front A-arms. This reduces the body sway or lean. The EMPI Camber Compensator is a similar device, but is made like a transverse leaf spring and is used on the rear with exceptionally good results.

Another suggestion for the handling department is the new magnesium wheels. They are real beauties.

'32 B TRUCK

We have a '51 Chrysler and a '36 LaSalle transmission that we would like to hook up and drop in a '32 B pickup truck. The Chrysler flywheel is 14 1/4 inches, and the LaSalle's is 14 3/4 inches.

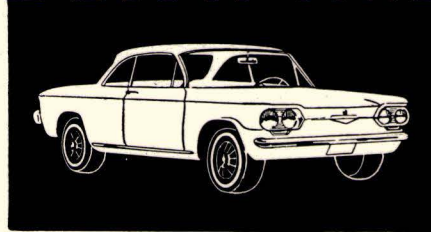
I have been told we would have to exchange flywheels in order to hook up the LaSalle transmission. The engine was hooked up to a fluid drive.

I would like to find out what has to be done, and whether or not it would work. Could you suggest a front end and a rear end — also an adapter of some kind?

Jack R. David Jr.

A bell-housing adapter to connect the LaSalle transmission to your '51 Chrysler
continued on page 80

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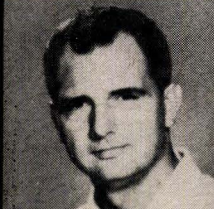
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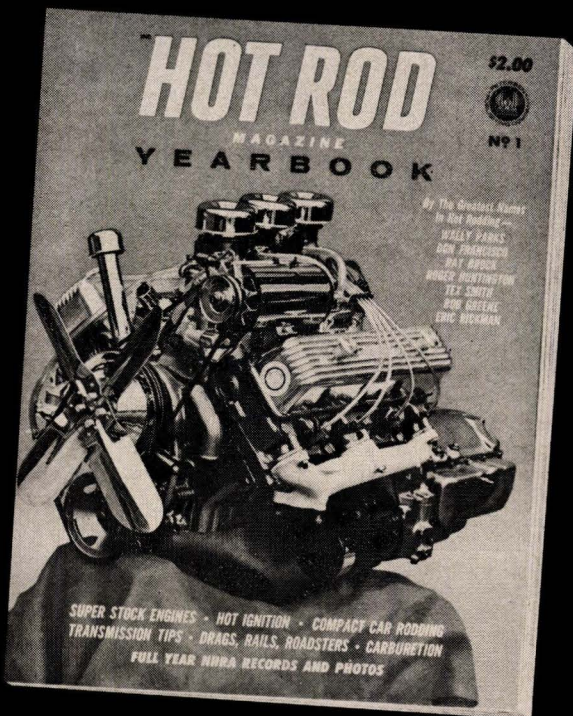
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CAR CLINIC *continued*

may be purchased from your local speed shop or through Honest Charley, part #SG 78. This will enable you to use the Chrysler flywheel.

The easiest rear end arrangement for this particular setup would be the rear end center section from a '42-'48 Ford pickup. This will enable you to use early Ford housings ('34-'41) with a '46 Hotchkiss-type center section.

The only fabrication necessary will be in making radius rods to position and support the rear end in the chassis. The stock rear spring may be retained. The driveshaft from the pickup may be used, but shortened. Use a General Motors or the LaSalle U-joint in front and retain the '46 Ford U-joint in the rear.

FOUR-SPEED

Could you give me the name of a manufacturer who would be able to supply me with an adapter to join a '57 Thunderbird engine to the new four-speed manual transmission offered by Ford this year?

ROY A. GUTTERSON Loring AFB, Me.

I own a 1954 Mercury Sun Valley, and it just doesn't have any go power whatsoever. During this past year the engine has been completely overhauled; new fuel pump, distributor, vacuum advance, two new sets of heavy-duty points and a new coil installed; and the carburetor has been rebuilt. So, you see, I have done just about everything to provide fire power and good gas to the cylinders.

I was wondering if a four-speed transmission, if it can be had, would help. My car has the standard Mercomatic. Is it possible to have one installed? What will I have to do to convert it, and so on?

