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MOTOR TREND
MARCH 1961 35¢
SPECIAL Award Issue
1961
CAR OF THE YEAR
PONTIAC TEMPEST
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MOTOR TREND

1961

BY DON WERNER *The Editor of MOTOR TREND*

CAR OF THE YEAR

The Pontiac Tempest is the MOTOR TREND Car Of The Year for 1961 and as such has been granted the annual MOTOR TREND Award.

The decision was reached by the editors of MOTOR TREND after long and careful study of the entire field of American motor cars. In a year of outstanding cars, it is clear that the Tempest is the car most outstanding for progress in design.

The basic premise of the MOTOR TREND Award is that the progress in

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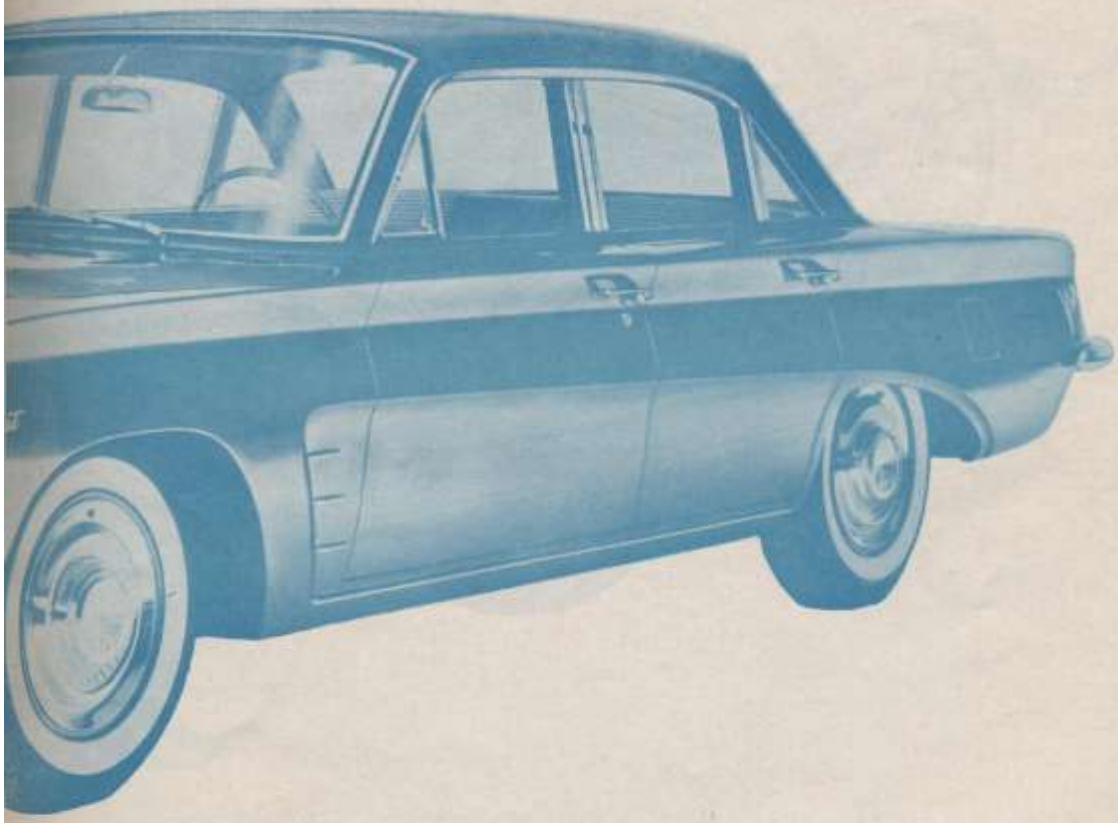
Motor Trend Award



