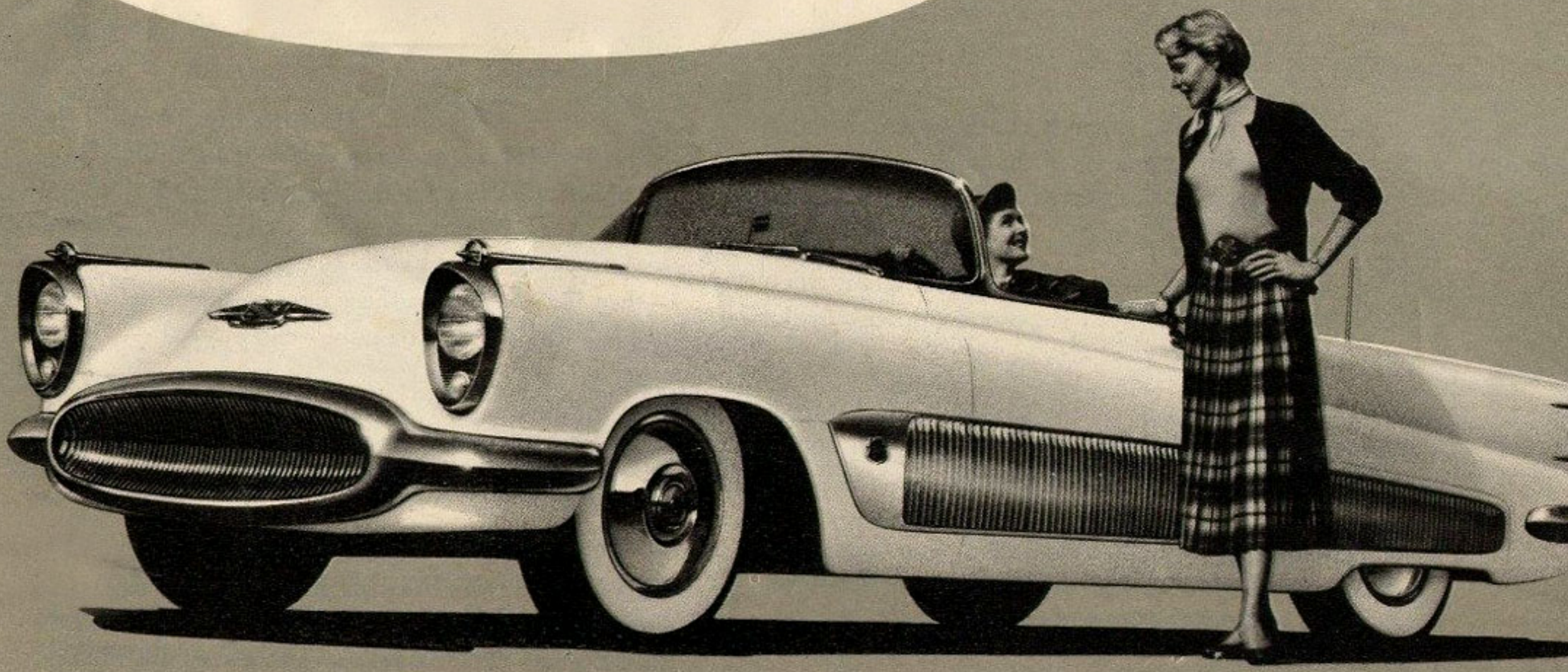
