GENERAL MOTORS' PLANS: Past...Present...Future

MARCH 1956 25c 1 = 1

3 ROAD TESTS:

CHEVY- How hot is the "hottest yet"?

DODGE - What's under the "look of success"?

MERCURY- How big is the "Big M"?



SURVEY: THE RIGHT BODY CHOICE FOR YOU



The U.S. Senate Judiciary
Committee has investigated
the development and growth
of General Motors to determine
if GM is a trust or monopoly.
MOTOR TREND here presents
some highlights of the early
years, the current activities,
and the near future of this
vast, complex organization.
Here is the dope on engineering
research, body styling, and
sales procedures in GM's
then-dark, now-bright history

HOW



GM



The 25,000,000th: a '40 Chevy

GOT

he 1st "dream car"



THAT

GM's latest, the gas-turbine-powered Firebird II

WAY

by Don MacDonald

PSYCHICALLY, perhaps, when *Time* magazine chose Harlow H. Curtice as 1955's man-of-the-year, the editors added a footnote to their cover which read "General Motors' Curtice."

Men-of-the-years of the past have been political, military, or scientific. None except Walter P. Chrysler in 1928 have been business men. Going beyond *Time*, it seems as tho we have a new breed of man—progressing thru the ape, Neanderthal and Cro-Magnon men to Corporate men of the 20th century.

Mr. Curtice has devoted 42 years to General Motors, starting in 1914 as a bookkeeper for the AC Spark Plug Co. only 6 years after the formation of the parent organization. Now he is the president of an industrial phenomenon that is bigger by far than any other corporation in this country and also bigger (treasurywise) than the majority of sovereign coun-

tries. This is despite the fact that twice (1910 and 1919-21) GM has been in deeper financial trouble than the darkest nightmares of today's independent automobile producers.

To trace GM's growth in detail since its organization in 1908 would require a lace-like chart covering 2 of our pages and involving nearly every famous name in the industry. Buick, for example, stemmed from a bankrupt plumbing concern called Buick and Sherwood. It became the springboard from which William C. Durant built General Motors, and as a division, was run for many years by Walter P. Chrysler.

When R. E. Olds sold out to Durant, he left to found Reo. Henry Leland took over Henry Ford's 1st and only failure, the Detroit Automobile Co., to found Cadillac and left soon after the advent of Durant to create Lincoln. Somewhere

around 1910, Henry Ford was within a million dollar hair of selling out to GM.

C. W. Nash and Durant himself were both ex-presidents of GM who left to make automobiles under their own names, one successfully and the other not. Aside from surviving divisions, cars once made by GM included Cartercar, Elmore, Randolph, Welch, Scripps-Booth and Sheridan. Buick made the Marquette, Oldsmobile the Viking, Cadillac the LaSalle, and Pontiac swallowed up its parent Oakland.

The expanding colossus rapidly absorbed even its suppliers, bringing into the fold such companies as Packard Electric (originators of the Packard car); Dayton Engineering Laboratories, which became Delco and blessed GM with the practical genius of Charles "Boss" Kettering; Hyatt Roller Bearing, whose 1st draftsman, Alfred P. Sloan, later became GM's president and still is chairman of

the board; and Fisher Body, which once was happy to sell to all comers.

We mention only a few but should not neglect AC Spark Plug, whose initials stand for Albert Champion. This French racing driver was financed by Durant in his 2nd attempt at the sparkplug business which soon became part of Buick and later GM. Controversy still surrounds the 1st attempt and whether it grew into what is now the Champion Spark Plug Co., but at any rate, this giant competitor of AC is completely independent of both GM and its story.

You can see by now that Durant's concept was an integrated organization that not only manufactured a complete range of automobiles, but built thru its subsidiaries as many as possible of the

parts that went into the automobile. If Durant had had a chance before the blow-up, he probably would have owned his own steel mill and ore mines.

Founder Durant controlled General Motors for 2 separate periods. During the 1st (1908 through 1912) he operated behind the scenes, wheeling and dealing in whole corporations, but never claiming more than a vice-presidency and directorship in GM. Surprisingly, in that era when many industrialists were classed as robber barons, no-one ever accused him of an unethical act. To this day, General Motors reflects his 2 great legacies—optimism and vision. Nevertheless, he was a poor administrator and airily neglected production problems.

This latter failing caused his downfall.