PONTIAC TEMPEST

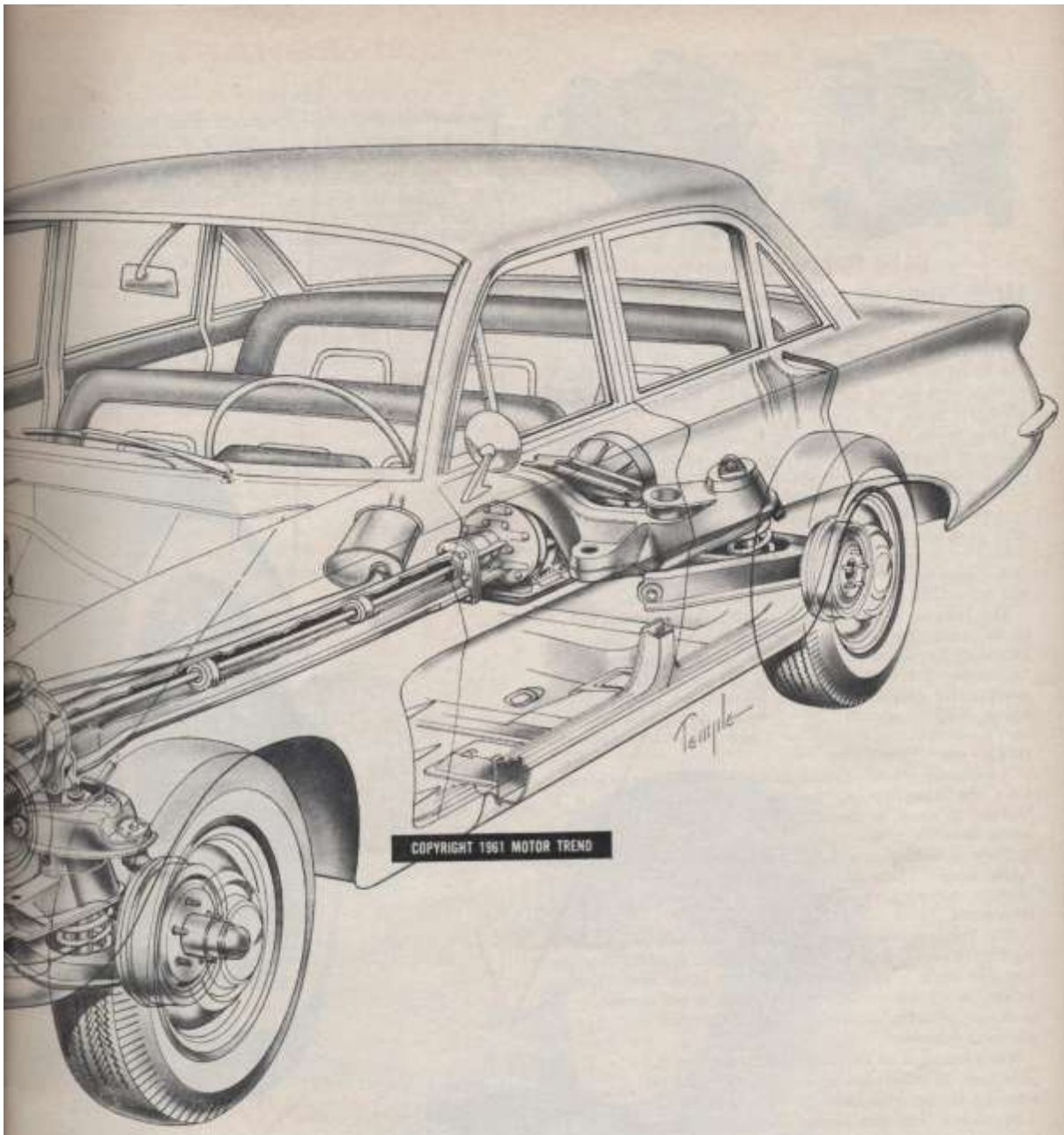
CAR OF THE YEAR

design recognized must be a distinct advance toward a better car. The Tempest fills this requirement fully.

Only once each year is one car selected for such special merit by MOTOR TREND. In 1961 there are many cars, many of them all-new, that represent worthwhile and welcome progress in design.

Yet the Tempest surpasses them all – not only by the total number of its design achievements, but also for what they are.

There are three major areas of design progress in the 1961 Tempest that make it one of the most advanced cars to be developed in America in more than two decades.



One of these is the transfer of the transmission to the rear axle, an improvement long predicted and hoped for in domestic front-engined cars.

Another is the introduction of the flexible driveshaft—an amazing example of practical engineering and completely without precedent.

And then there is engine power in a new form, again long awaited and long predicted, that will yield many practical benefits to the car buyer.

All of the foregoing design progress is in a car of functional size and adequate passenger capacity.

The new Pontiac Tempest sets many new trends and unquestionably is a prototype of the American car for the Sixties.

ENGINES

WHEN TOTALLY NEW CARS appear, they will have as part of their design an all-new engine. The Pontiac Tempest is the very rare new car that offers not one new engine — but two!

The two engines are distinctly different and definitely are not, as often is the case, variations of a single theme. This is obvious since one of the engines is a big four-cylinder and the other is a small V-8.

From the viewpoint of progress in design, the more significant engine of the two is the small V-8. It is not an exclusive with the Tempest, since it is shared with two other GM cars.

The outstanding feature of the V-8 itself is that it is aluminum — another realization of an engineering dream. In its present form it displaces 215 cubic inches and is rated at 155 hp, although it is capable of turning out at least 100 more hp than that. This engine is the first of a new breed that eventually will replace the conventional cast-iron heavyweights.

The Tempest V-8 weighs about 330 lbs, approximately half of the largest cast-iron engine of the same layout. This is an immediate benefit in the Tempest. Along with the transfer of the transmission to the rear axle, it sets up the Tempest with nearly equal weight distribution between the front and rear wheels. And the so-called 50-50 weight distribution has long been an ideal in car design since it bears importantly upon the vehicle's overall roadability.

A secondary benefit of an aluminum engine is that ultimately, when the manufacturing process has been perfected, it is expected to result in cheaper cost. And this undoubtedly is a highly desirable prospect.

