PARADE OF 1954 CARS

Introduction by Leo Donovan, PM's Automotive Correspondent

THINGS to remember from 1953:

At long last, the end of the seller's market! At midyear, production was in full swing. Ford made a run for it, producing on a six-day-week schedule with overtime shifts. In some areas Ford began to catch up with Chevrolet sales in September, but the year's total was far below Chevrolet (see chart, page 160).

Competition returned and brought inflated allowances on trade ins and whopping discounts by dealers. The buyer began to get the breaks.

Experimental cars of tomorrow (the so-called dream cars) made their first widespread appearance as manufacturers found a new merchandising technique of introducing in such cars the future styling they couldn't yet incorporate in current models.

General Motors, Chrysler and Ford all came forward with such cars (which, except for the Chevrolet Corvette, you couldn't buy). Hudson joined up with its beautiful Italia. Packard showed the Balboa and Kaiser the DKF plastic convertible.

Mass production of the plastic-bodied Corvette was a milestone in the industry even though the quantity produced was microscopic by industry standards.

The multimillion-dollar fire in GM's Detroit transmission plant in suburban Livonia, Mich., was the most disastrous in industry history. It completely destroyed the only source of Hydra-Matic transmissions. But GM staged a miracle to get back into mass production in less than three months.

Price cuts began to appear in Kaiser, Chrysler, Dodge, DeSoto and Plymouth and in the fall-introduced 1954 Hudson and Nash lines.

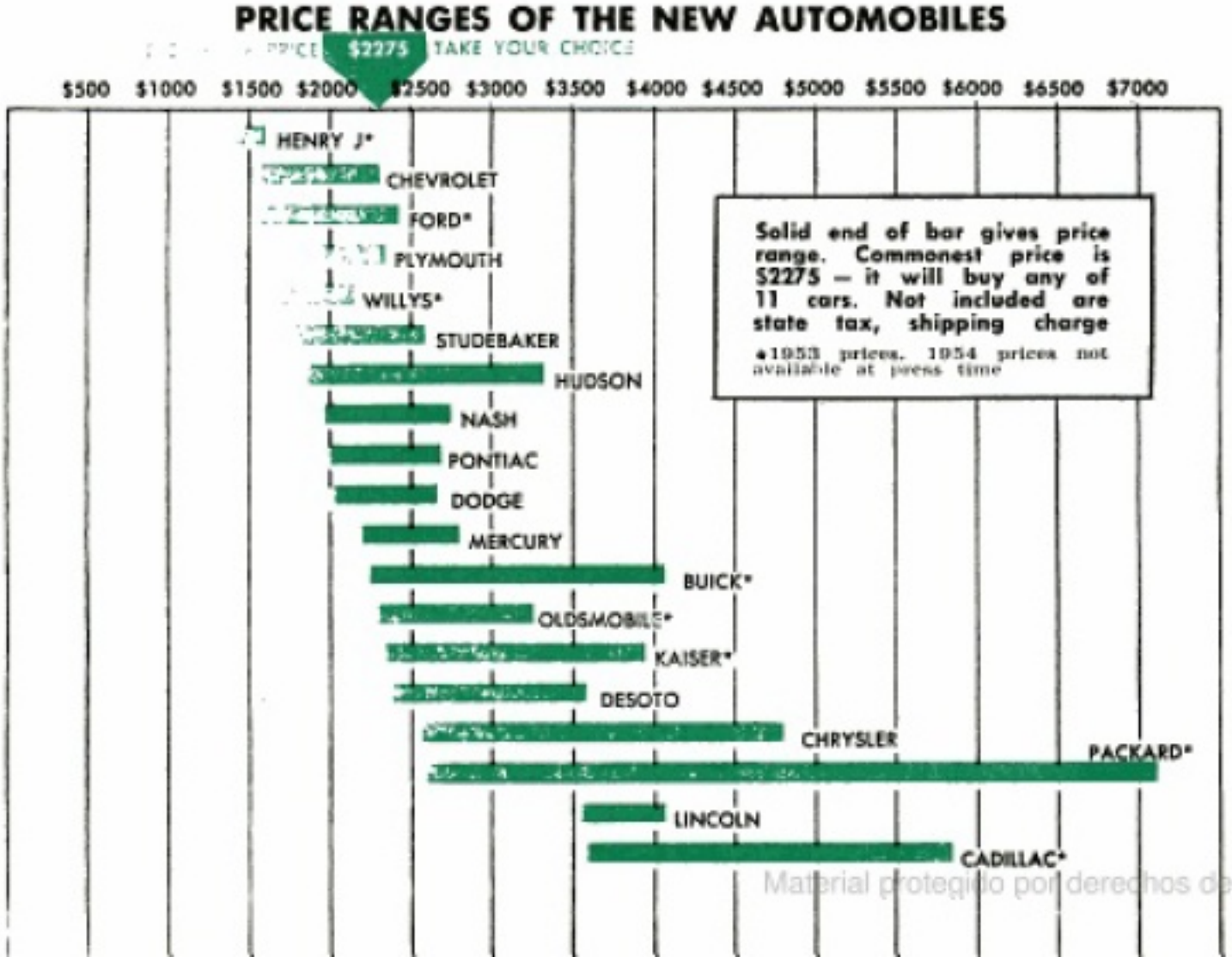
It was the second-highest production year in history, hitting a new high in wholesale value of its products—an estimated $11,440,000,000. Vehicle registrations soared to 54,745,000 in the country.

Kaiser-Frazer merged with Willys to become the Kaiser Motors Corp., and moved from Willow Run to Toledo, Ohio.

Garage mechanics, searching for space beneath the hoods of expensive cars with air-conditioning units, wondered how much more complicated their jobs could become. Some forward-looking mechanics began asking how the man in 1960 who buys a 1953 car (then seven years old) will be able to pay him the tremendous labor charges required to work in an engine compartment so cluttered with "extras" that it takes hours of labor just to uncover a cylinder head.

(Continued to page 306)

PRICE RANGES OF THE NEW AUTOMOBILES



BUICK

All-new bodies are featured by Buick. Riviera hardtop, above, sports full rear-fender wheel openings. Also new: V8 engine in Special, lower body, finlike rear fender, less chrome, wrap-around windshield, more horsepower, a Century series combining Roadmaster engine and Special chassis for top performance. Improved power brakes have an electric vacuum pump so you still have power assist when engine fails

CADILLAC

Cadillac also has a new body. Lower by 1½ inches, longer by 3½, the car has the panoramic windshield, accented but recognizable rear fins; extended headlamp visors and a lower hood. Exhaust ports in rear bumper are round. Interior room is greater. Power steering standard on all cars. Horsepower is now 230

Chevrolet has made slight style changes: New taillights, headlight rings, parking lights and bumpers. Powerglide transmission is now available on all models. With it comes a 125-horsepower engine. Handshift cars have 115 horsepower. Power accessories are: Power seat, windows, brakes and steering

CHEVROLET

CHRYSLER

Body lines are unchanged on the 1954 Chrysler, but under the hood the big V8 engine now has 235 horsepower. Bold horizontal bars give lower appearance to the car. Changed are grille, headlight trim, taillights and bumpers. PowerFlite automatic transmission has highest torque multiplication ratio in industry

DESOTO

Style changes, minor though they are, make the '54 DeSoto appear longer. Grille is less emphatic and slants forward, as does the bumper. Horsepower is now 170 in the V8 with 7.5:1 compression. Interiors are more lush and colorful. PowerFlite transmission is water cooled in the V8 model, air cooled in the six

New is Dodge's Royal V8—a super-de luxe series. All Dodges have greater over-all length, lower and more massive grille and new chrome moldings. Interiors are new also. Top of dash has textured paint to eliminate sun reflection. Horsepower on the V8 engine is 150, compression ratio 7.5:1. The six develops 110 hp.

DODGE

FORD

Big news at Ford is its new V8 engine (see page 161). Bodies have only slight changes. Extended headlights and redesigned grille are most obvious. Ball-joint front suspension improves steering and roadability. the '54 Six has a larger bore and horsepower is 115. V8 horsepower is 130. Both have 7.2:1 compression

HUDSON

Rear fenders on the 1954 Hudsons go straight back to triangular taillights. The lower hood has a big, functional air scoop. Front grille is simplified. Most powerful Hudson is the Twin-H Hornet with its 170 horsepower. The Jet has a new two-door model and all Jets now have an extra two inches rear legroom

KAISER

Not yet announced, the 1954 Kaiser is expected to have additional horsepower. Basic bodies will be the same, but with new fenders, windows and front grille. Advance reports also state that the 1954 Henry J will be virtually unchanged

Biggest styling change in Lincoln is a front bumper with three vertical bars that form an air intake. Vacuum-controlled four-barrel carburetor assures extra power when needed without unnecessary gasoline consumption. Other changes: Magnetic fuel-pump filter, 12-inch brake drums, improved hydraulic tappets

LINCOLN

MERCURY

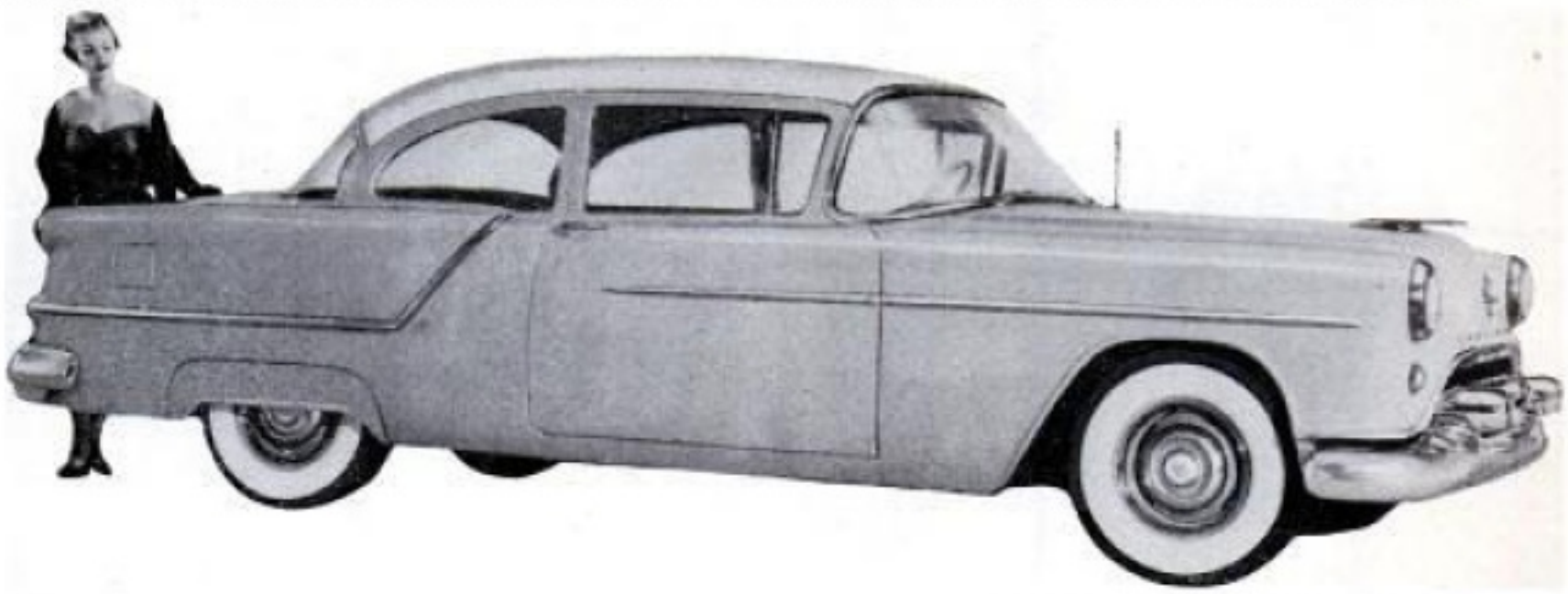
As with Ford, the big news at Mercury is under the hood—an all-new, overhead-valve V8 (see page 161 for details). It puts out 161 horsepower. Also new are ball-joint front suspension, a stronger frame and, stylewise, a longer rear fender that extends over the taillight, new front grille and brightwork

