GM'S GEE-WHIZZERS

EXCITING THINGS FROM GM'S BRAINS ABROAD

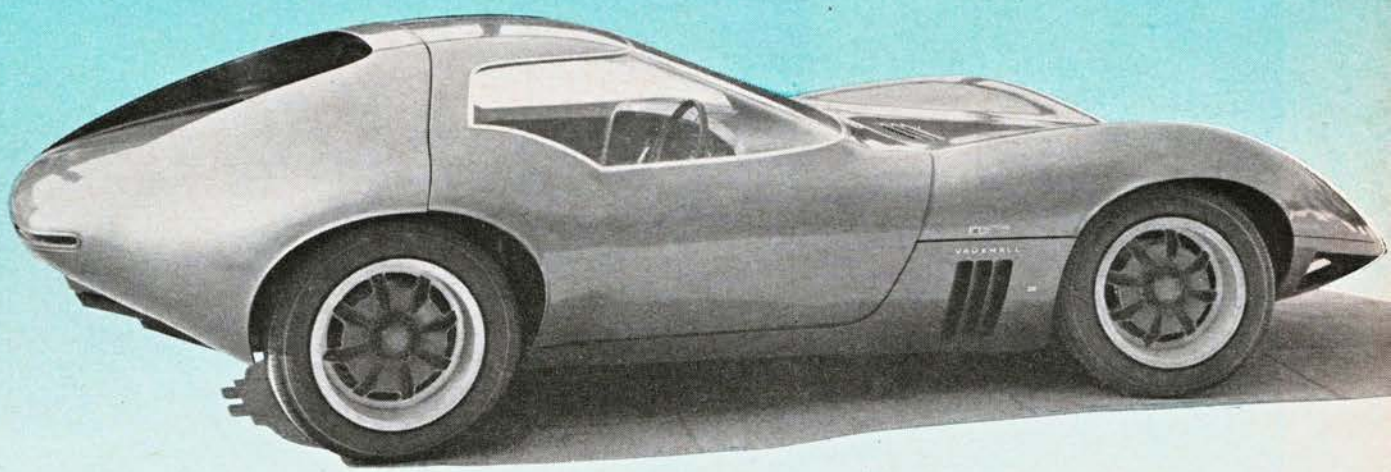
BY ERIC NIELSSEN

AMERICAN MOTORS will soon introduce a new 2-seater sports car, the AMX, in the under-$3000 range, and it's said that the Big Three have no counterpart ready. That may be true in the U.S., but not of their affiliates abroad, which can export to the U.S. to the extent required by company policy. Chrysler has its Sunbeams, Alpine and Tiger, and its new 1200-cc Simca coupe, and General Motors has two impressive experimental cars that could take direct aim at the under-$3000 bullseye.

Experimental cars overseas, shown to the public by major manufacturers, aren't the common objects they've become in the U.S. Since GM's Y-Job and Chrysler's Thunderbolt and Newport in the late '30s, "dream cars" have been an accepted part of the American automotive scene. Today, as they've become less flamboyant and more practical—most often fully operational prototypes—they're more appropriately known as "experimental cars."

These not-for-production automobiles provide: 1) Diversionary excitement and cranial exercise for stylists, engineers and product planners, 2) excellent attractions for displays at automobile shows and dealerships, 3) image projections of a company's vitality and ability in car design, 4) information on public reactions to new styling and engineering features of experimental cars.

European automakers (as distinct from body builders such as Pininfarina and Bertone) rarely have built special show cars or displayed non-production vehicles. They feared that such cars would draw attention away from the bread-and-butter models on show, and that the public wouldn't understand or accept the fact that the car was not actually going to be produced. Moreover, European firms traditionally are ▶



