



OPEL KADETT

New invention: funny little foreign sedan with front engine, rear drive, and four tiny cylinders—and it still makes a good car!



PHOTOGRAPHY: CHARLIE BROWN

So many small cars have been produced in recent years with rear-mounted engines that one might be tempted to conclude that no other configuration has any merit. That conclusion would be wrong. For all their popularity, rear-engined automobiles are still afflicted with oversteer, and they seldom offer more than bare-minimum luggage space. In some sports cars, the former problem has been successfully resolved; but in family-type sedans there's a good argument that the front-mounted engine provides the most efficient utilization of space, and the best stability in handling.

Opel engineers must have had all this firmly in mind when they laid down the basic design for that company's new economy sedan. The Kadett, Opel's new sub-compact follows the time-honored big-car layout of front engine/rear drive, and it is in almost every other particular the soul of orthodoxy. Yet, within a shorter wheelbase and smaller overall dimensions than, for instance, the Volkswagen, the Kadett offers more room for both passengers and luggage (especially the latter) and substantially better handling. In

every important respect, the Kadett is an altogether satisfactory automobile.

Opel's Kadett is available in 3 versions: sedan; station wagon; and what Opel is pleased to call a "sports coupe" (in reality the sedan with a zingy interior and hotted-up—54 bhp—engine). All models have two-doors; all have nearly identical overall measurements, and identical chassis.

Besides being pleasantly free of road-rumble (through internal stiffening ribs), the Kadett's body/frame scores well in terms of lightness. No light alloys are used in any of the car's major components, but the heaviest model in the Kadett series (the station wagon we were given for testing) weighs only 1580 lb. That was at the curb, ready to run, with 4 gallons of gasoline and a full ashtray. This is a smidgin lighter than the manufacturer's advertised curb weight (a reversal of the usual order), so we may assume that their stated curb weight of 1477 lb for the sedan is correct.

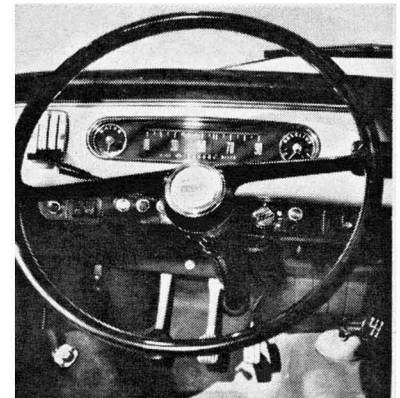
In point of fact, the Kadett is fortunate indeed to be so light, for the engine is just a mite puny. It is a water-cooled, one-liter "four," featuring things of such overwhelming technical interest as pushrod-operated overhead valves and a 3-main-bearing crankshaft. Siamesed intake ports and a common exhaust port for the two middle cylinders promise to thwart any attempt to wring appreciably more power from the engine. On the other hand, it gives every impression of being a sturdy little unit, developing its power at a relatively low crank speed and having a very short stroke.

For the power-mad, the 54 bhp (at 5500 rpm) engine from the sports coupe is available in all models. Eight more horsepower, and an extra dab of torque, should make the Kadett march along somewhat more smartly; albeit not smartly enough to excite anyone greatly. The inescapable truth is that any domestic car, and many of the imports, can kick sand in the Kadett's headlights anytime, and while the resulting Dynamic Tension may improve the driver's physique, the car will never have the muscle to do much about it.

Despite its rather limited horsepower and a long (3.89:1) axle ratio, it is not absolutely necessary to paddle the car along with the gear lever. The engine holds a fairly steady 54 lb-ft of torque from 2600 to 3600 rpm, without dropping off much above or below that, and the car can keep the pace of moderate traffic even if the driver never abandons top gear. For those drivers who do not mind driving, the Kadett's transmission invites frequent and spirited stirring. Its four ratios are well staged, and there is a marvelously effective synchromesh on all of them.

No upper limit is given for top gear, but if those for the other speeds may be used as a guide, the end of the tether is reached at about 80 mph. Our station wagon would only reach 72 mph (Opel claims a top of 74.6 mph) and since at that speed the engine was only cranking off 4400 rpm, there is every reason to expect that the Kadett could be run flat-out for long distances without shattering something—an asset for any small car in these United States.

Road behavior was, in the main, beyond reproach.



Buffeting from strong, gusty side winds at 60-70 mph had about the effect one would expect in a light and rather slab-sided station wagon, i.e., it was jostled about. It goes without saying that the Kadett's rear-engined contemporaries fare even worse under the same conditions. The Kadett gets a very good grip on the road—the suspension contributes to this, but a more direct cause is the car's 6.00-section tires and wide-rim wheels.