NASH

Continental spare tire is standard on many 1954 Nash models. Style changes are few. The grille is concave. Statesman has dual-carburetor, aluminum head, 110-horsepower engine with 8.5:1 compression. Ambassador has 130 horsepower (140 optional). Rambler has a four-door sedan on 108-inch wheelbase for first time

OLDSMOBILE

Another all-new body is Oldsmobile's. Longer and lower, it has little chrome decoration. All fenders are higher, hood flatter; wrap-around windshields on all models. Engine has more displacement and horsepower is now up to 185. Compression ratio is 8.25:1. Redesigned power brakes retain vacuum if engine dies



PACKARD

With new rear fenders that merge into the taillights, the Clipper series gets individual styling to distinguish it from the big Packard. New this year is the Clipper Panama hardtop. The big Packard straight-eight engine has a nine-main-bearing crankshaft, an 8.7:1 compression ratio and develops 212 horsepower

PLYMOUTH

Plymouth has new model names this year: Belvedere (the most de luxe), Savoy and Plaza. Basic bodies are unchanged, but extensive trim redesigning makes the cars look longer and more luxurious. Over-all, they are 3½ inches longer. Grille, headlights and taillights are new. Interiors feature colorful fabrics

Pontiac's grille is oval in design and the chrome stripes on hood are more widely separated. Padded instrument panels and a mechanical four-way front seat are new for '54. Also new is the Star Chief (not shown) with 127 horsepower, a 124-inch wheelbase and 11 inches more over-all length than other Pontiacs

PONTIAC

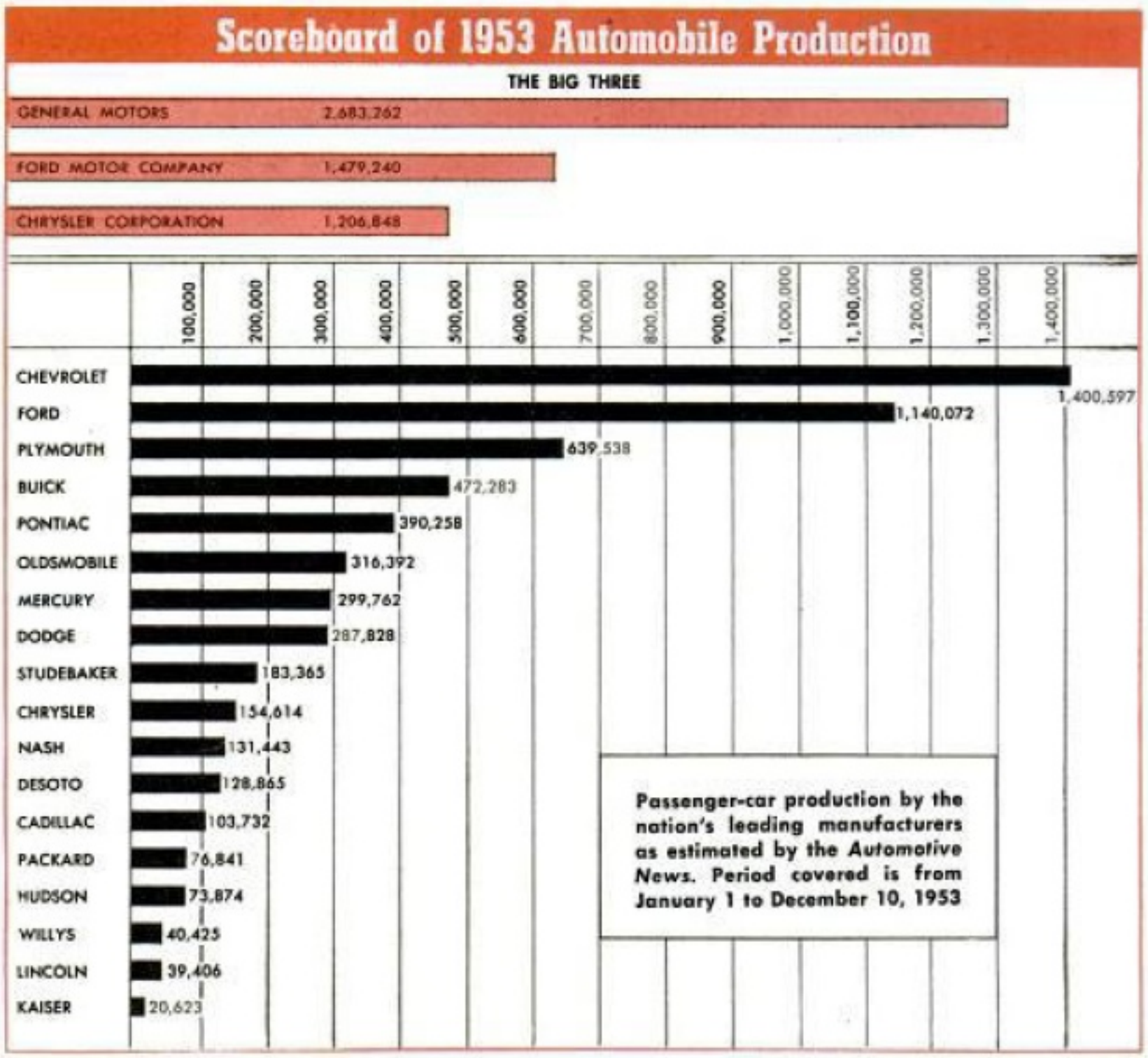
STUDEBAKER

Continuing the sleek design of last year, Studebaker emphasizes colorful interiors, a new grille and bigger bumper guards. Increased compression (7.5:1) on all models improves performance. Brakes are larger. Low-gear start on Champion's automatic transmission increases pickup. New this year is a station wagon

WILLYS

The 1954 models had not been released at press time. Advance information is that there will be important engine changes, but only minor body restyling

Scoreboard of 1953 Automobile Production

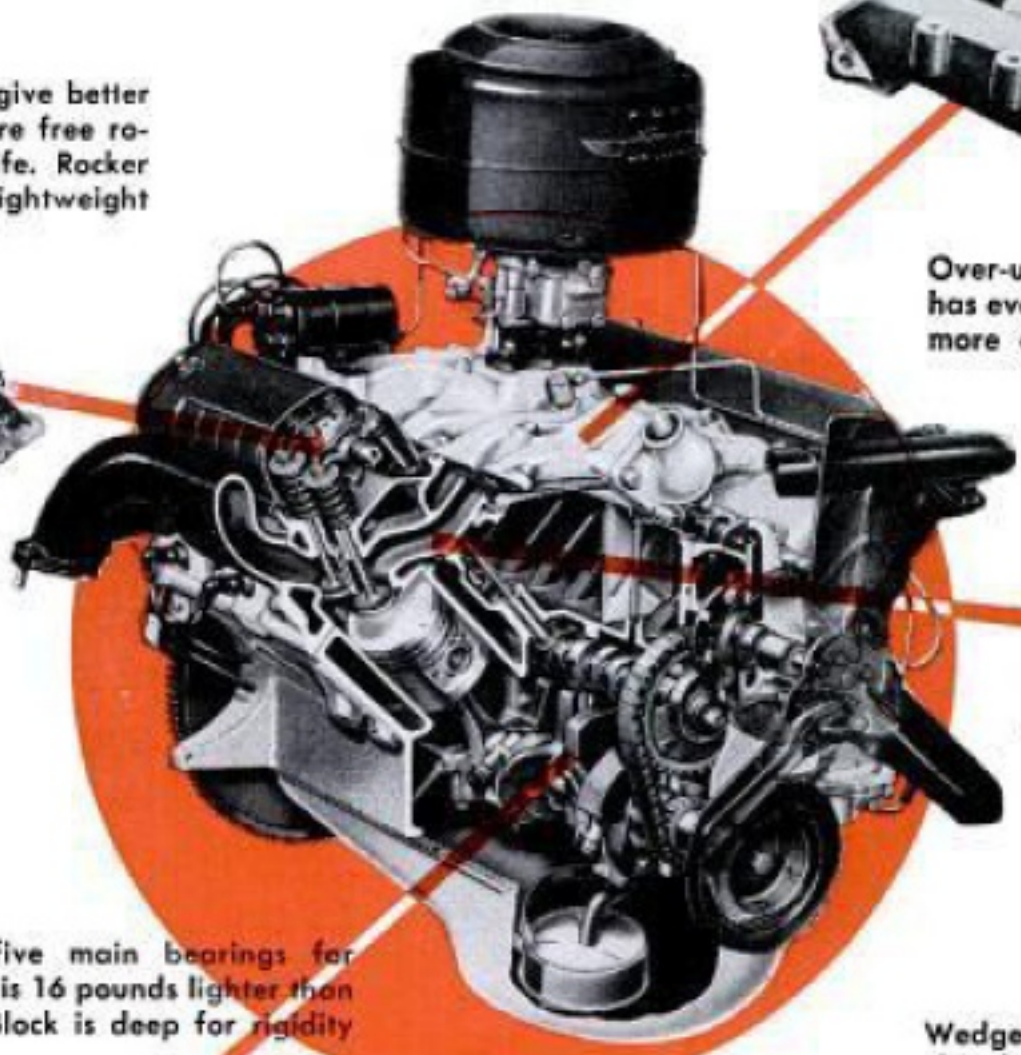


FORD GETS AN ALL-NEW V8

IN 1932 FORD introduced its first V8. Since that time, it has built and sold 16,000,000 such engines—a world's production record. Now, after six years of tests with 640 experimental engines, Ford offers an all-new 130-horsepower V8—the first major change in its basic engine since 1932.

Overhead valves give better breathing. They are free rotating for long life. Rocker arms are short, lightweight

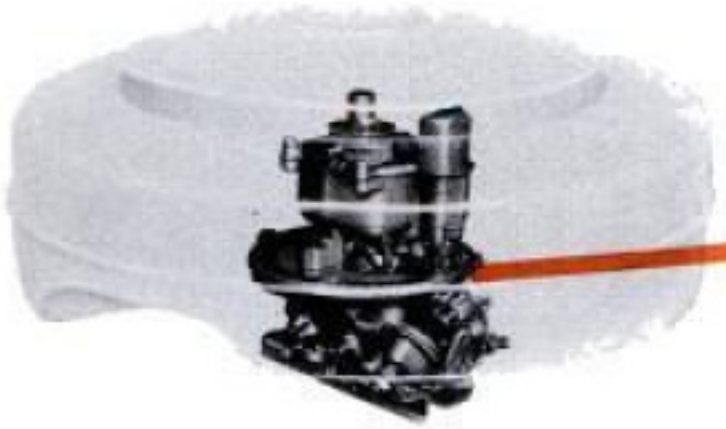
Over-under intake manifold has even-length passages for more even fuel distribution