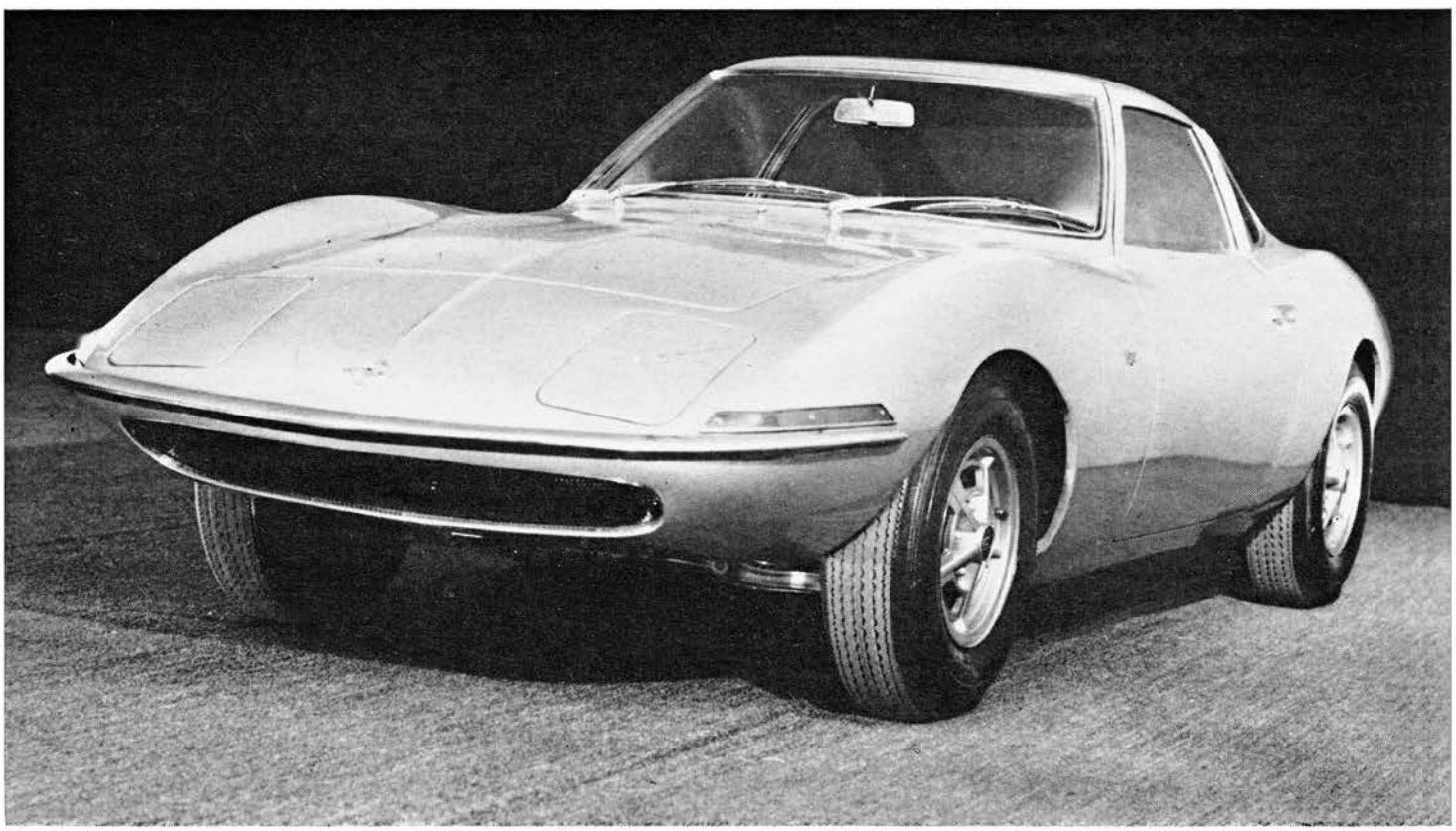
short staffed in the styling department and any extra time or money spent on special cars is usually in racing or record machines—a policy that can hardly be criticized.

Now General Motors, prime exploiter of the experimental car idea in the U.S., has moved to do the same in Europe through its subsidiaries, Adam Opel AG in Germany and Vauxhall Motors Ltd. in Great Britain. In each case the motivations have been different. Opel is a large volume producer, second only to Volkswagen in Germany, and it can see room in its model lineup for a sports car, especially in view of the scarcity of low-priced German-built sports cars.