Like anyone else around 1910, GM could sell every car it could make and not enough money came in when production lagged, at least not enough to satisfy Will Durant's requirements. The banks moved in and installed production expert Charles W. Nash as president, removing both Durant and his figureheads.

Mr. Nash may have gotten the production lines moving again, but he neglected to read his morning copy of the Wall Street Journal. Between November, 1912, and June, 1916, Durant in "retirement" had formed Chevrolet from the embryo Little Motor Co. Using Chevrolet stock (which at the start was worth little more than air) plus the intangible value of Durant's reputation with the investing public, he quietly bought into GM until

Feature car of GM's Motorama will be Firebird II, a more plausible version of guided-missile original on 120-inch wheelbase. Relatively orthodox style-wise (compared to other Motorama cars), car is replete with unusual details. GM's president Curtice says, "Firebird II represents a report to the public on our progress in gas turbine development." New

Whirlfire engine generates more than 200 hp, weighs about 850 pounds. Because of regenerator's recovery of up to 80 per cent of exhaust heat, fuel economy approaches that of present piston engines. Designed for passenger car use, new GT-304 engine connects thru 7 to 1 reduction gear to driveshaft, which transmits power to car's automatic transmission. Firebird II is also test bed for such features as door locks controlled by magnetic key; 17-inch tires that have overall diameter smaller than next year's 14-inch super balloons; complete electro-hydraulic control of everything, including trunk lid; independent suspension of all wheels by Delco Air Oil

Suspension units; and radar system that will automatically predict obstructions ahead and apply brakes with effort based on rate of closure. Show car's body is probably most expensive ever built, being composed entirely of rare titanium. Another car has plastic body.

Cadillac's town car adaptation of already-committed-for-production brougham will stay a dream despite resemblance. Body is of Fiberglas and top (55.8 inches off ground) is black leather. Interior has black Fiberglas paneling and white leather in front. Rear compartment includes air conditioning, radio-telephone, ladies' vanity, cigar humidor, and bar. Hardware is satin gold. Doors are controlled by micro-switches with safety lock actuated by transmission control. All doors can be locked and all windows raised by using key in rear door. Electrical system can be over-ridden mechanically with car key for convenience.

Motors, and in the not-too-distant motoring future, at that.

Instead of calling this Bonneville II, Pontiac prefers to call it Club de Mer. Strictly for use in straightaway time trials, it is powered by a 300-horsepower V8. Air for engine cooling enters front, exhausts thru sides of front fenders. On a 104-inch wheelbase (shorter even than '56 Ramblers), car has clearance of only 5 inches. Headlights and parking lights revolve as unit and disappear when not in use. Interesting mechanical detail is synchromesh transmission located behind passenger compartment, adjacent to differential—a true prediction of things to come from General

finally he marched in upon a surprised board of directors and said: "Gentlemen, I am president." Incidentally, he brought with him Chevrolet.

His 2nd tour was marked by more optimistic expansion, which could be termed reckless except for the vision behind it. Still it outstripped capital, and during the depression of 1920-21, many remember the boarded-up windows of the unfinished GM building on Detroit's Grand Boulevard and GM stock selling for \$7 a share, shares for which Durant had paid as much as \$500.

Durant went out in late 1920 (to once again found his own company on his surprisingly durable reputation) and solid old Pierre duPont came in. From here stems the legend that duPont controls

General Motors. Actually, duPont money was used to stem the cave-in, and their ownership today amounts to a substantial but non-controlling 23 per cent.

As soon as things were solvent, Mr. duPont returned to his own affairs and turned things over to Alfred P. Sloan. Where Durant provided the vision that built but nearly ruined GM, duPont made the corporation solid financially. Sloan, a competent engineer, found outlet for another forte, managerial genius. He reasoned that one man could not effectively maintain an all-seeing God-like control over what was already an enterprise worth a billion dollars.

From his thinking stemmed the famous GM system of decentralized control which, like the military, separates command, staff, and operating functions. It was and still is so good that Henry Ford II's first act upon taking over from Grandfather in 1945 was to start reorganization based precisely on the GM pattern.