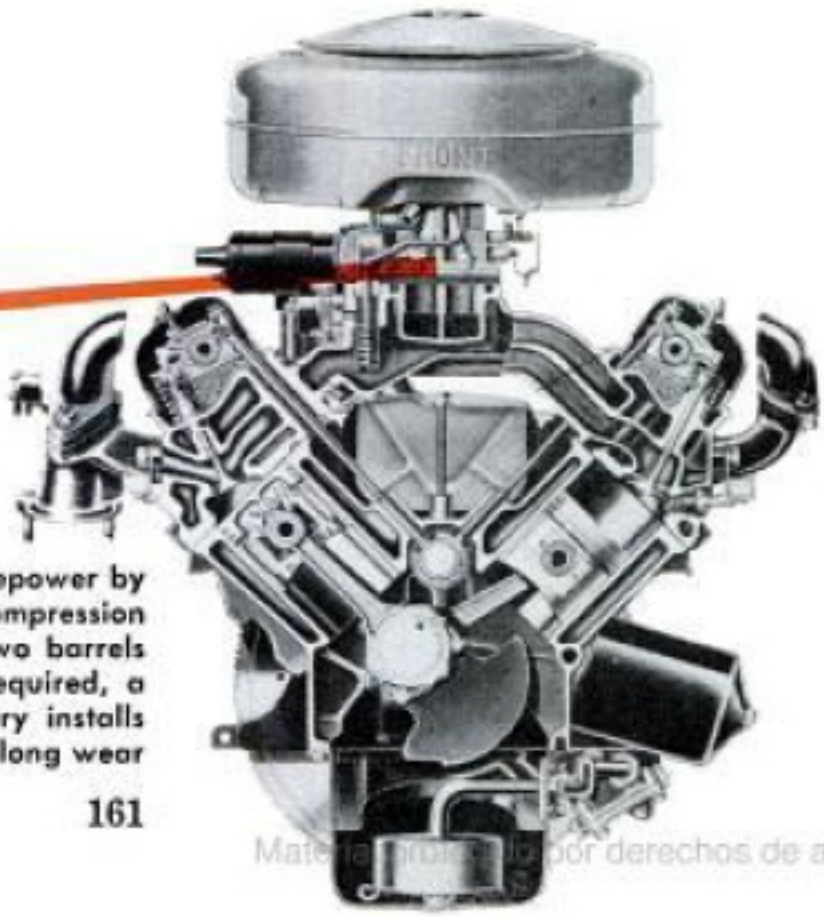


Crankshaft has five main bearings for greater rigidity. It is 16 pounds lighter than previous design. Block is deep for rigidity

Wedge-shaped combustion chambers give high turbulence. Compression is 7.2 : 1

And Mercury Does Too





Mercury has the same basic engine, but gets 161 horsepower by an increased bore for more displacement, a higher compression (7.5:1) and a four-barrel carburetor (above). Only two barrels operate in normal driving. When extra power is required, a vacuum control opens the secondary venturis. Mercury installs chrome-plated top compression rings on its pistons for long wear

SPECIFICATIONS OF THE 1954 CARS

	PRICE 4-DOOR SEDAN	SHIPPING WEIGHT	WHEELBASE	DIMENSIONS: OVER-ALL LENGTH	OVER-ALL WIDTH	■ FRONT-SEAT HIPROOM	■ REAR-SEAT HIPROOM	■ FRONT-SEAT HEIGHT	■ FRONT LEGROOM	■ REAR LEGROOM	STEERING: OVER-ALL RATIO	TURN-CIRCLE DIAMETER	ENGINE: DISPLACEMENT	BRAKE HORSEPOWER AT R.P.M.	BORE AND STROKE	COMPRESSION RATIO	TORQUE RATING AT R.P.M.
CHEVROLET				●	●	●	●		●	●		●					
Hand shift	$1680	3210	115.0	196	75	60	61	13.5	43	41	23.1	38	235.5	115 at 3700	3.56x3.94	7.5	200 at 2000
Powerglide	1857	3335	115.0	196	75	60	61	13.5	43	41	23.1	38	235.5	125 at 4000	3.56x3.94	7.5	200 at 2000
FORD																	
Six	N.A.	3155*	115.5	198	74	59	59	13.0	43	42	25.3	41	223.0	115 at 3900	3.62x3.60	7.2	193 at 2100
V8	N.A.	3276*	115.5	198	74	59	59	13.0	43	42	25.3	41	239.0	130 at 4200	3.50x3.10	7.2	214 at 2000
PLYMOUTH																	
Six	$1765	3036	114.0	194	74	60	59	14.4	44	44	21.1	39	217.8	100 at 3600	3.25x4.38	7.1	177 at 1600
STUDEBAKER																	
Champion 6	$1801	2765	116.5	199	70	60	57	13.0	43	40	19.0	39	169.6	85 at 4000	3.00x4.00	7.5	138 at 2400
Commander V8	2179	3105	116.5	199	70	60	57	13.0	44	40	20.0	39	232.6	120 at 4000	3.38x3.25	7.5	190 at 2000
Land Cruiser V8	2438	3180	120.5	203	70	60	59	13.0	43	41	20.0	41	232.6	120 at 4000	3.38x3.25	7.5	190 at 2000
HUDSON																	
Jet 6	$1858	2675	105.0	181	67	58	58	13.3	42	40	20.0	40	202.0	104 at 4000	3.00x4.75	7.5	158 at 1400
Wasp 6	2256	3440	119.9	202	78	64	64	12.1	43	38	20.2	41	232.0	126 at 4400	3.56x3.88	7.0	178 at 2400
Super Wasp 6	2465	3525	119.9	202	78	64	64	12.1	43	38	20.2	41	262.0	140 at 4000	3.56x4.38	7.0	214 at 1600
Hornet 6	2768	3620	123.9	209	78	64	64	12.1	43	38	25.6	42	308.0	160 at 3800	3.81x4.50	7.5	264 at 1800
NASH																	
Rambler 6	$1995♦	2650	108.0	193	74	60	60	12.0	44	40	19.5	42	195.6	90 at 3800	3.13x4.25	7.3	150 at 1600
Statesman 6	2178	3045	114.3	202	78	65	65	12.3	43	40	24.0	45	195.6	110 at 4000	3.13x4.25	8.5	155 at 2000
Ambassador 6	2595	3430	121.3	209	78	65	65	12.3	43	40	25.5	46	252.6	130 at 3700	3.50x4.38	7.6	220 at 1600
PONTIAC																	
Chieftain 6	$2027	3381	122.0	203	77	60	61	13.9	43	43	25.1	41	239.2	115 at 3800	3.56x4.00	7.0	193 at 2000
Chieftain 8	2102	3456	122.0	203	77	60	61	13.9	43	43	25.1	41	268.4	122 at 3800	3.38x3.75	6.8	226 at 2200
Star Chief 8	2301		124.0	214	77	60	61	13.9	43	43	25.1	43	268.4	127 at 3800†	3.38x3.75	7.7†	234 at 2200†

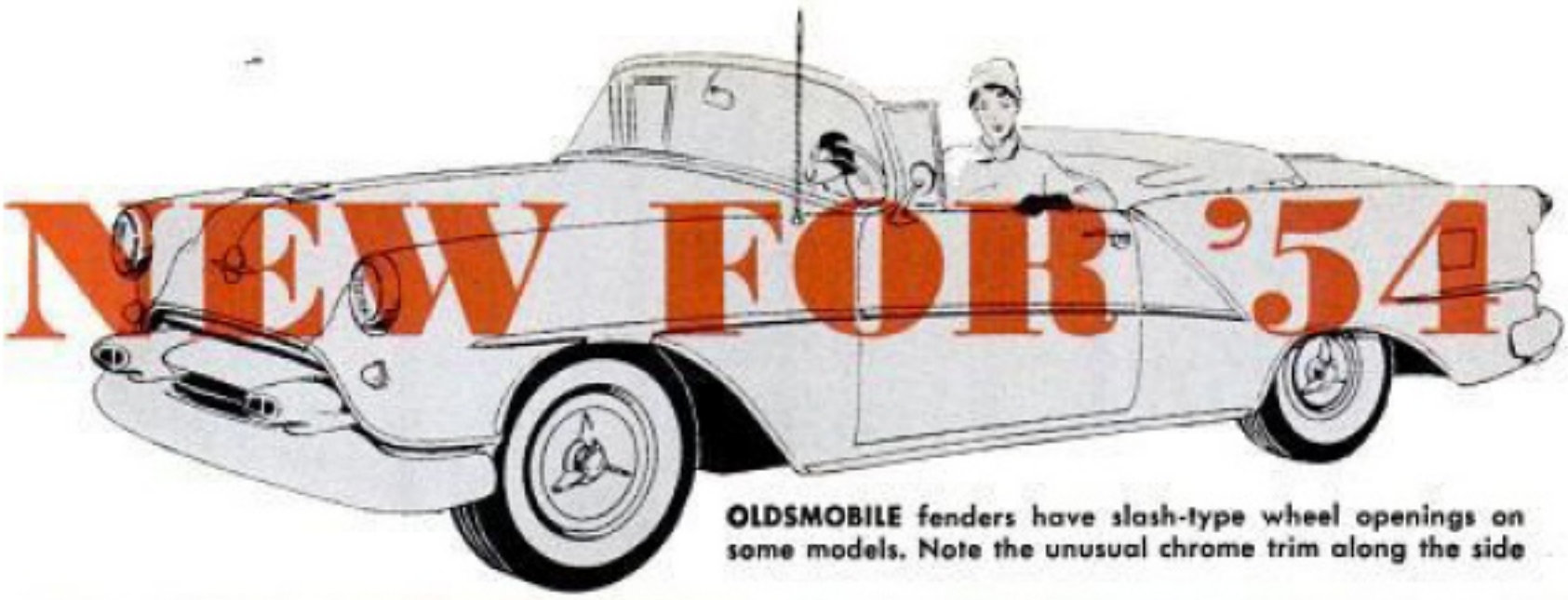
DODGE																
Six	$2024	3235	119.0	206	74	61	61	14.3	44	41	21.1	41	230.2	110 at 3600	3.25x4.63	7.3	190 at 1600
V8	2244	3425	119.0	206	74	61	61	14.3	44	41	22.2	41	241.3	150 at 4400	3.44x3.25	7.5	222 at 2400
MERCURY																	
V8	$2251	3450	118.0	206	74	59	59	13.0	43	42	25.4	41	256.0	161 at 4400	3.62x3.10	7.5	238 at 2500
BUICK																	
Special V8	N.A.	3714‡	122.0	206	77	62	63	12.8	43	42	26.7	41	264.0	143 at 4200	3.63x3.20	7.2	228 at 2400
Century V8	N.A.	3786‡	122.0	206	77	62	63	12.8	43	41	26.7	41	322.0	195 at 4100	4.00x3.20	8.0	302 at 2400
Super V8	N.A.	4020‡	127.0	217	80	65	66	13.5	43	44	26.7	43	322.0	177 at 4100	4.00x3.20	8.0	295 at 2400
Roadmaster V8	N.A.	4212‡	127.0	217	80	65	66	13.5	44	44	24.1▲	43	322.0	200 at 4100	4.00x3.20	8.5	309 at 2400
OLDSMOBILE																	
88 V8	N.A.	3692‡	122.0	205	78	62	62	13.2	43	44	27.5	43	324.0	170 at 4000	3.88x3.44	8.3	300 at 2000
Super 88 V8	N.A.	3734‡	122.0	205	78	62	62	13.2	43	44	27.5	43	324.0	185 at 4000	3.88x3.44	8.3	300 at 2000
98 V8	N.A.	3846‡	126.0	214	78	62	62	13.1	43	44	27.5	43	324.0	185 at 4000	3.88x3.44	8.3	300 at 2000
DESOTO																	
Six	$2385	3590	125.5	215	78	62	60	14.9	44	42	23.0	42	250.6	116 at 3600	3.44x4.50	7.0	208 at 1600
V8	2673	3750	125.5	215	78	62	60	14.9	44	42	25.8	42	276.1	170 at 4400	3.63x3.34	7.5	255 at 2400
CHRYSLER																	
Windsor 6	$2562	3685	125.5	216	78	62	60	14.6	44	42	25.8	42	265.0	119 at 3600	3.44x4.75	7.0	218 at 1600
New Yorker V8	3228	3955	125.5	216	78	62	60	14.6	44	42	25.8	42	331.1	195 at 4400	3.81x3.63	7.5	320 at 2000
New Yorker Deluxe V8	3433	4060	125.5	216	78	62	60	14.6	44	42	25.8	42	331.1	235 at 4400	3.81x3.63	7.5	330 at 2600
Custom Imperial V8	4259	4345	133.5	224	78	60	60	14.3	45	46	25.8	N.A.	331.1	235 at 4400	3.81x3.63	7.5	330 at 2600
PACKARD																	
Clipper Deluxe 8	N.A.	N.A.	122.0	215	78	63	62	14.0	44	44	27.3	43	327.0	165 at 3600	3.50x4.25	8.0	295 at 2200
Cavalier 8	N.A.	N.A.	127.0	216	78	63	62	14.0	44	48	30.9	45	327.0	185 at 4000	3.50x4.25	8.0	310 at 2200
Patrician 8	N.A.	N.A.	127.0	216	78	63	62	14.0	44	48	30.9	45	359.0	212 at 4000	3.56x4.50	8.7	330 at 2200
LINCOLN																	
Cosmopolitan V8	$3522	4135	123.0	215	77	62	62	13.5	44	43	26.1	46	317.0	205 at 4200	3.80x3.50	8.0	305 at 2600
CADILLAC																	
Series 62 V8	N.A.	N.A.	129.0	216	80	64	65	14.8	43	46	21.5▲	47‡	331.0	230 at 4400	3.81x3.63	8.3	332 at 2800
Series 60 V8	N.A.	N.A.	133.0	227	80	64	65	14.8	43	46	21.5▲	49‡	331.0	230 at 4400	3.81x3.63	8.3	332 at 2800
Series 75 V8	N.A.	N.A.	150.0	237	80	64	59	14.6	43	N.A.	21.5▲	54‡	331.0	230 at 4400	3.81x3.63	8.3	332 at 2800

● Dimensions in this column rounded out to nearest whole number. ■ See diagram at right.
N.A. Not available at press time. * Approximate. ♦ Price includes radio, heater and cigar lighter. † HydraMatic models only.
‡ Estimated. ▲ Power steering standard equipment.