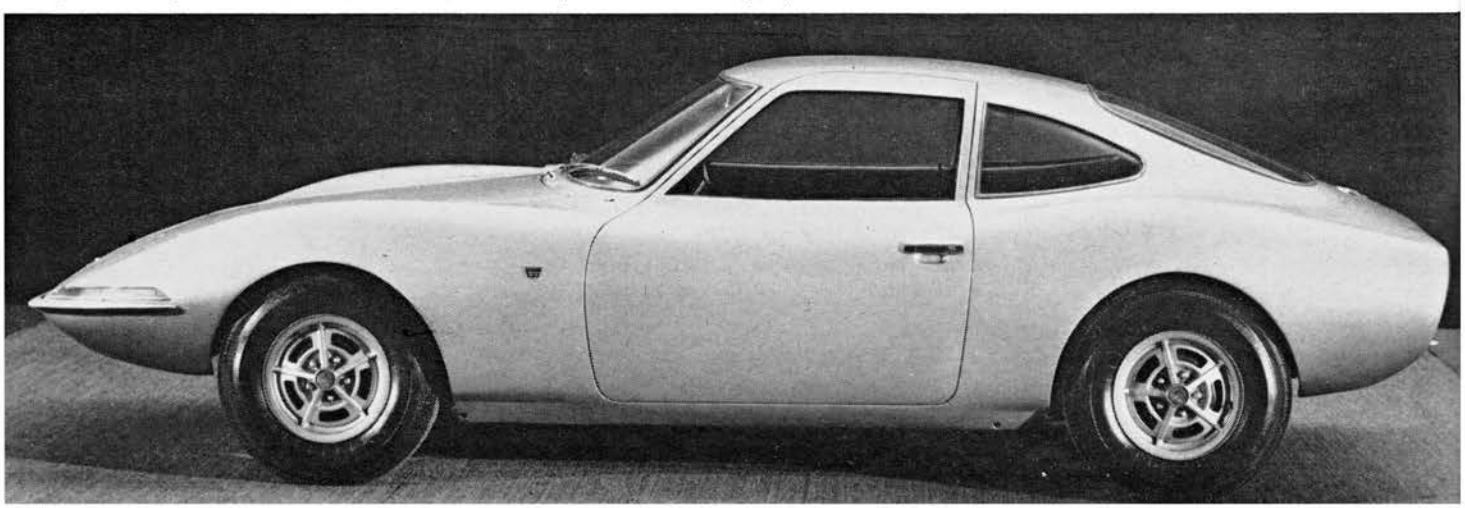
Opel also felt that a sporty prototype would help focus public opinion on Opel products, which until the last several years have been notable for their unrelieved dullness. Vauxhall faced a similar problem: new and improved products that were bucking a middle-class family car reputation.

Semon E. "Bunky" Knudsen, whose GM responsibilities then included overseas activities, had faced and solved a similar problem at Pontiac. He knew an experimental car like the XVR would help show the public what Vauxhall's engineers and stylists could do.

Though Vauxhall is smaller than Opel, it faces much more domestic sports car competition, so there remained the possibility of a future sports car in the Vauxhall line.



OPEL'S EXPERIMENTAL GT is built on the Kadett floor pan and uses th e Kadett independent front suspension. Its engine is the Opel 1897-cc (106 cid) sohc four, modified to produce 108 DIN bhp; up from 90 stock.