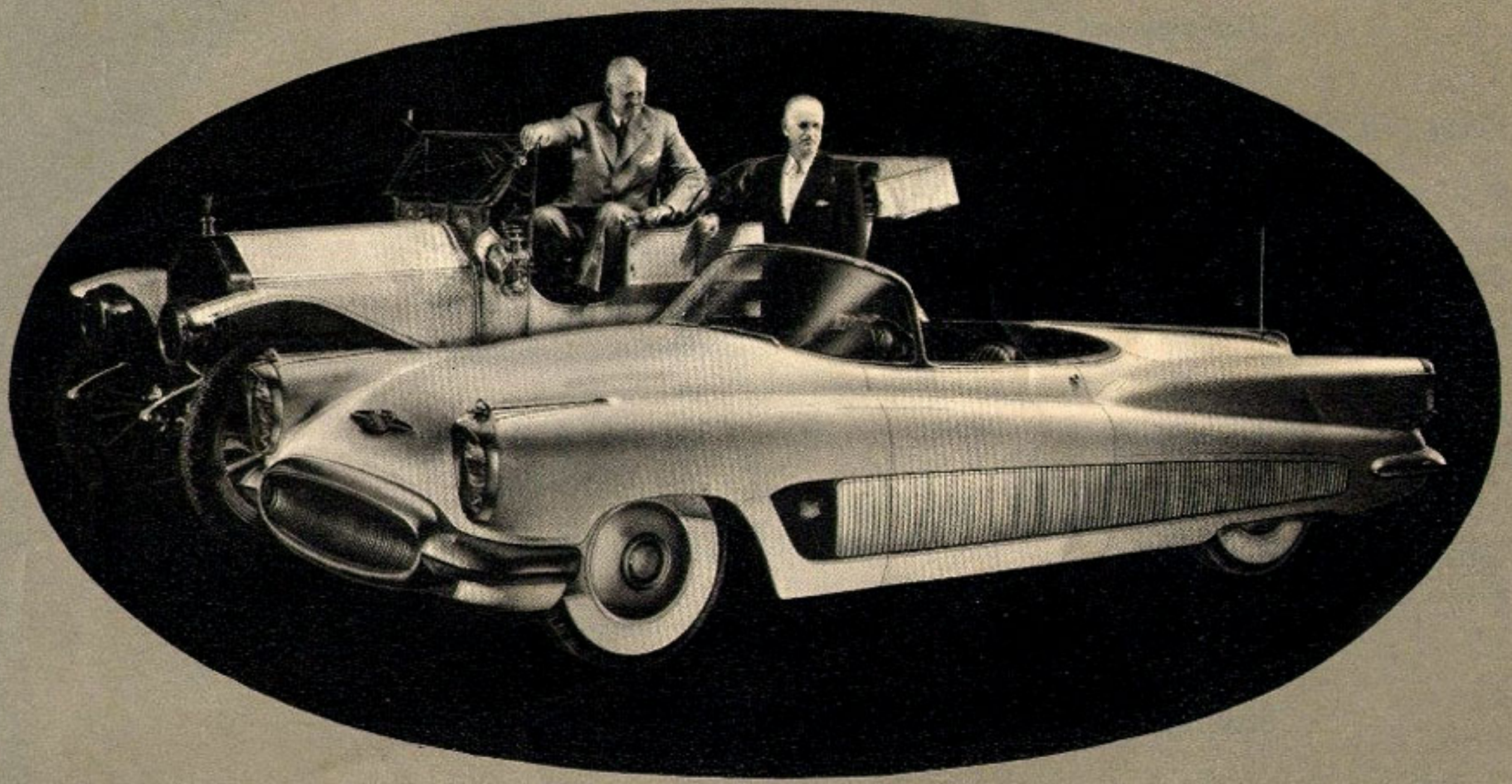
The XP-300