TOM WILBURN Muncie, Ind.

Ford Motor Company can supply the adapter referred to in the first letter. The stock '57 standard transmission bell-housing will accept the new four-speed gearbox with no alterations whatsoever.

When ordering the gearbox, be sure to order the kit form of the shift mechanism. It consists of all the linkage, clevis, floorboard piece, boot and shift lever and template for installation.

When installing, the shift lever must be altered to fit into the T-Bird, as the shift lever is too long in its stock form. This may be done quite easily by cutting the existing shift lever tube and cable from the ball socket and replacing with a straight tube to the required or desired length. The cable will have to be shortened to hook up the lockout device for the reverse gear.

In the case of the Mercury, the same bell-housing ('54-'62) will fit, also accommodating the four-speed gearbox. The necessary pedals to operate the clutch and bell crank and fulcrum may be purchased from your dealer, but I imagine you will have better luck searching your local junk yards.

The manual transmission, while being a definite improvement over the automatic, is really going to do nothing to increase the horsepower of the engine.

I would suggest that you exchange the 3.31-to-1 rear axle gears for lower gears, preferably 3.92's, to more nearly utilize all the horsepower that you already have. /MT

SELL 'N' SWAP

SELL

'41 PACKARD 180 formal town sed. Exc. cond.; 64,000 orig. mi. Electric controls; 6 General 6-ply tires. \$1200 firm. T. E. Jones, 2608 Lakeview, Chicago 14, Ill. Phone LA 8-2251.
'33 HUPMOBILE 2-dr. cpe., with rumbleseat, wood spoke wheels. Partly dismantled; 100% restorable (have all parts). Moving; have no room for car. Will finance. Randall L. Huffman, Minier, Ill. Phone MInier 392-3685.
'56 PACKARD Caribbean hdtpr. Full power, air cond., reversible uph., new Firestone tires, incl. snow tires. Low mileage; maintained by Packard dealer since new. George A. Hahn, 639 Iron St., Lehigh, Pa.
'58 KARMANN-GHIA, with custom Alfa Romeo-type grille from Portugal. Colorado Red; black nylon conv. top. 1 owner; 16,000 mi.



Cream puff; returning overseas. \$1480. Maj. L. E. Gamble, 1616 Pearl Ave., Albany, Ga. Phone HE 6-5875.

SPECIAL NOTICE

Effective with the July issue of MOTOR TREND, new rates and requirements will apply to the "Sell 'n' Swap" department. A great many commercial advertisers have requested that this section be opened for their use. To make this possible, a new schedule of charges must be put into effect. For all insertions the rate is 90c per word (minimum 10 words; no maximum). If a photo is to be run with the ad, the additional fee is \$25. No ads will be accepted if payment is not made in advance.

The number of ads to appear each month will depend on space limitations and ads will be inserted on a first come, first served basis. The editors reserve the right to refuse acceptance and to edit where necessary. All ads accepted by April 30, 1962 will be honored under the old rate schedule. All contracts now in effect will be honored until expiration.

'52 AUSTIN A-40 Sports 4-pass. conv. Rare, alum. body; leather over foam rubber seats.



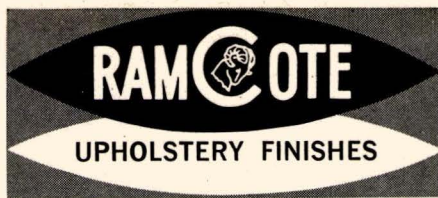
Two carburetors; uses standard Austin parts. Good cond. \$275. R. N. Brigham, Sherman Circle, Monroe, Conn.

'56 PACKARD Patrician. All power, factory air, Mallory system, new tires. Car like new; engine, engine access, & trans. completely major 2000 mi. ago. \$1395. B. J. Veltri, 680-A Infantry Post, Ft. Sam Houston, Tex.

'24 DODGE bus. cpe. Interior & leather perf.; needs paint to be mint. Orig., to service manual & tools. Drive away for \$1100 or reasonable offer. H. H. Hammer, Jr., P.O. Box 1083, Joliet, Ill.