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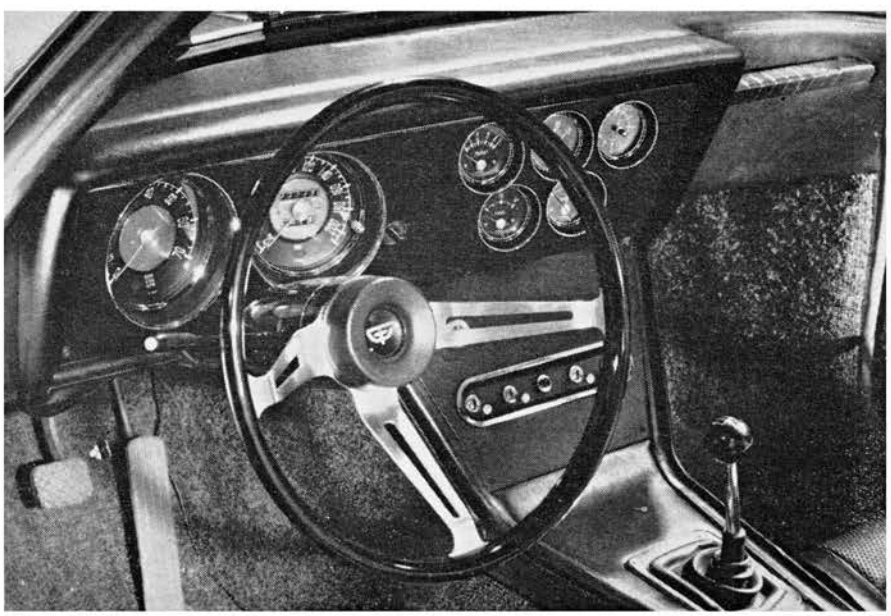
OPEL'S GT coupe was styled under the direction of C. M. MacKichan, one of GM's best designers, who served a stint as chief Chevrolet stylist. This should lessen any amazement over the close resemblance between the GT and the experimental Corvair Monza GT coupe, built in 1962, with its flip-top roof. The similarity is especially strong in the peaked fender lines, cut-off and recessed tail and the use of concealed headlamps for a low flat nose. Work on the Opel GT was carried out entirely at the new styling center at Rüsselsheim by ripening and imaginative young German stylists.

At the front, the GT uses a wide air inlet slot below the slim integral bumper that follows the nose peak line. This requires a fairly high nose—a potential source of front-end lift—which could be reduced by a spoiler just behind the air inlet. The headlamps pop up electrically, and squared lenses reduce the amount of upward travel required for full extension.

Other body features of the Opel GT include doors extending up into the roof for entry clearance on this 46-in.-high car, and access to the rear luggage compartment through the interior. In the rear there is space for minimal seating, with the usual fold-down seatback to give a flat luggage area. The bucket seats and multi-dialed panel, merging into a central console, are very much in the modern European GT idiom. Driving position is very good, and the narrow pillars allow excellent visibility all around.

THE OPEL'S interior is a good blend of Detroit and Europe. Instruments are angled toward the driver.



Opel's engineers used a blend of components in the chassis. The floorpan is basically Kadett, as is the independent front suspension, using a transverse leaf spring. At the rear, they located the coil-sprung axle with trailing arms and a lateral Panhard rod. This layout was new to Opel but since has been adopted on the firm's Rekord and Commodore models.

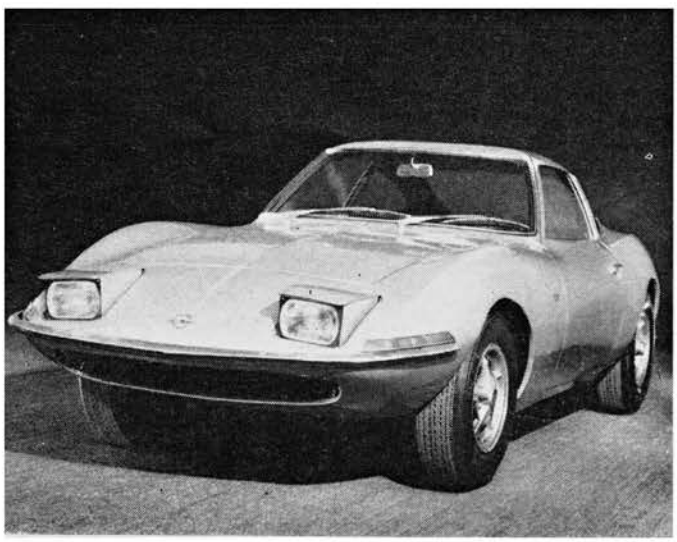
The basis of the GT's engine is Opel's 106 (1897-cc) four. In stock form, with its camshaft in the head operating in-line valves through tappets and rockers, it produces 90 DIN bhp at 5100 rpm. For the GT, Opel produced an experimental cylinder head with a higher camshaft, lighter valve gear, improved porting, larger valves and higher lift cam profiles. On a 10:1 compression ratio, it produces 128 DIN bhp, giving it more punch than any production sports car in the under-2-liter class (with the exception of the Porsche 911 in its tamest form). The sohc Opel is a high-torque, smooth-idling unit that uses a special Solex carburetion system with four semi-downdraft throats fed by a single float chamber.