The "Inside Story" of Buick's "Experimental Laboratory on Wheels"



The XP-300

Tomorrow's Evidence that
When Better Automobiles Are Built
BUICK
Will Build Them

WHY BUICK BUILT THE XP-300
THE "INSIDE STORY"

THIS custom-built, super-streamlined car with its 335 horsepower engine is obviously not the forerunner of soon-to-be-produced General Motors stock cars.

A glance at its equipment, the materials from which it is made, and the way it is powered quickly make that clear.

Nor is it a "sports car" in the sense that term is used today: a speed car for the racing driver or an automotive plaything for the motorcar faddist.

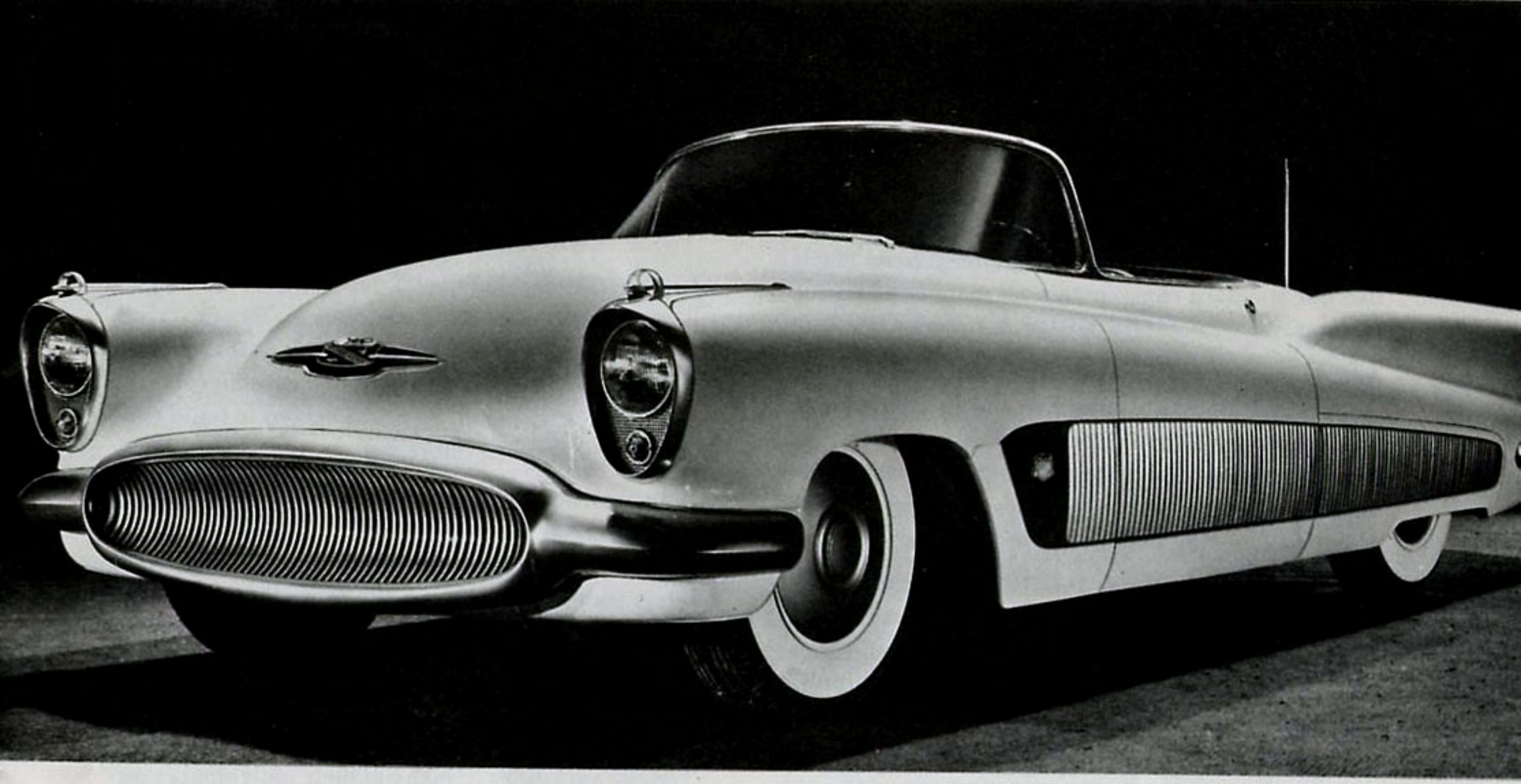
What is it, then? And why did Buick build it?

To answer that, you have to understand the basic problem of the men who engineer and style the modern motorcar.

Their job is to design cars within rather clearly defined limitations—limitations established to some extent by the current difficulties incident to the acquisition of the necessary machinery and tooling; by analyses of customer preferences; by availability and cost of materials and by many other factors seldom appreciated by the customer. And—of course—they have to design these cars so that they can be produced at a price the public can pay.

At the same time, because of the American urge for new and better things, engineers and designers must strive continuously within these limits, to advance the performance, comfort, safety and beauty of the family motorcar.

This starts on the drawing boards of the engineers and the stylists. From there through the experimental shops, where the ideas take on size and shape. Finally, after the parts are built, they are subjected to the gruelling tests of the engineering and research labo-



ratories. Eventually, if they stand up on these tests, they are tried under actual operating conditions at the General Motors Proving Ground. Only after lengthy tests prove a design to be practicable is it released for production.