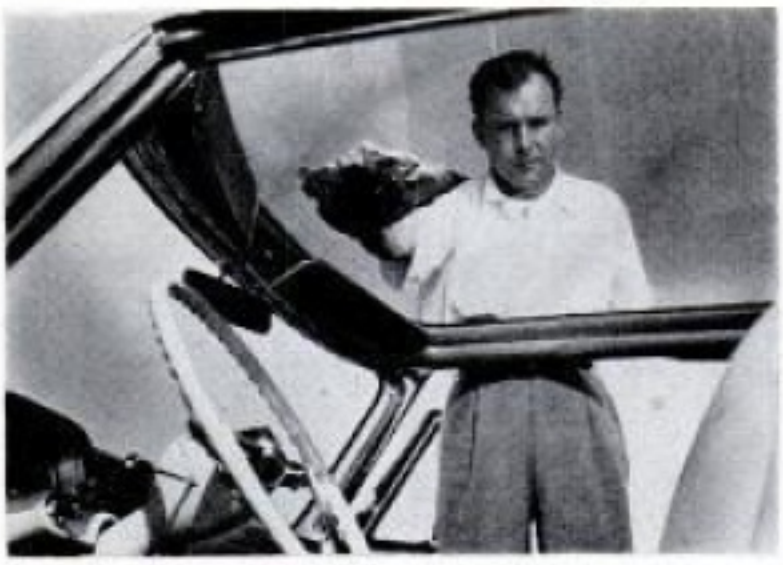
A — Front-seat height
B — Legroom
C — Hiproom

Specifications are for four-door sedans. Measurements are in inches except: Weight (pounds); turn-circle diameter (feet); torque (pound feet). Prices are for lowest-price four-door sedan in each series and include all charges except shipping, state and local taxes, and optional equipment. Specifications of 1954 Willys, Henry J and Kaiser not available at press time.

NEW FOR '54

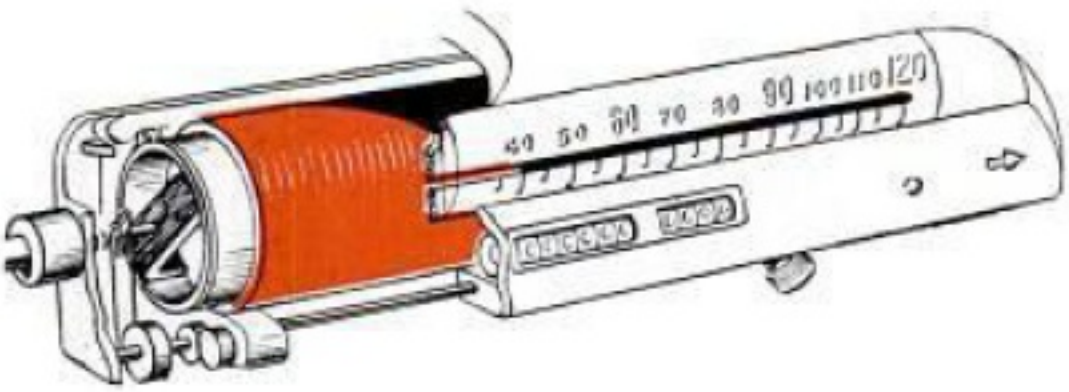


OLDSMOBILE fenders have slash-type wheel openings on some models. Note the unusual chrome trim along the side



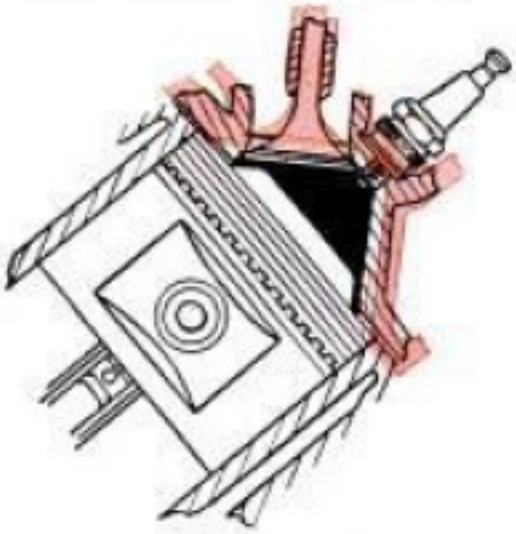
MERCURY has a hardtop with a transparent-plastic roof section. The Ford Skyliner has the same feature

STUDEBAKER added vertical bars to its grille, bumper guards and hood ornament are bigger this year



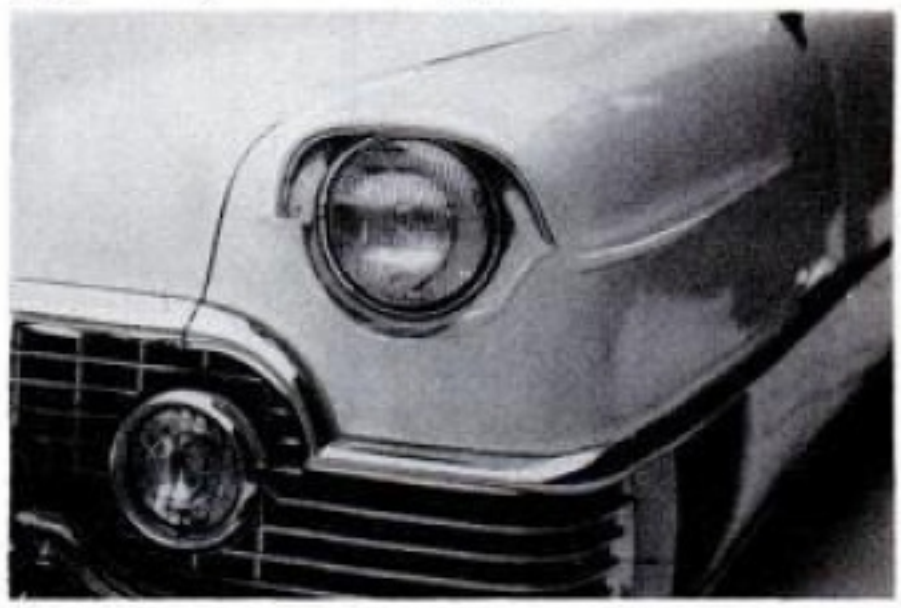
BUICK Roadmaster speedometer reads like a thermometer. Cutaway shows red advancing as drum turns

NASH Rambler has a four-door sedan for first time. Its front seat swings down to make a comfortable bed



BUICK also redesigned its combustion chamber to add power. Red sketch shows 1953 design for comparison

CADILLAC has enlarged the "eyelid" over its headlight, forming it with the top part of the fender

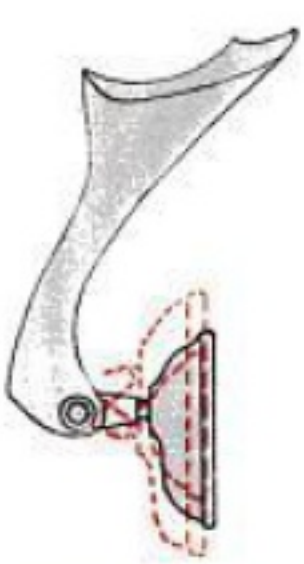


DESOTO has an instrument panel made up of perfect circles. Each instrument has a separate dial face for maximum clarity and visibility

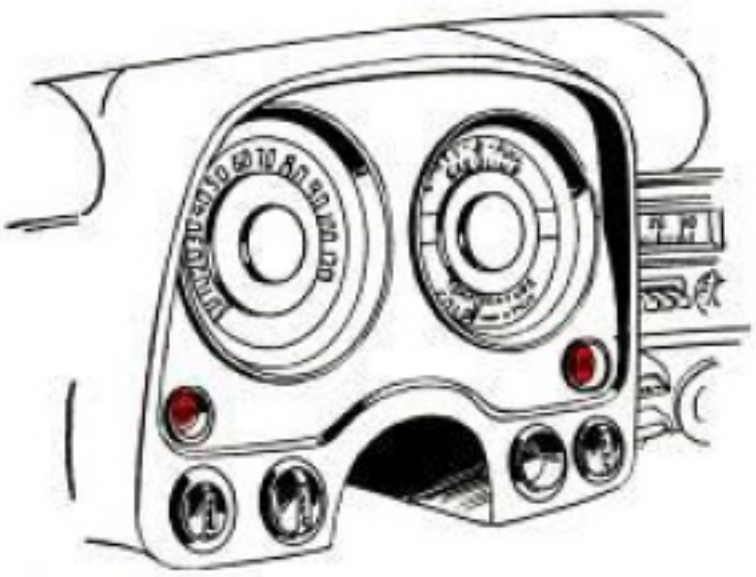
MERCURY extended its rear fenders over the top of the taillight unit

LINCOLN increased brake-drum diameter to 12 inches (1953's was 11), reducing braking effort 25 percent

HUDSON Jet has a removable rear seat. With it out, trunk divider wall drops to make huge loading area



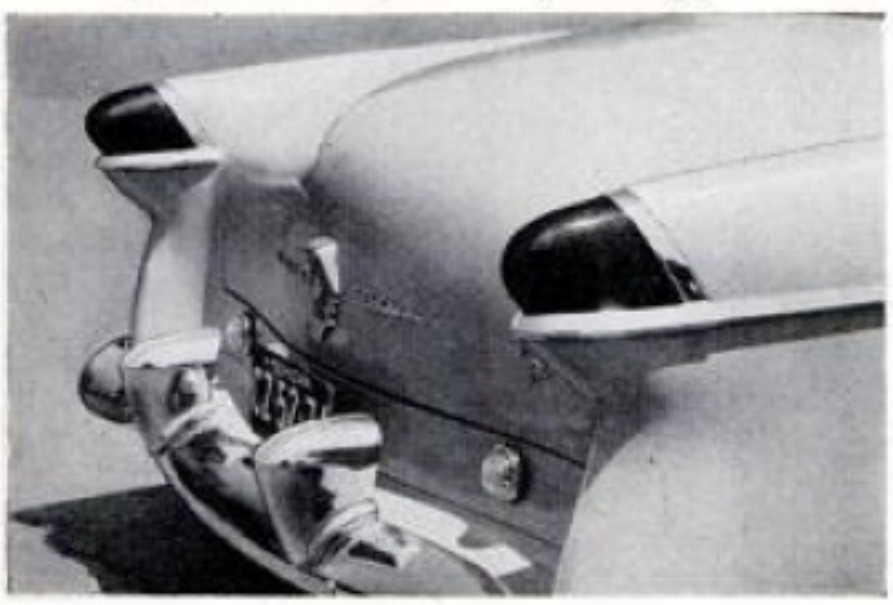
PLYMOUTH's rear-view mirror adjusts vertically