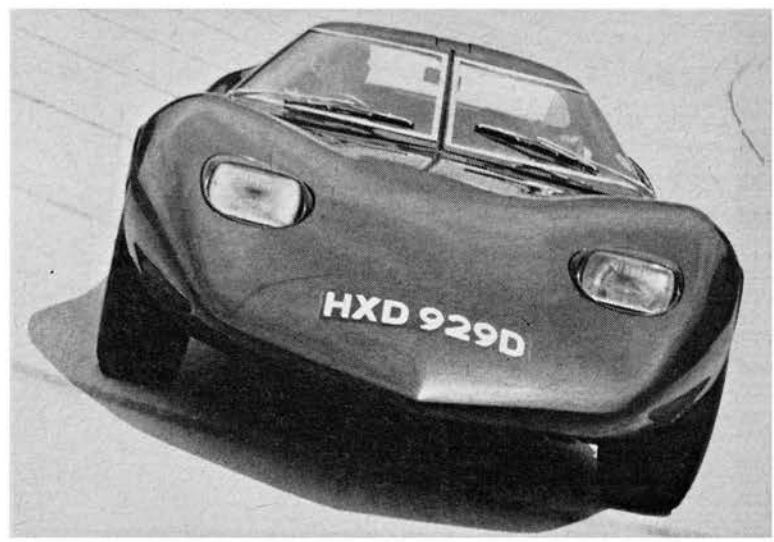
Opel has built two running GT coupes, one mainly for auto show display and the other for testing on the company's new high-speed track at Dudenhofen, where the coupe easily clocks laps at 125+ mph speeds. First shown at Frankfurt in 1965, the GT created quite a stir among the German makers, who like to believe they each have cozy market segments to exploit without troublesome and confusing competition.

When the GT coupe was first decanted at the Frankfurt Show's loading dock, a well-known designer spotted it and hastened to the Porsche stand: "There's a new Opel sports car here, and it's pretty nice. You'd better come and have a look." The Porsche reply was unequivocal and final: "Don't be silly; that's impossible. *Opel* can't build a sports car." But Opel had. The little silver car has been shown from Sweden to South Africa and even in New York, to the delight of the Buick dealers selling Opels.

Opel dealers worldwide soon may have GT coupes to sell because Opel supposedly began to tool for limited production of the GT, probably with a fiberglass body, perhaps to be made in France rather than Germany. It would be offered with a wide range of engines and at a price competitive with the British sports cars.

VAUXHALL'S VXR is the more exotic of the two show cars, and probably the most successful esthetically. Cockpit entry is through large door panel hinged at the unique split windshield centerline.