The steering was almost very good. "Almost" because the rack-and-pinion steering gear would feed back any and all road shocks, virtually undiminished—just like the old MG-TD. To the Opel's credit, the steering is quick and dead-accurate—also just like that of the venerable TD. To aggravate things, the front wheels on our test car were badly balanced, and would set up a shake at certain speeds that imparted a waggle to the steering wheel sufficient to crank up your self-winding wrist watch for the next year's running.

In the Kadett's suspension system, Opel engineers have achieved exceptional results with a basically straightforward layout. At the rear of the chassis, there is a conventional "live" axle, clamped to a pair of leaf springs that serve the usual purpose of springs and also locate the axle transversely. Thrust and torque from driving and braking loads are handled by what Opel calls an "extended pinion nose." Actually, there is a sort of shortened torque-tube arrangement, similar to that used at one time by Buick, but the forward end of the torque-tube is fixed to a pivot under the body, approximately even with the forward ends of the springs. The driveshaft linking transmission and torque-tube (via a universal joint) does not move up and down, so the driveshaft tunnel can therefore be made low and narrow.

We have no complaints at all about the front suspension, which has unequal-length A-arms ball-jointed to the upright member holding the stub axle. There is a 3-



leaf transverse spring located in a channel that provides a mounting for the suspension, steering, and engine, which means that a lot of heavy loads are all contained in one piece of structure—a very efficient system. Telescopic dampers are provided at all four wheels.

Most of the suspension joints are rubber-bushed, and the rest have lubricant sealed in, so that there is no need for periodically greasing the car's chassis. Change engine oil at 3000-mile intervals, and pop in a new filter at every other oil change. This is the total service requirement, except for an occasional peek at the battery and a tune-up every now and again. How quickly the old order passes; it seems only yesterday that imported cars required attention at so many grease fittings, so frequently, that one soon began to feel like a ship's engine-room oiler.

One characteristic we had not expected in this ultra-light, conventionally-suspended sedan was a good ride. Yet that is exactly what it has. Not the kind of "What cobblestones?" ride you get in a big domestic sedan, obviously, but quite good by any small car standard.

Inside, the Opel is as functional and durable as a hotel bathroom, with vinyl-covered upholstery and rubber floor mats. Happily, the Kadett also has all the small comforts car buyers have come to expect as their

due. A ferociously effective heater/defroster system is part of the standard equipment, and so is everything else but a radio and "power" options. The buyer gets electric windshield wipers (one speed), windshield washers, safety belts for the front seats, and an ash tray that holds a very limited quantity of ashes.



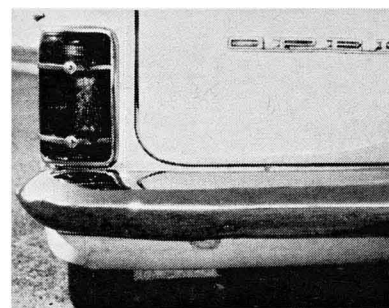
Instrumentation was scanty, which will not disturb Mr. Average Driver, holding himself aloof from what that sweaty little engine is doing. There are several colored lights (we wondered if the oil-pressure indicator had burned out) and real gauges for fuel-level and water temperature. The speedometer is of the horizontal-thermometer type

that so delights the stylists and, for a change, the readings were dead accurate—the instrument gave zero-error readings at all speeds the Kadett would attain; even the odometer was right on the money.

The station wagon struck us as being the best of the Kadetts. These are fundamentally utility cars, and the wagon simply offered more utility value, though at an extra \$138 as compared to the sedan.

As in other wagons, the back seat's bottom folds up and forward, and the top folds down (confused?), converting the space in the rear of the body into a cargo box, which gives the Kadett station wagon an overall usefulness the sedan lacks. All would have been peachy with this arrangement but for the weak catches holding the rear seat-back up in place. These are just little metal nibs that plug into rubber sockets, and they pull out quite easily. Luggage or whatever piled in the space behind the back seat will move forward under hard braking and promptly fold the seat, and its occupants unless they (the occupants) brace themselves. Children are, by actual test, unequal to the contest.

Other things noted during our test were: that the seats are well contoured but too upright for our tastes; some people will very likely prefer them that way. Too little travel is provided for the front seats, which cannot be shoved back far enough to give a six-footer enough leg room. Visibility is nothing short of magnificent, and that is probably as much a safety feature



(assuming the driver is awake) as anything else.

The Kadett is a bit noisy, mechanically, but it is also extremely well finished considering the low purchase price. The doors close with a satisfying thump, and all of the various body pieces fit with a minimum of gaps.

Fully as important as the overall quality is the fact that the car will be distributed by Buick, and service will, in theory at least, be obtainable at any of the several hundred Buick dealerships around the country. With everything the Opel Kadett has going for it (including a rousing success in Europe), it might just be the smash hit of the coming sales season. We'll be watching.