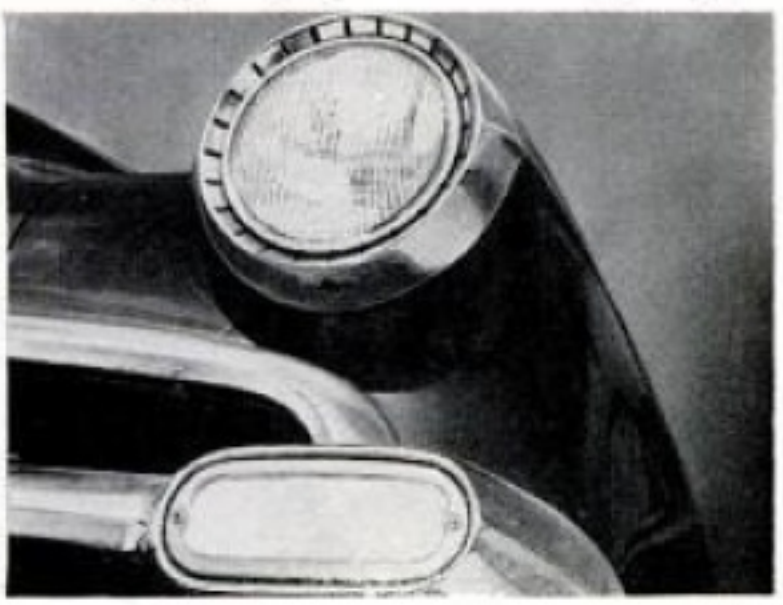
CHRYSLER also has a new instrument panel. Indicator lights (red) show oil pressure, amperage

CHEVROLET's new 125-hp. engine has high-lift cams

PACKARD Clipper introduces a new rear-fender styling with taillights that jut sharply rearward



CHEVROLET headlights have a novel chrome ring. The oblong parking light is on outer edge of grille

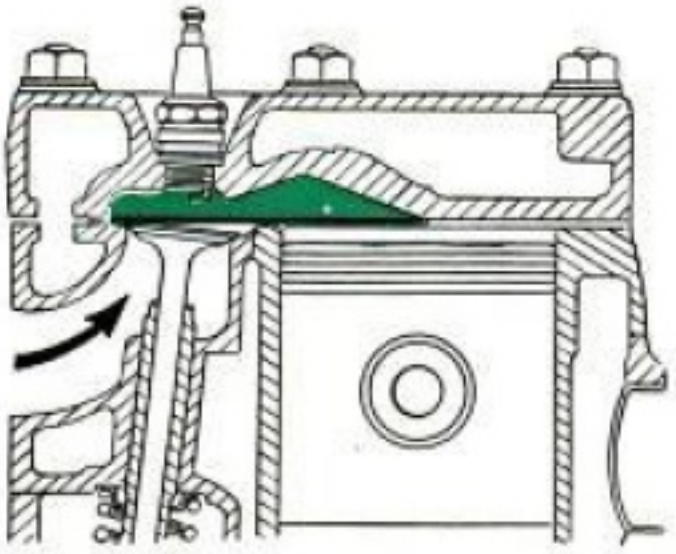


NEW FOR '54

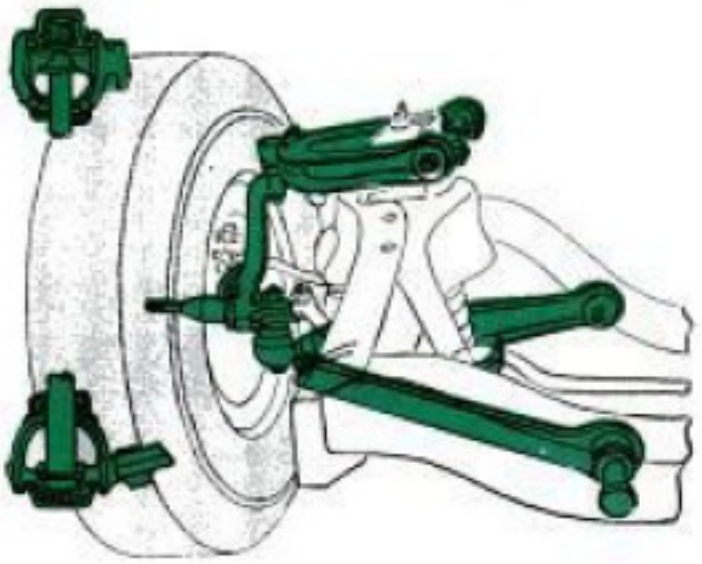
PONTIAC drivers can adjust their seat up or down, tilt it forward or backward. It is manual, not motorized

CADILLAC has a narrow chrome visor over its wrap-around windshield below which is the heater intake

FORD has a raised speedometer with a plastic top through which daylight enters to brighten numerals

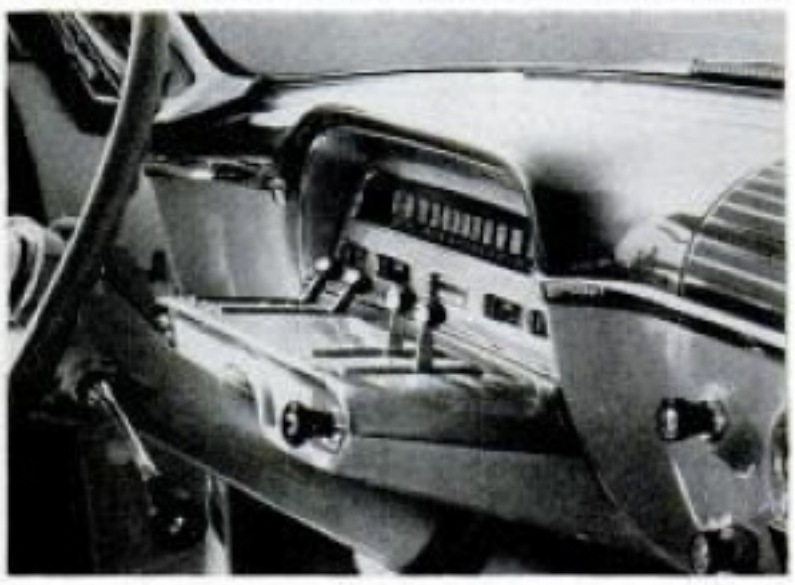


PACKARD redesigned the combustion chamber in its big straight 8 to boost its output to 212 horsepower



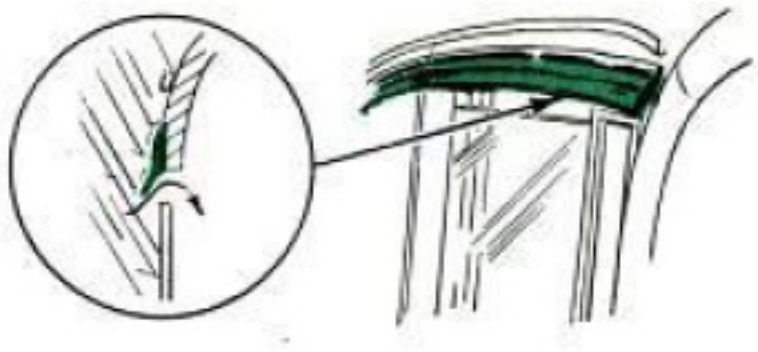
FORD has ball-joint front suspension which eliminates conventional kingpin, improves ride and steering

MERCURY retained the lever-type heater controls in its new dash that has more instrument visibility

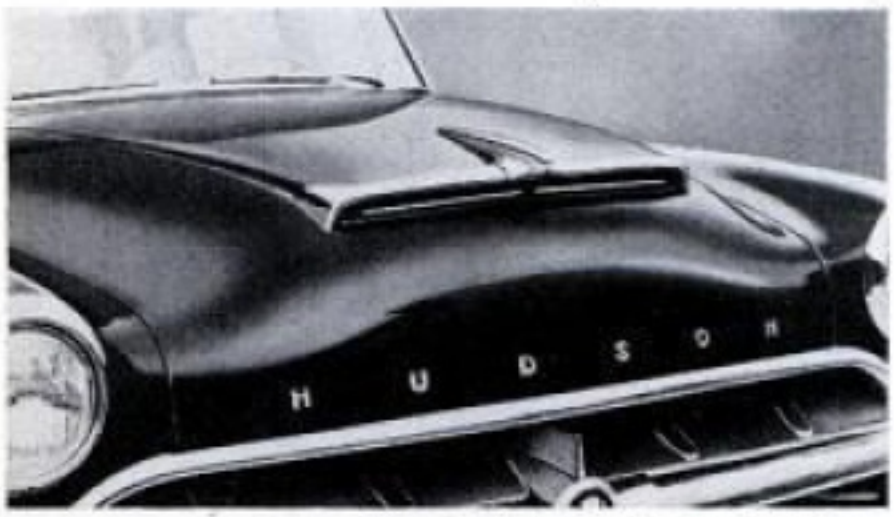


PLYMOUTH's low-priced Plaza has a handsome two-spoke wheel. All models have nonreflecting dash panel

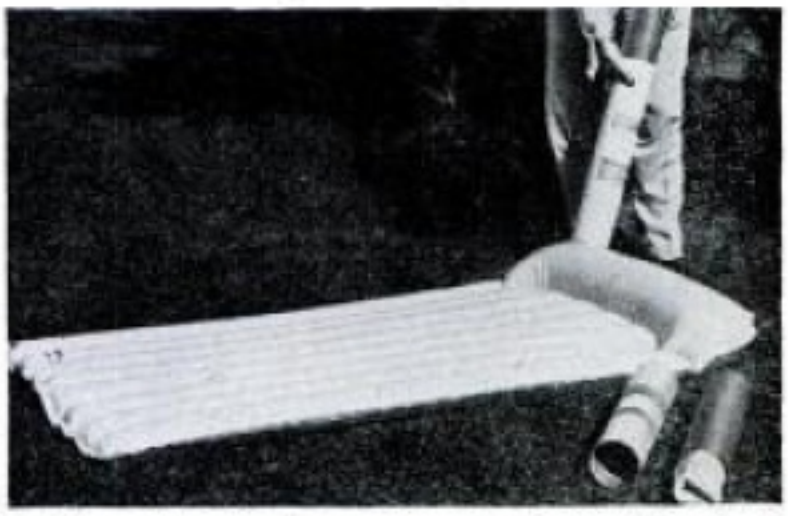
BUICK front corner pillars are vertical (left) on Super and Roadmaster, slanted on Special and Century



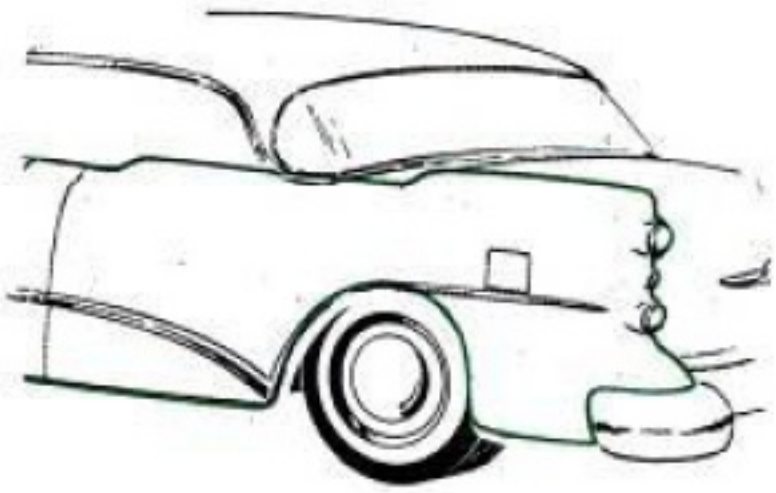
BUICK has a wide chrome molding above doors. It serves as an awning and keeps rain out of windows