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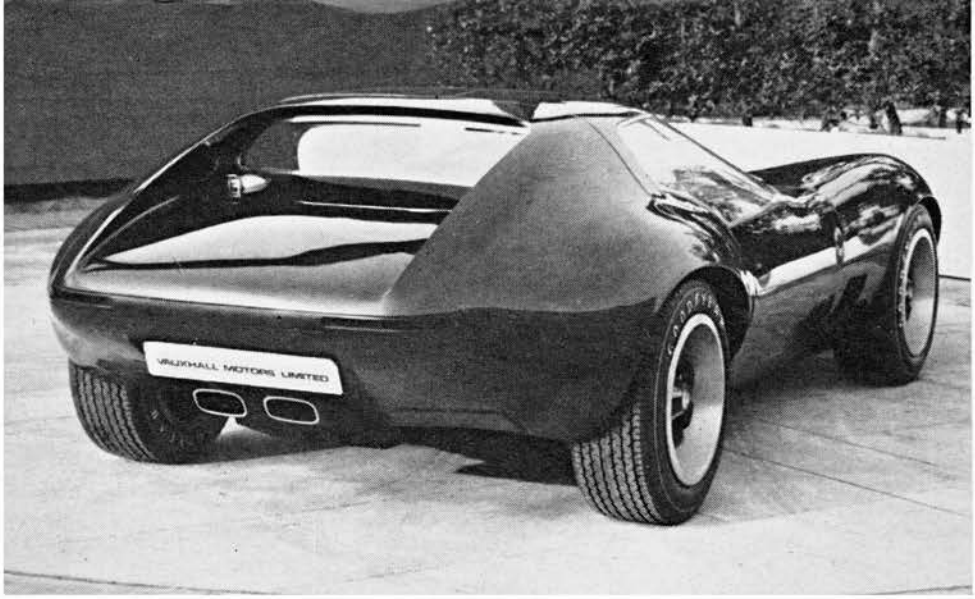
IF OPEL IS trying to catch up with the British sports car technique, its sister in Britain, Vauxhall, gave that technique a substantial shove forward with the XVR, one of the most radical front-engined sports coupes ever made. It recalls the Bill Thomas Cheetah with its long nose and extreme rearward placement of the engine and occupants. The very slick shape has been called "sleek, sinister," "ugly and menacing," "extremely attractive" and "a brutish beaked monster conceived in a wind tunnel." It lurks close to the ground, only 40 in. high, with the squat proportions that result from an 85-in. wheelbase and 56-in. track.

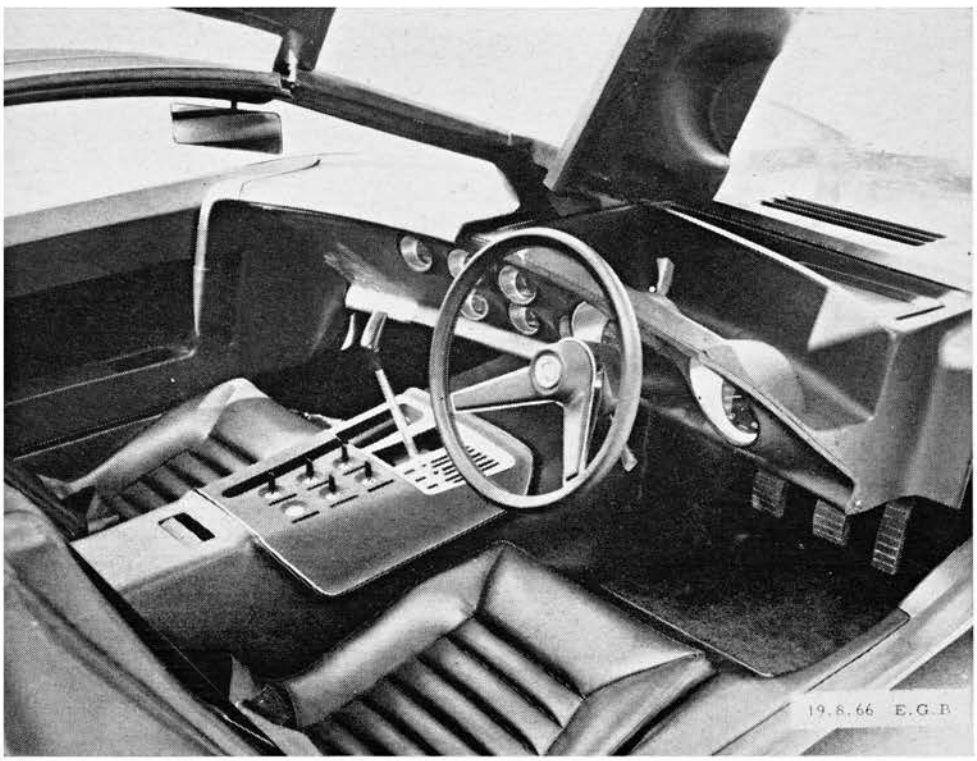
The XVR is far more experimental technically than the Opel GT. Its chassis is a sheet steel platform, reinforced by a deep central backbone, Miura-style; by integral seat pans, the seats being fixed, and by a built-in rollbar structure that also supports the door pivots. The rear deck of the fiberglass body lifts to accommodate luggage, while the hood pivots up and ahead to uncover the engine and spare wheel, stowed forward.