Even so, General Motors has always felt that GM engineers and stylists should enjoy an even greater freedom to thrust ahead into the automotive future. For only by advancing far beyond the immediately practicable to the remotely possible can GM make the dreams come true that mean — more and better things for more people.

THE "Y JOB"

That's why year after year GM engineers build experimental cars which, though they look much like our standard cars, contain all manner of tryout features.

And, going beyond these, it's why, way back in 1938, the General Motors Styling Section, in cooperation with Buick, built the famous "Y Job"—"an experimental laboratory on wheels"—containing many features, particularly in styling, at least a decade ahead of our fast-moving automotive industry.

In fact, so advanced was this 1938 "Y Job" that a news service reporter, seeing it for the first time in 1948, thought it must be a 1949 Buick and sent a picture of it, named as such, around to the editorial desks.

But what is important to remember is that the "Y Job" proved extremely useful — as do all such carefully studied experiments. For many of the "dream" features of the "Y Job" are now found on present stock models. Among these are electrically actuated convertible tops and door windows, tail lamps recessed in rear fenders, and fender extensions over doors. Various styling lines and grille treatments also appeared in production cars after 1938, all inspired by "Y Job" innovations.

THE XP-300 AND LE SABRE

In 1946 GM decided the "Y Job" had served its purpose. It was time to build a successor. Yet our stylists and engineers had so many innovations they wanted to test, it was quickly apparent one experimental car couldn't hold them all. So it was agreed to build two: The XP-300 and Le Sabre.

Both cars were the result of a long-term cooperative activity involving the General Motors Styling Section and the Buick Motor Division Engineering Staff. Integrating and directing the over-all project were Charles A. Chayne, former Buick Chief Engineer and now GM Vice President in Charge of Engineering Staff, and Harley J. Earl, Vice President in Charge of Styling Staff.

The two cars differ in many of their individual experimental features.

But both were designed with the same over-all goal in mind: to build an extremely high-performance car without sacrificing passenger comfort or ease of handling. For, until the arrival of XP-300 and Le Sabre, it was a widely accepted belief, not shared by

GM, that high performance had to mean hard steering and a hard ride. Both cars, therefore, are completely new from the ground up!

What's In A Name?

The XP-300 is exactly what its name implies. It is an experimental project with 335-horsepower performance in a car that is complete in every detail of riding and driving comfort. More than that, it is a mobile laboratory in which GM engineers will try their most forward-looking ideas. As Mr. Chayne puts it, "These cars are really studies in 'results'. When we reach a conclusion that a certain result is good, we'll pass it along to our production engineers to find a way it can be built into production cars. If we decide another result is not desirable it will quickly be replaced in the car with another 'try.' Both of the cars are going to lead lives of constant change. For this reason, what is seen in them today may be entirely different thirty days from now—and almost certainly will be quite different six months from now."

That's the "inside story" of the Buick XP-300.

To understand further what each of the major experimental features of the XP-300 may mean to the car of tomorrow, it's important to look beneath the glamorous aspects of this "dream car" and see why the XP-300 is made the way it is.

The "Inside Story" Of XP-300 Performance

The XP-300's power plant is an experiment to see what can be done if today's limitations as to fuels, cost and availability of materials were removed.

The V-8 supercharged engine, designed specifically for the car by Buick engineers, weighs only 550 pounds, yet it develops 335 horsepower. Despite this tremendous power, the engine is as smooth and tractable as any of today's passenger car engines and has proportionately high power at low speeds. It must be remembered that engineers are primarily interested in what an engine does at the speeds at which cars are normally driven. Abnormally high powers are only of experimental importance. They are a by-product of top performance.

The cylinder head and crankcase of the XP-300's 90-degree V-type engine are made of aluminum. The exhaust valves are sodium-cooled. The engine is supercharged by a blower of the type developed by GM engineers for Diesel engines.