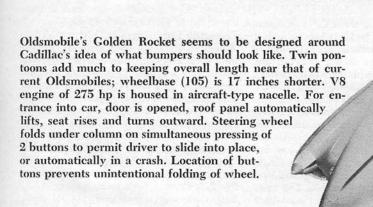
The Sloan era (which is still very much in evidence) brought to the fore Kettering and automotive engineering and research worthy of the name; proving grounds that would test a car before it got into the hands of the owner; Harley Earl and styling; but mainly expanded inquiry into things other than automotive, a facet already started by Durant.

During this period, GM built Frigidaire into a household word so common they have all but lost trademark rights; replaced steam locomotives on American tracks with diesels; (Continued on page 50)

Chevy's Impala can be considered a close approximation of that company's 1958 model, with possible exception of tinted wrap-around-the-top windshield. Dimensions are bas-

ically current Chevy except that body is 8 inches lower. Body is Fiberglas, trimmed with stainless steel. Interesting detail is speed warning system which spans entire instrument panel and has 10 circular windows which light up progressively in

more intensive shades of red for higher road speeds. Another interior feature is padded bar emanating from steering column, angling upward to flatten into horizontal plane entire width of car. Instrument controls fit flush with bar surface. Power is by 225-hp V8, thru Powerglide.



Buick Centurion could soon be in your garage. Four passengers sit in bucket seats inside a Fiberglas body, on a wheelbase 4 inches shorter than current Specials. Grille and hood are solid unit hinging at front behind grille and opening at

rear. Rear panel of car houses TV camera for giving rear view of road on instrument panel screen. Steering column is on centerline of car, connected with wheel at driver's position by cantilever arm, allowing leg freedom for driver.

Stop and backup lights are in bomb in rear center of car; when not in use, they appear to be solid chrome because of chromed effect of outer lenses.



"Road test" your car with any of these fabulous bargains for seven full days! If you're not 100% send the instruments back and the deal's off! No strings attached!

famous Autosphere Corp. PERFOMETER



Fabulous "dashboard dynamo-meter" completely checks ac-tual road horsepower, wheel alignment, and 101 other im-portant tests. Everything in-cluded in original carton! Fits all cars without drilling!

U Standard only \$9.95 Deluxe only \$12.95 Install on dash — know how many miles-per-gallon you're getting as you drive — know engine condition — avoid breakdowns — save gallons in every tankful! Fits all cars — no holes to drill!

Gale Hall Engineering MILE-O-METER

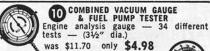
3 \$9.95 Standard — only \$4.98

\$14.95 Deluxe — only \$7.95 PRECISION COMPRESSION GAUGES Ultra-sensitive movements, stub-type handle. JET-MATIC 6 JET-MATIC 7 TEST-MASTER (334" dia.) HEAVY-DUTY (414" dia.) dealer price \$7.50 only \$2.98 only \$3.98 only \$4.98

OFFSET WRENCH SET Imported set of 6", 8", 10" wrenches — high-quality — rugged tempered \$5.95 value — only \$3.95



6" PLIER SET Set of 3 — long-nose, blunt combination, diagonal — quality drop-forged steel. drop-forged steel. \$4.95 value — only \$2.95



TEST-X PNEUMATIC ENGINE TESTERS

12 was \$10.75,

only \$4.48 SWISS OFFICER'S KNIFE 7-in-1 features! 2 blades, screw-driver, awl, can opener, corkscrew, bottle opener — a "pocket toolbox" at terrific savings!

B \$5.50 value only \$2.98 \$1.50 Gale Hall CHAMY-SKIM free REE with every purchase! Amazing sim-ulated chamois — sparkles your car to perfection.

Note: all prices plus 45c postage and insurance for each item.

These prices are terrific! Send me the instruments whose numbers I've circled below — I've checked the purchase plan I prefer.

1 2 3 4 5 6 7 8 9 10 11 12 13

I WANT TO SAVE EVEN MORE AND GET THE FREE CHAMY, TOO! Enclosed is my check or money order for . . ! understand you will absorb all postage and handling charges, and that you will send me the \$1.50 Chamy-Skim absolutely FREE! ! understand, too, that I can get an immediate refund by returning any or all of the items within 7 days of date of receipt.

Send C.O.D. Same \$1.50 FREE Chamy-Skim and money-back guarantee!

Send on "free trial" basis. No money enclosed. (Add 45c postage and insurance for each item.) I prefer. each item.) Name Address CityState... NEW ENGLAND SURPLUS SALES CO. . NEWBURYPORT, MASS.

and cons of styling changes. (In fact, we've heard so much comment on Chevy's new grille and side molding that we can't tell what the majority thinks of the changeover. Did find many people asking if rear fenders were peaked or if paint-andchrome of Bel Airs achieved the effect; it's the latter.)