Suspension is independent all around, along competition car lines, with parallel wishbones set to give a fairly low roll axis, 3 in. above ground level, minimizing camber change to suit the wide profile racing tires used. These are of 5.00-15 size, mounted on rims 8 in. wide. Centrifugal outlets in the cast aluminum wheels supplement cooling airflow for the outboard disc brakes. These are 9.25 in. in diameter and power boosted. Concentric coil/shock units are used at all four wheels, and the XVR is steered by a rack-and-pinion gear.

Two XVRs were made at Vauxhall's Luton Engineering Centre, one a mockup for show and the other very much for go. It was initially powered



VXR INTERIOR runs more to GM show car styling with exaggerated instrument panel and console.



by Vauxhall's stock VX 4/90 4-cyl. engine, producing 85 bhp from 97.2 cid (1594 cc), with an aluminum head and twin carburetors. The basic design was left very open, however, to accommodate other engines, even a six or V-8. Easily fitted would be the two new fours introduced this fall, a 97.5 cid (1599 cc) developing 82 bhp, and an overbored version of 120 cid (1975 cc) producing 98 bhp. Both engines have a single overhead camshaft driven by a fiberglass-reinforced, cogged rubber belt that also operates a side-mounted accessory package, *à la* Pontiac Six.

Vauxhall's Styling Director, David Jones, used wind tunnel tests with scale models to develop the very clean XVR surfaces, with minimal form drag from the flush-fitting window glass. Interior ventilation is provided by ducts from screened inlets just ahead of the front wheels. Air exits from the cockpit through the recessed rear window, which lowers electrically. Deep under the nose, almost parallel to the ground, are the radiator air inlets. Underhood air is vented out gill-like louvers ahead of the windshield and behind the front wheels.

Among the XVR's other unusual body features are the rectangular headlamps, which are electrically rotated into position around a vertical axis instead of popping up as do the Opel GT's lamps. Radical axes are also used for the XVR's doors, which pivot up and forward along the line of the single central windshield post. This is a scheme stylists have often sketched but have seldom tried full scale, partly because of the supporting strut problem. Vauxhall has neatly solved this with a long arm rearward from the cowl, spring-supporting the door through a ball working in a slide along the base of the door.

Visibility all around is extremely good with this door/window arrangement, though some problems are posed in the windshield wiper department. Vauxhall put none on the XVR mockup, and on the running car they pivoted at first from points close to the center post. After tests, this layout was reversed, with the pivot points outboard instead of inboard.

The XVR carries full circular instrumentation, deeply recessed in the dash panel. All the operating switches and controls, including the shift and hand brake levers, are carried on a panel atop the central chassis backbone. Fore-and-aft adjustment is provided for the suspended pedal assembly, since the seats are fixed, and the small 2-spoke wheel is adjustable for height and distance. Useful hand grips are neatly integrated into the inner door panels.

The XVR was designed at Luton by David Jones and Vauxhall's chief engineer, John Alden, obviously with moral support from GM Styling personnel. After the mockup car was approved, construction of the running XVR was completed in just 12.5 weeks, in time for its debut at the Geneva Show.

Noting that Vauxhall is not now competing in the 2-seater category, John Alden added, "If we do enter the sports car market, we want to get it right." The XVR ably illustrates just how well they could do if they wanted. Will Vauxhall build the XVR or some variation? Alden again: "Obviously behind all these advanced design projects we have some idea that in the long-term future we might put them into production."

A few small photos of the car in an issue of *Road & Track* brought a deluge of requests for more information to GM's Overseas Operations Div. If public opinion were the only criterion, the XVR would be in production already. But Vauxhall is working hard to update its sedan line in Britain's very competitive middle-range market, and it might not have the capacity or funds soon to tool up a sports car. If not, perhaps they'll turn the XVR design over to Lotus. It has the looks the Elan *should* have to match its advanced engineering. Wouldn't *that* be a nice car to own! ■