The long louvered chrome panels along the side of the car are functional, as well as a distinctive appearance feature. The louvers ahead of the door opening, as well as those in the front third of the door, serve to permit air to escape from the engine compartment. The louvers at the rear of the door open into the driving compartment and are fitted with adjustable dampers so the driver or passenger may control the amount of air flowing through the compartment.

A tapered chrome fin extending down center of the rear deck conceals hinges which permit luggage compartment to be opened from either side. Rear has long sweeping taper, ending in circle similar to rear end of jet engine. This circle houses a Sealed Beam flood-light unit serving as backup light.

An automatically extending radio antenna rises out of the rear "fin." Two round bombs in center area of the rear bumper are exhaust outlets.

The two fuel tanks, one for methyl alcohol and the other for premium-grade gasoline, are set behind the front seat.

XP-300 Construction

The XP-300's construction is an experiment in the use of lighter metals* and of new welding techniques.

Basically it is a steel structure, with a skin of aluminum. Body panels are of heat-treated aluminum, keeping the weight of the car to a minimum.

Body and frame structure are welded into one solid unit. When doors are closed, hydraulically operated steel bars slide into position, like the bolts on the side of a vault, making the door a structural part of the body and frame assembly.

Chassis frame is chrome molybdenum steel box-type, designed for maximum rigidity. The rear end floats on coil springs, but the front end rides on highly experimental torsion-spring construction.

New Type Brakes

XP-300 brakes are an *experiment* in developing braking power capable of insuring safe, fast stops from high speeds.

Extra-wide brake drums provide room for double sets of brake shoes cooled by forced air. Front brakes are on wheels. Rear brakes are mounted on differential.

**The XP-300 was completed prior to the current restriction on the use of critical materials.*

Front brakes not only have special air passages, but front drums have radial fins to pump air past working surface of drum. Rear brakes have conventional cooling fins on the drums.

Drums are steel with centrifugally cast iron liners to provide long-wearing surface.