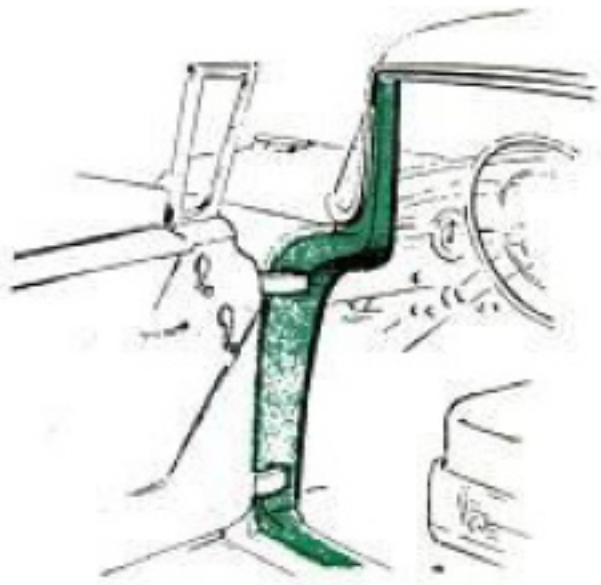
HUDSON lowered its hood and added a broad air scoop that admits air into top of engine compartment



NASH owners can buy a mattress for car bed. Cardboard container becomes a pump to inflate it easily



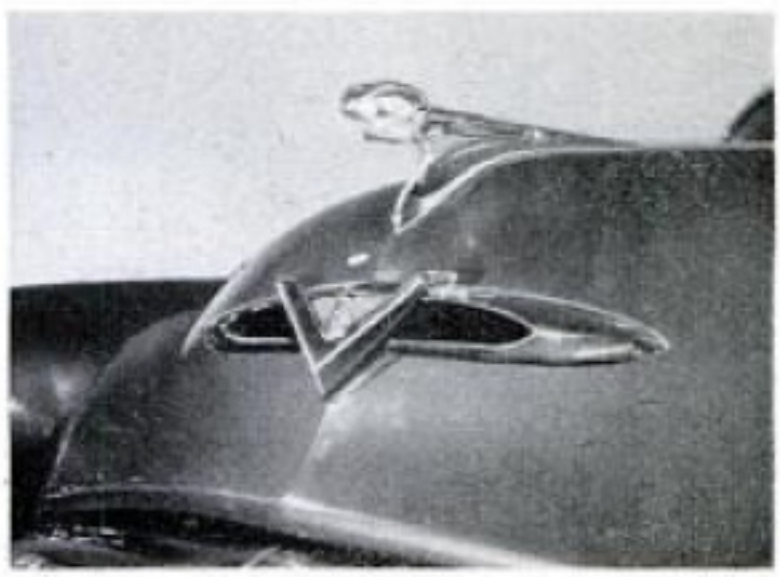
BUICK has a double "kick up" on its rear fenders. On hardtop models the wheels are entirely uncovered



OLDSMOBILE doors have "notched" leading edge that increases opening size, making it easier to get in

HUDSON lengthened its rear fenders and put taillights in them. Backup lights are just above bumper

DODGE clipped the horns of its ram hood ornament to make it streamlined. Trim on hood vent is larger



STYLING


13%


49%


38%

STEERING WHEELS: The horn ring seems here to stay with only 13% of the owners not wanting any at all


51%


24%


25%

WHEEL OPENINGS: It is surprising to note that so many owners would like full openings in front and rear


27%


59%


14%

HOOD ORNAMENTS: The ornate swan appealed to very few; less than one percent wanted no ornament at all


63%

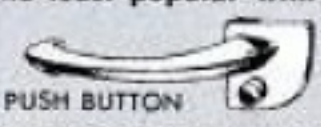

21%


16%

FRONT GRILLES: Surprising result here was that the most ornate grille was the least popular with owners

8%

24%

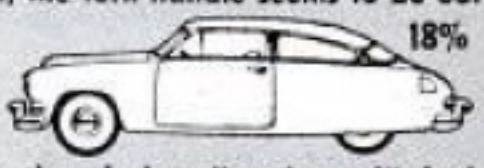


68%

DOOR HANDLES: There's no doubt about the popularity of the push button; the turn handle seems to be out


38%


44%


18%

OVER-ALL SILHOUETTES: Owners still prefer the squared-box outline to the sleeker "continental" look


47%


40%


13%

FRONT-FENDERS: The extended front headlight, common on 1954 cars, is favored by owners, the poll shows


25%

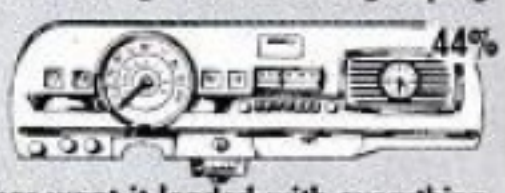

13%


62%

TAILLIGHTS: There is no doubt among owners about taillights: they want them large and in one grouping


47%


9%


44%

DASHBOARDS: Few owners want the simple, uncluttered dash; a large number want it loaded with everything

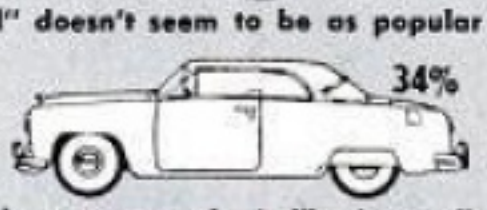

57%


23%


20%

REAR FENDERS: The upturned "fishtail" doesn't seem to be as popular as a simpler design, the poll shows


13%


34%


53%

CHROME: Owners are definite about chrome; many don't like it at all, most want it used with moderation

HERE IS THE BALLOT

HERE IS THE RESULT

Owners Turn Designers in This

REPORT TO DETROIT

A Nationwide Survey of What Car Owners Want

Is Detroit making the kind of automobile the public wants? To find out, Popular Mechanics *asked 5000 owners of all makes what they want in a car. This is their reply.*

By Floyd Clymer

LISTEN, DETROIT, the public is talking about your product—the American automobile. This article was written by the men and women who own and drive automobiles — all makes and styles of automobiles.

Popular Mechanics asked 5000 owners what they think about the cars Detroit is building. Their responses brought out some amazing points.

Apparently, the manufacturers and the owners don't agree on some important matters. For example, the owners don't want more horsepower! Yet there is hardly a 1954 model on display today that isn't bragging about its increased power.

The survey shows that 70 percent of the owners were emphatically against continuing "the trend toward greater horsepower." Only 19 percent —less than one in five— approved of the trend. The other 11 percent were noncommittal.

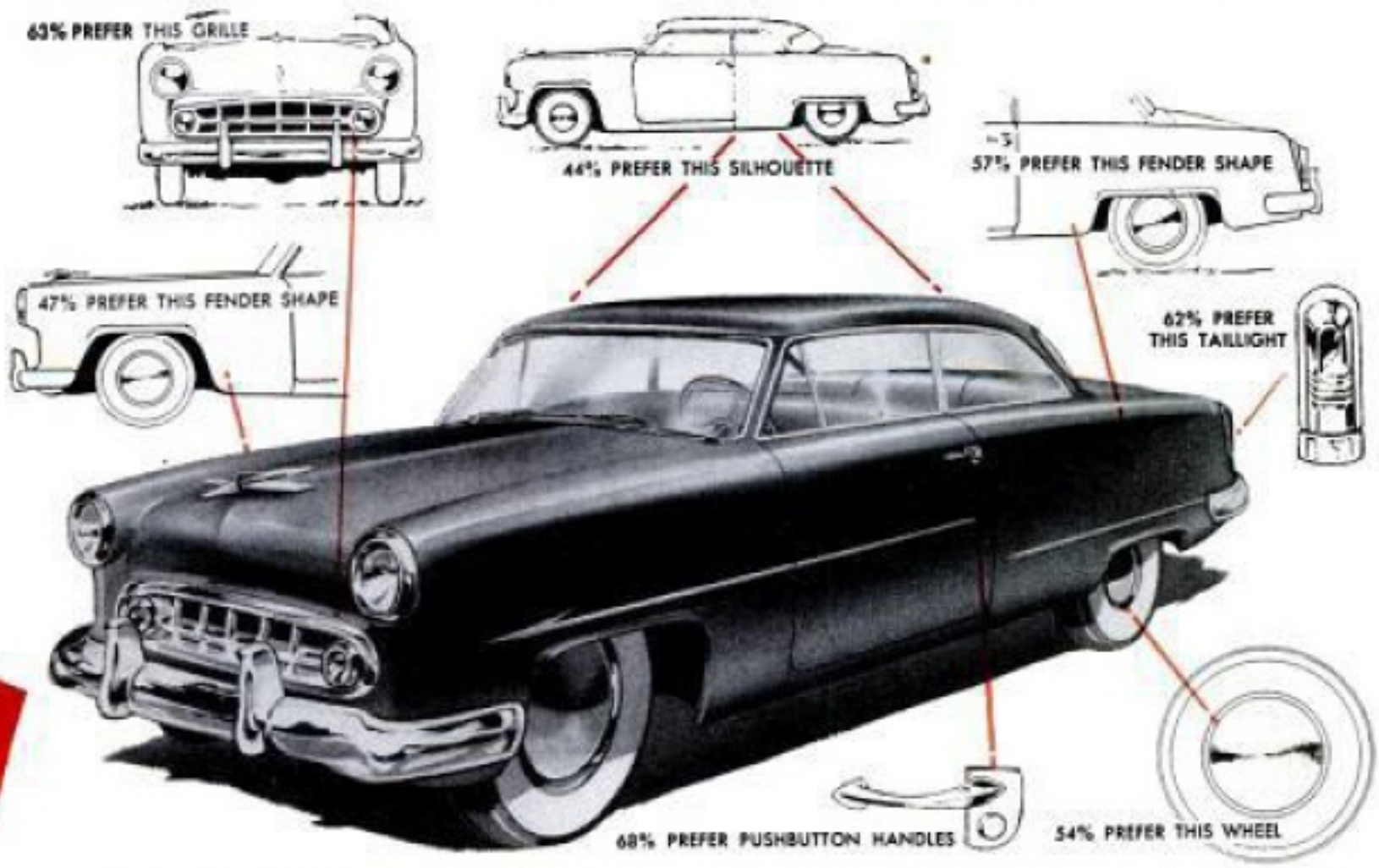
"I believe they have gone too far overboard with this horsepower race. Cars are too powerful to be safe these days." —Jonesboro, Ark., coach.

"I do not agree with the race for more horsepower. The human element in drivers certainly cannot safely handle the speed which the high horsepower produces."—Portland, Ore., engineer.

"Pure nonsense. If a person wants horsepower he should drive a truck. Performance, in my estimation, does not depend upon horsepower." — Casper, Wyo., oil worker.

"It's suicidal. We are all too brave behind the wheel."—Barrington, Ill., advertising director.

Here is the composite automobile that American motorists "designed" for themselves—its body features combined by our artist from the choices marked on the style ballots (opposite page) sent to 5000 car owners



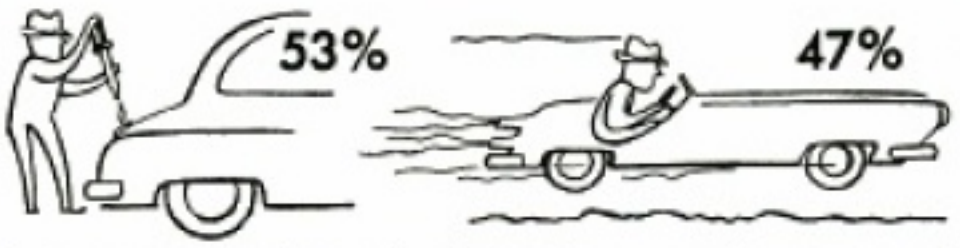
WHO IS THE AVERAGE OWNER?

He drives 15,480 miles a year, takes four long trips averaging 1200 miles each. His car is fully loaded only 20% of the time.