But taking away the glitter (which you can do in varying degrees by selecting any number of models), you come up with a car highly impressive in performance, a genuine pleasure to drive, and a car with mechanical features that point up low-cost, long-term ownership. (And so no buyer will have to live with a too-drab machine, Chevy has initiated what may be a definite trend by dolling up its plainest 150 series with side trim and chrome around the windshield.)

Chevrolet is playing what appears like an unpretentious role in the Detroit safety show; dash covering, seatbelts, and the shoulder harness setup in particular aren't being pushed, but they're there for those who want them; safety-type doorlatches were installed in '55s (in July), went unannounced. In power and performance, in appearance and trade-in value, and now safety, Chevy is keeping competition on its toes, might even step on a few to keep from being trampled in the '56 sales rush; they've added new features to the cars, added more cars to the line, and thrown a potent package onto the low-price-class bargain table labeled "Hot." —Jim Lodge

continued from page 19

How GM Got That Way

then brashly ventured forth into high-risk aircraft engine development, and even, in Sloan's mind at least, considered pre-fabricated housing. Almost any mechanical product that was extremely complicated to manufacture, that could benefit from the existing engineering talent reservoir, and was then being made by small firms that lacked resources for proper exploitationthese qualifications made the item grist for GM's expanding mill and still do.

You might ask why this twice nearly bankrupt corporate monster, founded by a man who didn't know the difference between a sparkplug and a piston except by the price tag, emerged to its present-day hold on 50 per cent of car production plus enough else to worry government agencies concerned with "small" business.

We might generalize our answer by stating that GM could (and still can) afford to make mistakes. They did, too. Chevrolet, Buick and Cadillac are currently prosperous divisions that once came within an executive decision of being dropped like those already listed.

Here's the story of Chevrolet's nearmiss: When Mr. duPont became president at the time of Durant's 2nd exit, he brought in a firm of highly reputable consulting engineers to survey a reconstruc-

tion program for GM. They recommended amongst other things that the entire Chevrolet operation be liquidated. This division had a network of assembly plants but despite the fine reputation of their "Baby Grand" and "Royal Mail" models, they never managed to get firmly entrenched in the lowest price field, at that time (1921) exclusively Ford's, with 70 per cent of industry production being Model Ts. Sloan, then a vice-president, went to bat and talked duPont out of accepting the recommendation, certainly one of the most fortunate decisions ever made by GM.

Harlow Curtice was sent into Buick as division president in 1933 to salvage another badly floundering operation for which most observers at that time predicted an early end. They had failed to keep step with product development, even within GM, but most important, merchandising and distribution techniques were sad. Super salesman Curtice straightened things out in short order. His 1st real product chance was the 1936 Buick, and with introduction of the Century, it was a bombshell from Flint. Meanwhile, he merchandised the hell out of what he had.

Cadillac was also in trouble in 1933 when the division was losing millions on its ponderous V-12s and V-16s. GM gave it one last chance when the late Nicholas Drevstadt was moved up from service to production manager and then to general

. . . And as we went to press, 2 new GM 1sts in 1 . . .

N HILLY TERRAIN a heavy truck driver's 2 big chores are the endless gear changes in climbing a hill and the touchy, wearing use of the service brakes in descending. With this in mind, Chevrolet has introduced its new Powermatic torque converter truck transmission which incorporates a brand-new "retarding" device. Like the driver of an automatic-transmission-equipped car, the driver of a new Chevy truck simply selects his range (DRIVE, INTERMEDIATE or LOW) and he's automatically supplied with the appropriate up-and-down shifts in each range. And, just as Powermatic gets the truck up the hill with no strain, the new retarder gets it down. The retarder is a pedal device

(in the position of a clutch) which, when put into action, floods a transmission chamber to set up a reverse hydraulic force against an engine-driven impeller. Chevy says that this reverse-like braking effect is up to 6 times engine drag. It is expected that on most downgrades a driver using the retarder won't have to touch his service brakes at all. In addition, the new transmission has a lockup clutch which cuts in automatically at certain speeds to transfer the engine-transmission coupling from hydraulic converter force to mechanical drive. And, for the 1st time on an automatic transmission, Powermatic provides power take-offs for the operation of various accessories.