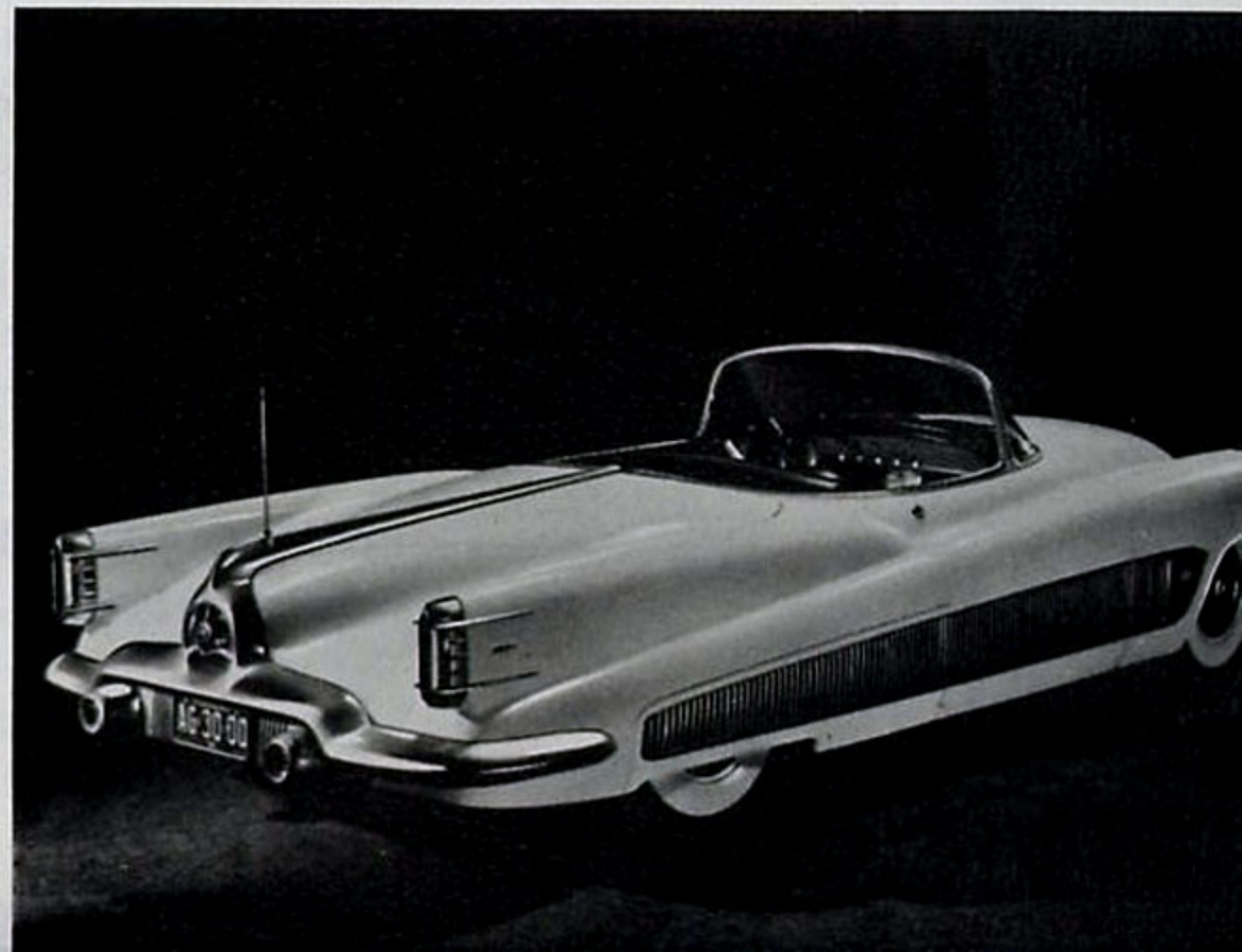
Novel Instrument Board And Pedestal

Best proof of the "experimental" nature of the XP-300 is its instrument setup. For in addition to the normal car instruments, XP-300 has added ones to give precise performance information for scientific check during operation.

A combination speedometer-tachometer shows engine revolutions per minute as well as miles per hour. This is mounted over the steering column directly in front of driver. Other instruments are arranged across a shallow board and on a floor pedestal between seats.

The clock is a combined clock, stop watch, and elapsed-time stop watch. The manifold pressure gauge, when used in conjunction with tachometer, allows driver to determine approximate horsepower engine is delivering on road. Fuel gauge shows amount of fuel in gas tank but, at press of button, tells amount of alcohol in other tank. Engine oil level instrument, similarly, will show oil level in transmission. Other instruments include water temperature and battery gauge.

Radio controls, light switch and Dynaflow selector lever are located on floor pedestal. All instruments are round-faced aircraft type for easy reading and equipped with "black light" for night use.



FURTHER FACTS ABOUT THE XP-300 FOR THE MOTORCAR EXPERT

BASIC DIMENSIONS — IN INCHES

Wheelbase	116
Over-all Length	192.5
Front Overhang	28.9
Rear Overhang	47.6
Front Tread	59.1
Rear Tread	60
Maximum Over-all Width	80
Road Clearance	6.6
Over-all Height	53.4
Headroom	37.3
Seat Height	8.5
Legroom	45.5
Total Adjustment of Front Seat	4.1
Backlight Slope	43 degrees
Windshield Slope	53 degrees

ENGINE AND CHASSIS

Cylinders	90-degree V-8, valve-in-head, supercharged
Horsepower	335 at 5500 r.p.m.
Bore and Stroke	3¼ by 3¼

ENGINE AND CHASSIS (Continued)

Displacement	216 cu. in.
Compression Ratio	10 to 1
Electrical System	12-volt
Fuel	Premium gasoline & methanol
Fuel System	Dual carburetion for gasoline and methanol, two electric fuel pumps
Cooling System	Brazed aluminum radiator, tube and center construction, five-blade fan, 18 in. diameter
Transmission	Specially constructed Buick Dynaflow torque converter type
Rear Axle	DeDion type with coil spring suspension
Front Suspension	Independent with torsion springs ball joints at outer end of arms
Steering	Over-all ratio 18 to 1, turning diameter 39.5 feet
Frame	Integral frame and body of light gauge box section members
Wheels	Disc type, 15 by 6.00 L
Tires	7.10 by 15, 6-ply
Brakes	Tandem, duo-servo type, finned centrifugally cast drums, 9 x 3½ inches; two sets of shoes side by side, 1¾ inches wide.

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