'55 PACKARD Caribbean conv. Full power, r & h, ww's. Engine & trans. completely rebuilt. Beautiful interior; needs body work. Well worth \$800—what am I offered? Larry D. Merwin, 11052 S. Longwood, Chicago 43, Ill.

continued on page 82



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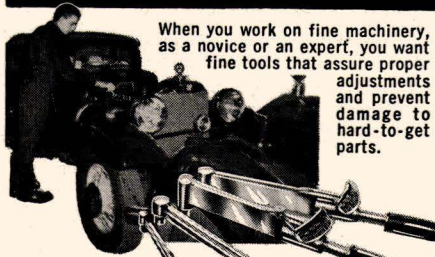


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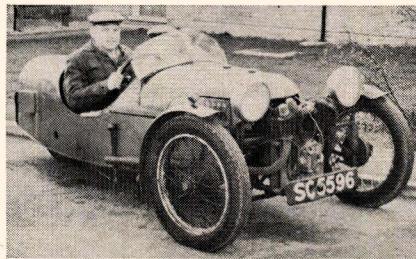
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different — \$600 f.o.b. your nearest port. M/Sgt. Lemuel V. Bates, Box 1399, APO 129, New York, N.Y.

'54 KAISER-DARRIN. Cream, with red leather & satin top. A collector's item in orig. cond.; only 17,000 mi. Best offer over \$2500. Clark W. Smith, Rt. #4, Orchard Farms, Decatur, Ind. 200-MPH '07 Steam Car at Daytona. Details Stanley record-breaker. Magazine & leaflets, \$1. Engine plans, \$1. Dollar bills, money orders accepted — no coins. *Light Steam Power*, Kirk Michael, Isle of Man, U.K.

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'36 MERCEDES-BENZ 2-dr., 5-pass. conv. sed. 500-K, with 540-K engine. Exc. cond. \$2750.



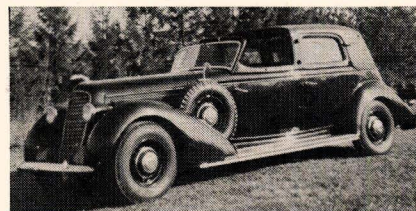
Harold Blackburn, 1215 W. Walnut St., Springfield 3, Mo.

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OFFICIAL SHOP MANUALS — every British & European car — largest stock in U.K. Air-mail details of your car for descriptive quotation by return mail. Marken Ltd., Islingwood Rd., Brighton, Sussex, England.

'36 LINCOLN town car by Judkins. Exc. orig. cond., with exception of new chrome, tires,



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AUTOMOBILE LITERATURE — Sales catalogs, instruction books, many makes '37 thru '60

Also postwar foreign car sales brochures, MoToR magazines, '32 thru '45. Send 10c for list. Morton Weisbord, 10151 Babbitt Ave., Northridge, Calif.

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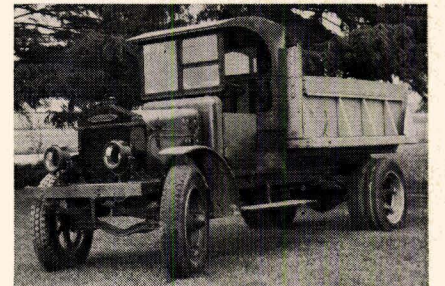
SELL OR SWAP

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'26 PIERCE-ARROW 4-cyl., twin-ignition dump truck. Perf. cond. \$1485 cash. Prefer trade for



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COMPLETE SOFT TOP for '57 T-Bird. Also complete gearbox, clutch & clutch pedal assembly. Will trade complete newly rebuilt Fordomatic. Tad Lonergan, 2125 Bay, Saginaw, Mich. DUESENBERG, Hispano-Suiza, Pierce-Arrow, 16-cyl. Cadillac, open Rolls, or open, supercharged Cord. Send pictures, details 1st letter. E. Fötter, 8811 102nd St., Palos Hills, Ill.

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