(Specifications overleaf)

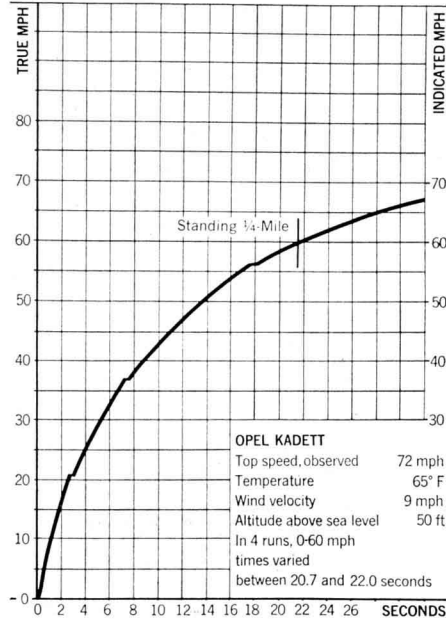
OPEL KADETT

Importer: **Buick Motor Division
General Motors Corporation
East Hamilton Avenue
Flint, Michigan**

Price as tested: \$1817.95 POE East Coast

ACCELERATION

Zero to	Seconds
30 mph	5.0
40 mph	8.7
50 mph	13.8
60 mph	21.2
70 mph	39.6
Standing 1/4 mile	60.6 mph in 21.7



ENGINE

Water-cooled four-in-line, cast iron block, 3 main bearings
 Bore x stroke 2.84 x 2.40 in, 72 x 61 mm
 Displacement 60.2 cu in, 993 cc
 Compression ratio 7.8 to one
 Carburetion Single downdraft Opel
 Valve gear: Pushrod-operated overhead valves
 Power (SAE) 46 bhp @ 5200 rpm
 Torque 54 lb-ft @ 3200 rpm
 Specific power output 0.76 bhp per cu in, 47.3 bhp per liter
 Usable range of engine speeds
 1000—5500 rpm
 Electrical system 6-volt, 66 amp-hr battery, 200-W generator
 Fuel recommended Regular
 Mileage 31—35 mpg
 Range on 8.7-gallon tank 270—305 miles

DRIVE TRAIN

Clutch Belleville-type single dry plate
 Transmission 4-speed all-synchro

Gear	Ratio	Over-all	rpm	Max
Rev	3.797	14.77	-4.25	-23.3
1st	3.764	14.64	4.3	23.6
2nd	2.156	8.38	7.5	41.2
3rd	1.406	5.47	11.6	64.0
4th	1.000	3.89	16.2	72.0

 Final drive ratio 3.89 to one

CHASSIS

Unit-construction, all steel structure.
 Wheelbase 91.5 in
 Track F 47.6 R 47.8 in
 Length 154.5 in
 Width 58.5 in
 Height 54.25 in
 Ground clearance 6.3 in
 Dry weight 1518 lbs
 Curb weight 1580 lbs
 Test weight 1760 lbs
 Weight distribution front/rear % 50/50
 Pounds per bhp (test weight) 38.2
 Suspension F: Ind., unequal-length wishbones and transverse leaf spring with two-point anti-roll attachment to cross-member.
 R: Rigid axle, torque tube, and twin-leaf semi-elliptic springs.
 Brakes 7.9-in drums F & R, 122 sq in swept area
 Steering Rack and pinion
 Turns lock to lock 3.0
 Turning circle 33 ft.
 Tires 6.00 x 12
 Revs per mile 940

CHECK LIST

ENGINE

Starting Excellent
 Response Good
 Noise Poor
 Vibration Poor

DRIVE TRAIN

Clutch action Poor
 Transmission linkage Good
 Synchromesh action Excellent
 Power-to-ground transmission Excellent

BRAKES

Response Excellent
 Pedal pressure Excellent
 Fade resistance Excellent
 Smoothness Excellent
 Directional stability Excellent

STEERING

Response Good
 Accuracy Good
 Feedback Unacceptable
 Road Feel Average

SUSPENSION

Harshness control Good
 Roll stiffness Good
 Tracking Excellent
 Pitch control Excellent
 Shock damping Excellent

CONTROLS

Location Good
 Relationship Good
 Small controls Good

INTERIOR

Visibility Excellent
 Instrumentation Fair
 Lighting Excellent
 Entry/exit Good
 Front seating comfort Fair
 Front seating room Average
 Rear seating comfort Average
 Rear seating room Average
 Storage space Excellent
 Wind noise Poor
 Road noise Good

WEATHER PROTECTION

Heater Excellent
 Defroster Excellent
 Ventilation Poor
 Weather sealing Good
 Windshield wiper action Average

QUALITY CONTROL

Materials, exterior Good
 Materials, interior Good
 Exterior finish Good
 Interior finish Good
 Hardware and trim Fair

GENERAL

Service accessibility Excellent
 Luggage space Excellent
 Bumper protection Poor
 Exterior lighting Good