COMPARE THESE PRICES!

Your choice of open or closed face plate (please specify) v. 53-56 Buick 55-56 Cadillac l 49-56 Chrysler 56 Dodge 55 55-56 DeSoto 56 Lincoln 5 Chev. 53-56 Ford 49-56 Ply. 55-56 \$49.50

Chev. 49-52

Buick 54 Merc. 54

\$41.85

\$69.50

Dodge 56 Merc. 55-56 Olds. 54-56 Pont. 55-56 Stude. 55-56 \$59.50

Cadillac 54-55 Dodge 55 Lincoln 52-56 Merc. 52-53 \$79.50

Cadillac 50-53 Cadillac 56 Thunderbird 55 \$119.50

Tire ring in chrome, \$10 extra.
Write for information on ears not listed.
Specify make, yr., mod., size & if tubeless.
25% deposit required. FOB L.A. Postage
COD. Calif. residents add 3% sales tax.

California styling . . . rakish tilt of tire carrier is custom-designed for your car, as is every other part. Stylish wrap-around gravel shields. Heavy 20 gauge tire ring. Sturdy, rattle-free!

Easy to Install Yourself: Kit braces to frame. Tire carrier is factory pre-assembled. Stepby-step instructions.

NOT A "FALSIE"-ALL PARTS INCLUDED: splash pan, bumper extension brackets, allmetal tire cover, tire carrier assembly-everything but emblem. Prime coated.

MATERIAL AND WORKMANSHIP GUARANTEED NEW CATALOG OF CUSTOM ACCESSORIES -free with order or send just 25¢.





INSTALL PORTSMAN



THE ORIGINAL FIBERGLAS PACKED MUFFLER

Mufflers — Duals — Headers

QUALITY - TESTED AND ACCEPTED

Arnold Haviland Company

Defiance 22, Ohio

HOT ROD

"HOT RODDING AN MG" BY JOHN CHRISTY

"ROD TESTING THE '56 FORD"

ON SALE



manager. He soon boiled the line down to products more in keeping with the times, with one common V8 except for V-16s.

A peculiar paradox during this period was the LaSalle. Theoretically, it should have backfired on Cadillac the way Zephyr did on Lincoln and the 120 on Packard. However, this didn't happen because for some reason the public never associated LaSalle with Cadillac. It was dropped in 1940 when the 2 cars had literally merged.

GM could afford to make these mistakes because, even in their short periods of trouble, they have always had the vast amounts of capital necessary to manufacture and merchandise a complex piece of consumer goods, whether brand-new in concept or an extension of an old line. Anyone can start an applesauce business in his basement, even now. However, ask Edgar Kaiser or Preston Tucker how easy it is to bring to market a new automobile.

Constant improvement of the automobile is almost as difficult; at GM it is brought about by what Harlow Curtice calls "the application of the inquiring mind to research and engineering."

In 1923 the Cadillac Division developed and introduced the synchromesh transmission; in 1929 Alfred Sloan said, "We must remove the consciousness of the transmission and clutch from the driving habits of General Motors car owners." This was the touch-off of automatic transmission development at GM, with the 1st commercial semi-automatic product being pioneered by Oldsmobile in 1937, and the Hydra-Matic following shortly thereafter, in 1939. The progress in automatics since that time is an old story, except that it's not yet finished. The latest is Chevrolet's new "braking by reversing" Powermatic transmission (see page 50).

The Cadillac Division can probably take the credit for the prevailing dominance of V engines over all others. They introduced the 1st V8 built in this country in 1914, and from the Kettering 12to-1 research engine developed the present short-stroke, overhead-valve V8.

The approach of "the inquiring mind" has paid off in other improvement 1sts, some of which we all now take pretty much for granted: the self-starter (Cadillac, 1913), cellular-type radiators (1920), oil-less Durex bearings (1923), chrome plating (Oldsmobile, 1925), and a generator with controlled current to keep the battery fully charged for extra loads (Cadillac, 1934).

GM has also introduced such features as hydraulic valve lifters (Cadillac and Buick, 1949), tinted glass windshields (Buick, 1951), the possibility of gas turbines and sun-powered engines for future autos (1st announced in 1951), the Autronic Eye (1952), and air conditioning (Cad and Olds, 1952).