He buys a new car every three years. The most frequently given reason for trading is the mechanical condition of his old car. Only 1 owner in 10 trades because his old car is "out of style."

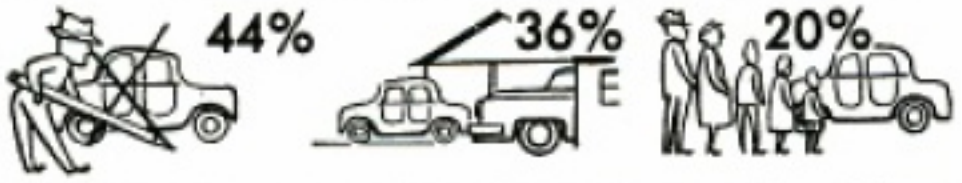
He would like the car manufacturers to stop the horsepower race and to put additional emphasis on building safety into his car

WHAT DOES HE WANT IN A NEW CAR?



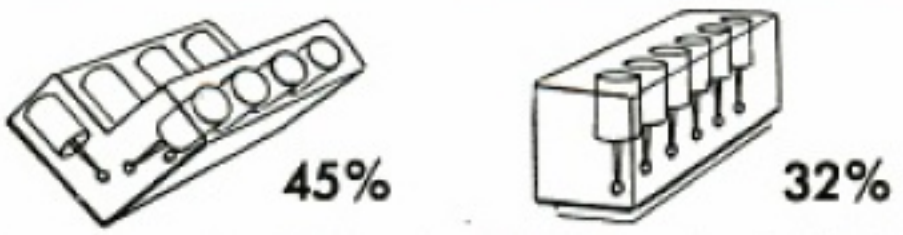
53% say economy of operation is more important than power and performance, but 47% put performance first in selecting a car

76% want comfort first, styling second. Only 24% are willing to sacrifice comfort for style or appearance, the poll shows

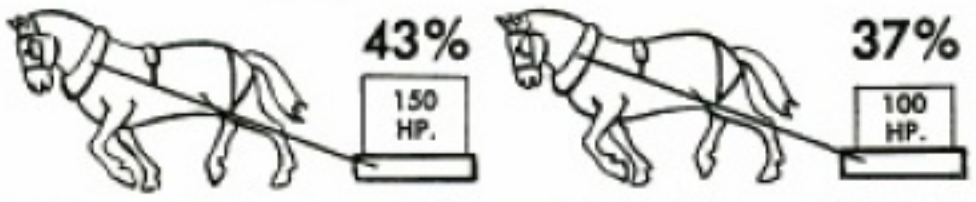


Would the average owner buy a basic car (one without frills or luxuries) for $1000? 44% said they would not. 36% would buy it as a "second" car. Only 20% would buy it for use as a family car

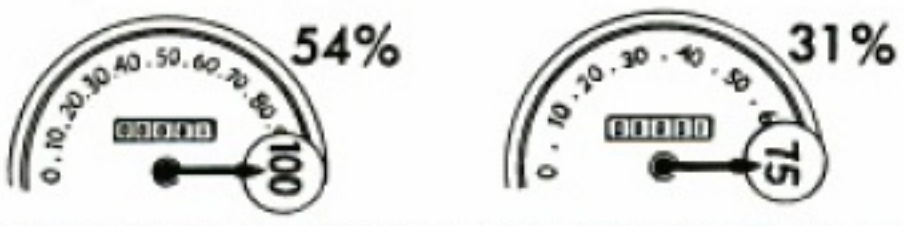
WHAT WOULD HE LIKE IN AN ENGINE?



Preferences in engines: 45% want a V8; 32% want a straight 6; 13% want a straight 8; 8% want a V6; and 2% want 4 cylinders



Preferences in horsepower: 43% want 150; 37% want 100; 12% want 200; 4% want only 60; and there are 4% who want over 200



Top speeds: 54% want 100; 31% want 75; 13% want 125; 2%, 60

"Asinine. Greater horsepower serves only to tempt fools to step on it."—Lewiston, Idaho, employment manager.

There were many, many equally emphatic statements that Detroit has gone far enough in the horsepower race and should be doing more about safety. That feeling among car owners was apparent from the responses to the question: "If you could make one suggestion (disregarding price cuts) to the men who design and build American automobiles, what would it be?"

By a wide margin the most frequently given suggestion asked for more safety rather than more power. In fact, a number of owners even asked that maximum-speed controls be built into the cars at the factory to protect themselves against their own bad driving habits. Here are some of the changes the owners want: Stronger roof structure, including roll-over bars; lower horsepower; governors or some type of speed control; better brakes and vision; and better handling and roadability.

There is no doubt that if owners have to choose between speed and safety, they will take safety—that is the most emphatic finding in our nationwide survey.

And yet when it comes to seat belts, the owners seem to take a different viewpoint. Only 14 percent of the owners said they would wear seat belts at all times if such belts were provided as original equipment in their cars. A surprising 45 percent said they wouldn't wear the belts at all, even if car manufacturers provided them. The other 41 percent said they would wear them during high-speed driving only.

There are points where the owners agree wholeheartedly with Detroit, and current body styling is one of them. A high 69 percent are pleased with the trends in styling today, while only 16 percent disapprove. The others made no statement for or against.

As the percentages on the styling ballot (reproduced on page 168) show, generally, the owners prefer the middle-of-the-road design. No extreme or radical innovations for them. The com-

posite car (page 169), based on the owners' selections, is certainly not revolutionary in styling. Its basic shape is similar to that of millions of cars on the road today. Apparently Detroit is providing the public with what it wants in the styling department, although there are a few interesting upsets as will be noted in the percentages.

The majority also likes the trend toward power accessories. More than half, 53 percent to be exact, said one or more of the power accessories, such as brakes, steering, seats and windows, was worth its cost. Disagreeing were 29 percent, with 18 percent registering no opinion.

"Power steering and power brakes should be standard equipment." — Klamath Falls, Ore., school supervisor.

"Power accessories mean greater safety and convenience for feminine drivers." — Poughkeepsie, N. Y., engineer.

"For town driving, power steering is all right. I don't like it on the open road."—Springfield, Mo., policeman.

"Power steering is especially bad if used to cover up or camouflage defects in weight distribution or faulty steering-gear geometry."—Cedar Grove, N. J., engineer.

"I do not approve of power steering. A sudden swerve may cause the car to turn over."—writes an Alton, Ill., service-station operator.

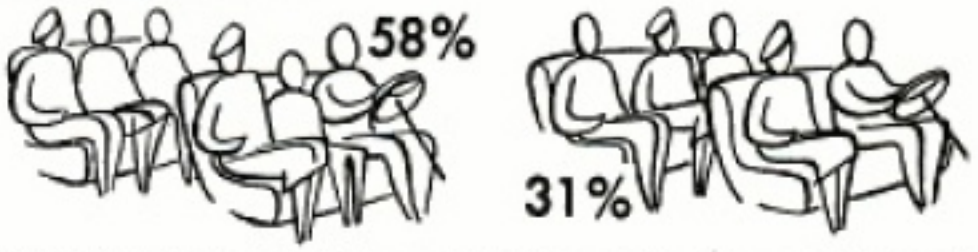
"If they keep up with these power accessories the fun of driving will be gone."—North Stratford, N. H., mill worker.

It looks as though Detroit is right in assuming that America has outgrown the "basic transportation" market. Despite the oft-heard remark that what this country needs is a $1000 automobile, only 20 percent of the owners said they would buy a $1000 vehicle as their family car, if it was a basic car without luxuries or conveniences. Another 36 percent, however, would be interested in it as a second car. The remaining 44 percent would not buy it at all, apparently preferring to spend more for the luxury and comfort to which we

(Continued to page 294)

WHAT ELSE DOES HE WANT?

How many seats?



58% want 6 seats; 31% want 5; 6% want 4; 3% want 8; 2%, 3

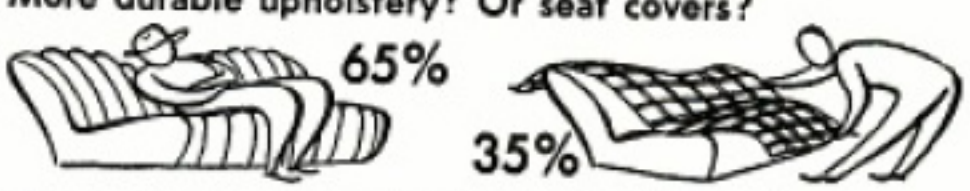
How long a wheelbase?

115 and 125 inch are most popular; 6% want 130; 5% want 100

Would he wear a seat belt?

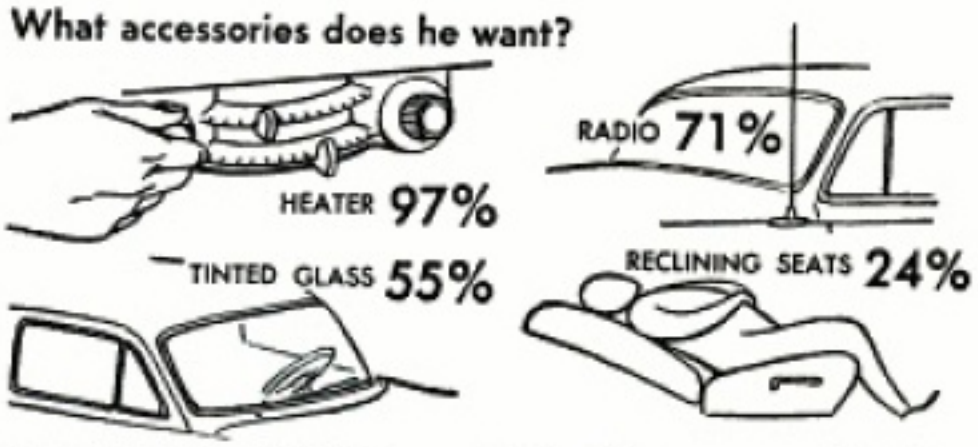
45% would not; 14% would all the time; 41% would at high speeds

More durable upholstery? Or seat covers?



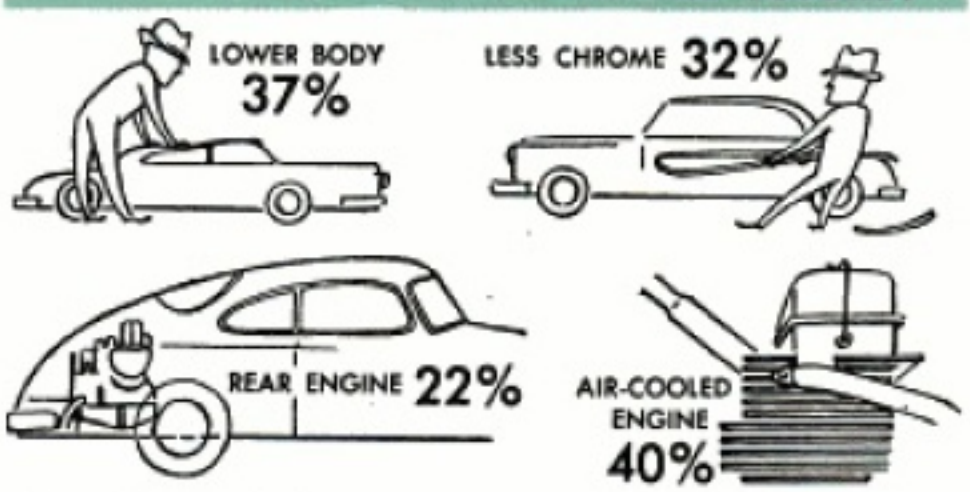
65% would pay extra for plastic or leather; 35% prefer seat covers

What accessories does he want?



Also: Automatic shift 50%; power brakes 33%; power steering 22%; headlight dimmer 14%; air conditioner 6%; and power windows 5%

WHAT DOES HE WANT IN THE FUTURE?