There is nothing of a radical nature about the layout of the engine design. There are a number of detail refinements that improve operating characteristics. But they are just that — refinements.

The Tempest four-cylinder engine is essentially one bank of the big 389-cubic-inch V-8 that powers the standard Pontiacs. The split results in an engine of 195 cubic inches with cylinders inclined at 45 degrees. While this engine is not notable as design progress, it nonetheless is exceptional engineering ingenuity.

The advantages of the four-cylinder are very tangible ones. In mild form it is capable of good fuel economy. On the other hand, the fact that it has more cubic inches and can breathe deeply through large valves and ports, plus the high rpm potential, promises great performance when set up for it. The four having been derived from the veteran V-8 has, in that sense, been long in production and now is thoroughly dependable with abundant experienced service. Pontiac has set an interesting and valuable precedent with the four-cylinder.

DRIVESHAFT

THE MOST AMAZING single component in the engineering of the Tempest design is the driveshaft. It is radical and revolutionary and completely without precedent in automotive design.

Yet this new driveshaft is not a mere novelty or a trick — it is practical and functional and likely to be widely copied by other makes of cars.

There are several benefits of the Tempest driveshaft design. Most often mentioned is the fact that it permits a reduction in the height of the long tunnel that generally intrudes into the floor of the passenger compartment in nearly all other front-engined rear-drive cars. It also, however, eliminates completely the need for universal joints, and gone with them is the cost and bother of their lubrication and repair and the noise and vibration they created. The third important benefit is indirect: the new driveshaft enables softer mounting of the

engine, and in effect, further isolates its vibration from the rest of the car.

All this is accomplished in a relatively simple way, with the apparent simplicity that so frequently is characteristic of new and successful inventions.

The Tempest driveshaft is often described as flexible and compared to a speedometer cable, which transmits rotary action around bends, for the purpose of easy explanation. The similarity, however, is rather remote. Actually, the shaft is a long torsion bar that can be slightly bent or bowed into an arc as it extends from the front engine to the rear transmission.

In the case of the Tempest application of the principle, the shaft is bent or bowed about two inches along its entire length —which is 87 inches with an automatic transmission and 82 inches with a manual transmission. If this shaft in its arc were lengthened until it formed a complete circle, the diameter of the resulting circle would be 73 feet.

Considering the force necessary to propel a car the size of the Tempest, the driveshaft seems at a glance to be rather slender. A cross-section of it is only five-eighths of an inch. The stress on it is relatively light, however, since the shaft is between the engine and transmission and transmits only engine power and not the multiplication of it as does a conventional driveshaft behind a transmission.

The final achievement of the bar-shaft drive is that it is mounted on bearings and lubricated inside a sealed case or tube that should require no attention for the life of the car.

TRANSAXLE

FEW ADVANCES IN car design have been so long predicted or so widely discussed as the development of a front-engined American car with a transaxle. Now the Pontiac Tempest has made the breakthrough — and others will follow if and when they can.

The demand or desire for the transaxle arrangement (that is the uncoupling of the transmission from its direct attachment to the engine and shifting its location to the rear where it is in combination with the differential) has been stimulated for two reasons:

First, on American cars in particular, the interior passenger space, especially in the front seat area, has been severely restricted by the big bulge through the firewall and the floor. It has, in effect, made the front seat comfortable for no more than two adults in virtually all cars.

Second, American cars have the larger percentage, usually about 55 per cent, of their total weight on the front wheels. Consequently, they have been heavy steerers and with road-ability characteristics not as good as they could have been with better weight balance. In other words, more of the total weight should rest on the rear wheels.

Now, after years of speculation and rumors that usually associated the first transaxle with cars in the very highest price classes, it finally has emerged on the Tempest.

Transaxles, of course, are not uncommon — they are perfectly ordinary in front-drive front-engined cars and rear-engined cars. In the case of front-engined cars driving the rear wheels, however, they are rare, even in Europe and Asia where virtually every possible combination of power train components is employed in one make of car or another.

So the Tempest transaxle ranks as a major achievement in the progress of design. In addition to further resolving the space problem in the passenger compartment and balancing the car better, it smooths out the ride, particularly over rough surfaces, and neutralizes the steering characteristics.

THE TEMPEST'S 3 DESIGN ADVANCES

Tempest puts safety-minded performance in a gas-saving 4!

(Range of horsepower choices from 110 to 155)

Take a Tempest out on the highway and put it through its paces. This car is a whiz at moving into fast-stepping company on an expressway. Takes you from a standing start to a safe operating speed in seconds . . . gets you up a steep hill in high gear.

Run the Tempest over the roughest road you can find. It rides like the big ones because it's balanced! The engine's up front —the transmission's in the rear. And it's got independent suspension at all four wheels. Full 15-inch wheels make car look big. Tires last. Brakes run cooler.

Before it hit the market, Tempest had 3,000,000 miles of testing by engineers, pro drivers and a team of teenagers. Its reliability checked out 100%. Owners have rolled up millions more. The only kick is the one it puts back in driving. Try it!

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