Alfred Sloan's contribution of managerial efficiency coupled with increased emphasis on engineering, as exemplified by succeeding presidents "Big" Bill Knudsen

and "Engine" Charley Wilson, left a (recognized) gap in automotive merchandising. Styling, GM and elsewhere, started with the advent of Harley Earl and his 1927 LaSalle. This was an essential part of merchandising, as most cars ran reasonably well by now, but the concept didn't become all-important until warnings of the approaching buyer's market became apparent in 1948, with waning interest in what were obviously warmed-over pre-war cars with minor facelifts.

It was then that Harley Earl got the goahead to create Le Sabre, a 2-year project and the 1st of a long line of show cars which may have been criticized in total but left an undeniable legacy of very salable details. True, Buick had its "Y" job in 1938 and Chrysler produced special custom built Thunderbolts in the early 1940s, but a wedding of styling and showmanship (who long before should have lived together, wedded or not) did not come publicly until the 1st dream-carstudded Motorama, premiered in New York in January, 1953. There were other Motoramas, before and after World War II, but the one in 1953 jelled the concept. Ever since, the whole industry has given sneak previews of what is to come thru dream cars, and thus whetted the appetite of nearly every member of the U.S. carbuying public.

Expansion of the Motorama idea, as well as all the other "'amas" including Power and Future, plus Parade of Progress, is just one weapon in super-salesman Curtice's book. It is an era of selling all one can produce, and "GM's Curtice" is doing a pretty good job as the records will show. Despite all this and the fact that he is man-of-the-year, he also has the problem-of-this-year and those immediately to come. He must prove that in business, bigness is not a sin. -Don MacDonald

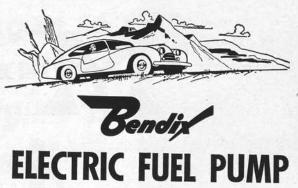
continued from page 24

'56 Dodge Road Test

wheel crossbar that developed very early. Servicing: The '56 Dodge should present no unusual servicing problems. Except for the usual accessory plumbing and shrouded carburetor, engine components are accessible, especially the sparkplugs. Unlike many new V8 engines, it won't require asbestos gloves, special wrenches, and the patience of Job to clean these plugs. They sit right out in the open, a tempting challenge to the "do it yourself" fan. With the 6, you can climb into the compartment alongside it, and still have room to work.

Summing up: Not satisfied to rest upon past laurels, Dodge for '56 has been improved mechanically and stylewise to meet the challenge of a highly competitive year. If style, comfort and driving ease are any portent of the future, this challenge should be met with flying colors. There are many features that make this an ideal family car.

—John Booth





For the very few who really want perfect performance!

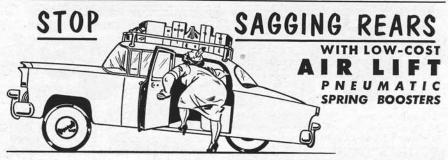
The average American car owner demands satisfactory performance from his car. With a modern American car, he's likely to get it with standard equipment. He is not a very likely prospect for a Bendix* Electric Fuel Pump. But the owner who insists that his engine deliver every last ounce of power

that was built into it is the fellow the Bendix Electric Fuel Pump was designed for. If you're one of those car owners who never stop striving for perfect engine performance, you need a Bendix Electric Fuel Pump. Once you've tried it, you'll never operate a car without it. (Write for illustrated folder.)

Sold in Canada by Bendix-Eclipse, Ltd., Windsor, Ont., Canada

ECLIPSE MACHINE ELMIRA N. Y.







Even new cars can get that "middle age spread" look! If you carry luggage, equipment, or even a full complement of adult passengers, your rear springs are screaming for help on any lengthy trip.

Air Lifts fit between the leaf springs and frame. They inflate with air - adjust with air - giving exactly the right amount of support for any overload up to one thousand pounds. When not overloading, simply deflate 'em and leave 'em in place. Super-simple to install and factory guaranteed. See your dealer or write for his name.

. . . illustrated, tip-packed literature or Air Lift remedies for sagging rears. Write department 53.

AIR LIFT COMPANY, Lansing, Michigan



In April MOTOR TREND on sale MARCH 15

Complete Details of

FIREBIRD II

When can you expect its features in your family car?

How to avoid the TRANSMISSION

REPAIR RACKET

ROAD TESTS OF

POPULAR U.S. CARS