Other changes: 16% of owners want shorter bodies; 9% want front-wheel drive; 12% want longer bodies; 9% want more chrome

AUSTIN offers a new two-door sedan, left. It is just over 11 feet long, four feet less than the shortest U.S. car, and is built for economy. Its engine is an overhead-valve four

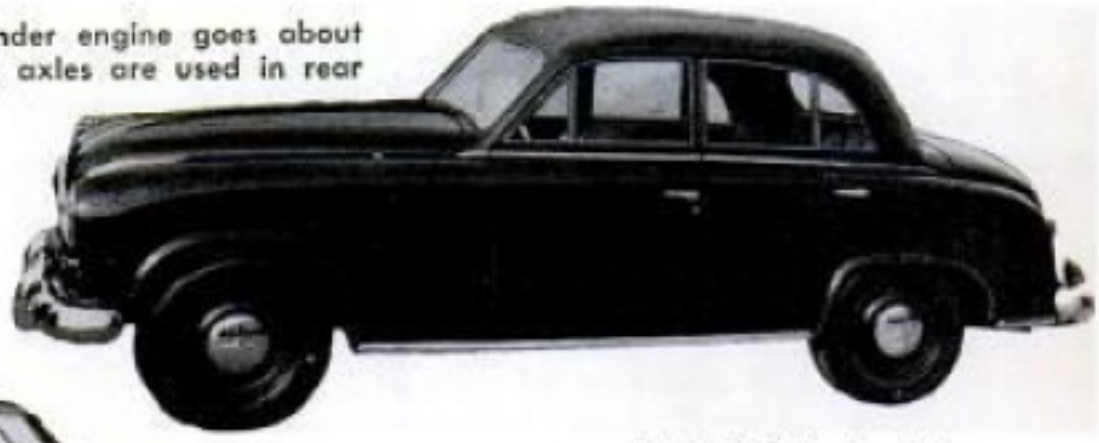
FORD introduces a new Anglia in England for '54, below. It has 4 cylinders, unitized body, gas tank in rear fender

STANDARD'S new economy model is a four seater, above. It has a large trunk accessible from the rear seat. It too has four cylinders

A TRANS-ATLANTIC VIEW OF

EUROPE'S 1954 MODELS

HANSA DIESEL is German. Its four-cylinder engine goes about 40 miles per gallon of diesel oil. Swing axles are used in rear

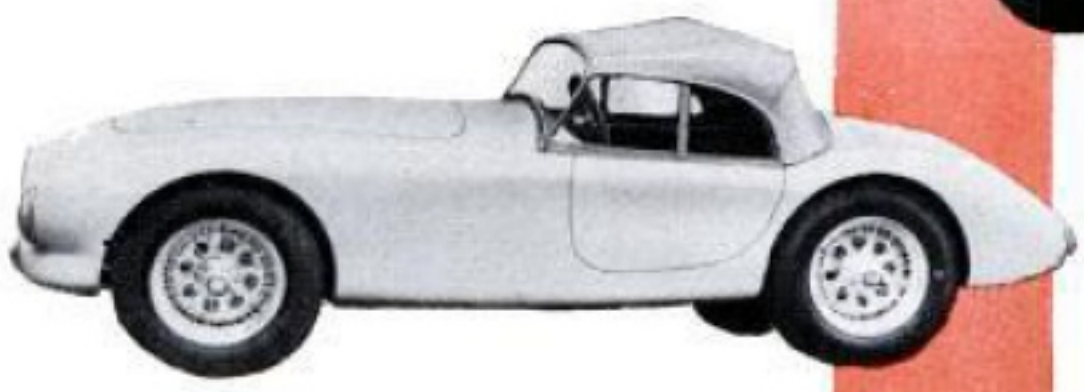


LAGONDA, below, is among the world's most advanced cars, with independent suspension on four wheels, inboard rear brake drums, built-in jacks and an entirely flat floor. It has six cylinders

RILEY Pathfinder, below, seats six, has four cylinders, two camshafts, hemispherical combustion chambers, a torsion-bar front-suspension system

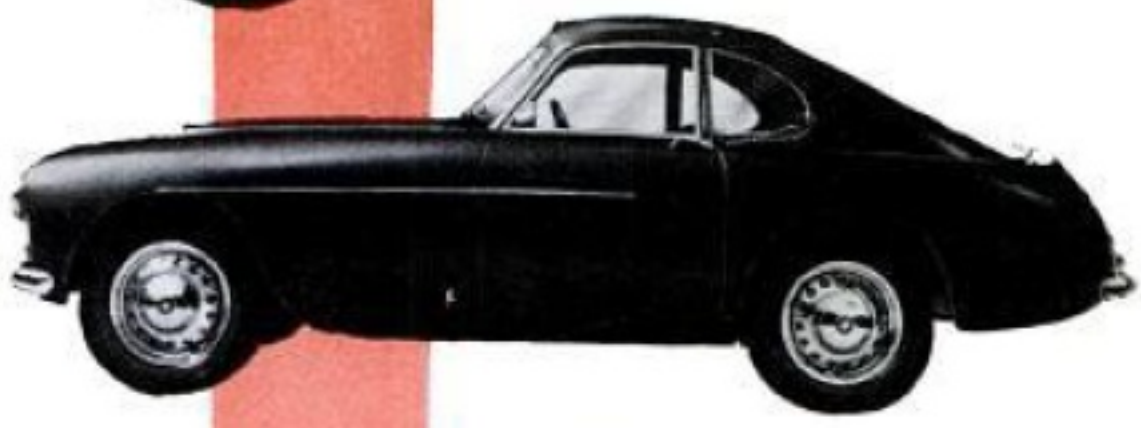
ALVIS Grey Lady, left, is a 100-mile-per-hour sedan with a high-compression, overhead-valve "square" engine and a seven-bearing crankshaft

DAIMLER Conquest roadster, right, has aluminum-alloy frame and body. Other features include twin carburetors, air scoops in front and rear fenders to keep the brakes cool, and torsion-bar front-wheel suspension



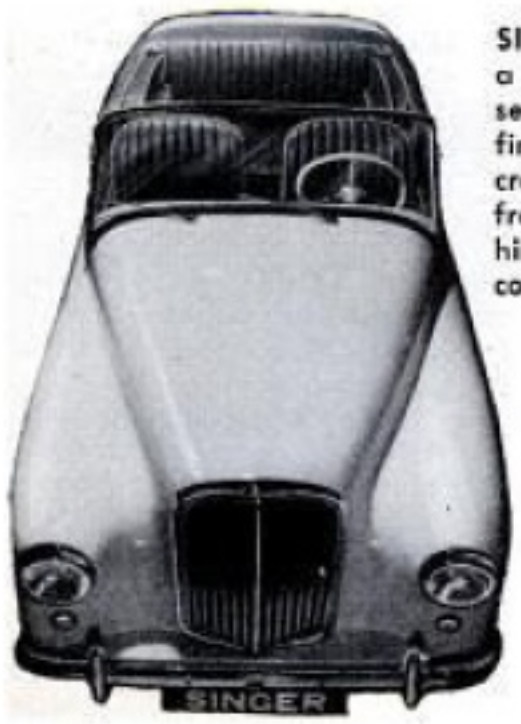
A.C. ACE, left, is a speedy two-seater that easily hits 100 m.p.h. Engine is an overhead-camshaft six with three carburetors. Frame is formed of two straight steel tubes. All wheels are independently sprung

BRISTOL 404, right, has carefully designed aerodynamic body shape. Rear springing is by torsion bars, front by leaf springs. Brakes are exceptional with light alloy drums. Car will easily exceed 100 miles per hour



JOWETT Jupiter, left, a competition two-seater has four horizontally opposed cylinders, an 8.5:1 compression ratio. Engine fan is driven by thermostat-controlled electric motor for perfect cooling at every speed

ASTON MARTIN DB2-4, right, is a fast, 110-mile-per-hour touring car. Its inline six has twin overhead camshafts, inclined valves, hemispherical combustion chambers. Rear window opens for access to luggage space



SINGER is making a plastic-bodied 4-seater. Luxuriously finished, it is a rich cream plastic. Entire front body section hinges up to uncover the engine

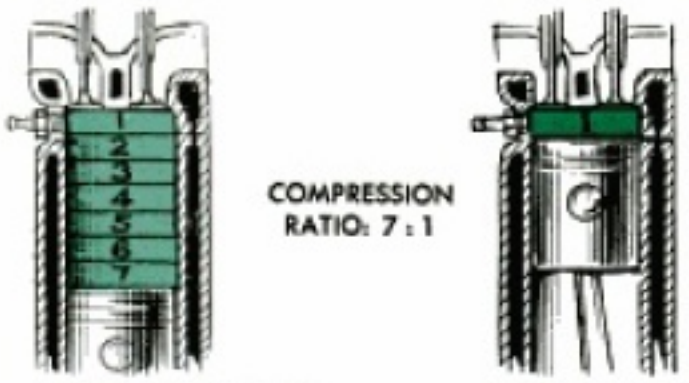
LANCIA Gran Turismo, below, has the famous Italian styling and the fine V6 engine that won the 1953 race in Mexico. All wheels are independently sprung. Clutch, gearbox, differential are a rear-mounted unit

What Makes Your Car Run?

ITS POWER PLANT

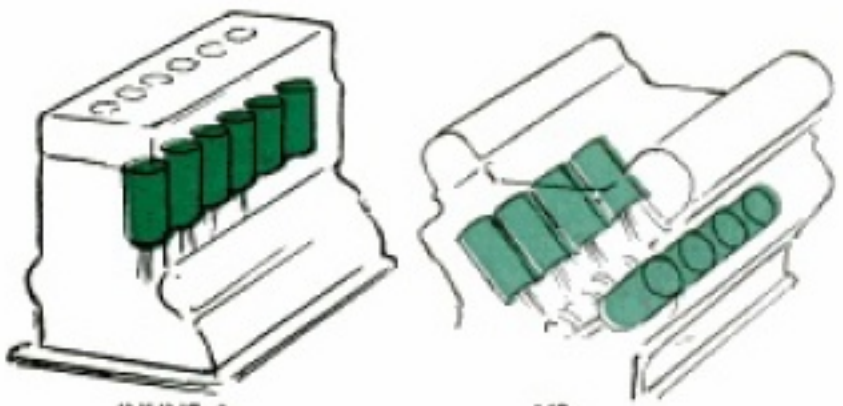
YOUR CAR is driven by a series of explosions. The more powerful the explosions and the closer together they occur, the faster your car can go and the better its acceleration. The smaller these explosions and the less frequently they occur, the greater your car's economy.

The total number of explosions required to move your car a given distance depends upon its transmission, rear-axle ratio and tire size. The strength of each explosion depends upon engine size and design. Involved are displacement and compression ratio. The higher the compression, the more power a given amount of fuel is able to deliver.

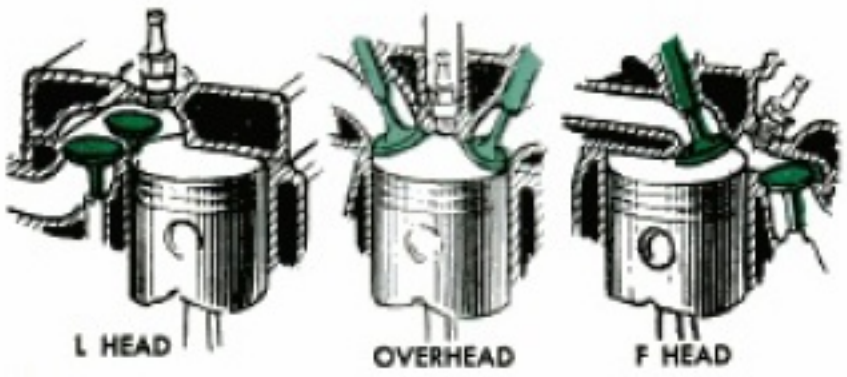


● Compression ratio is the ratio between the volume of the cylinder when the piston is at the bottom of its stroke and the volume when it is at the top. It is the number of times the fuel mixture is compressed before ignition.

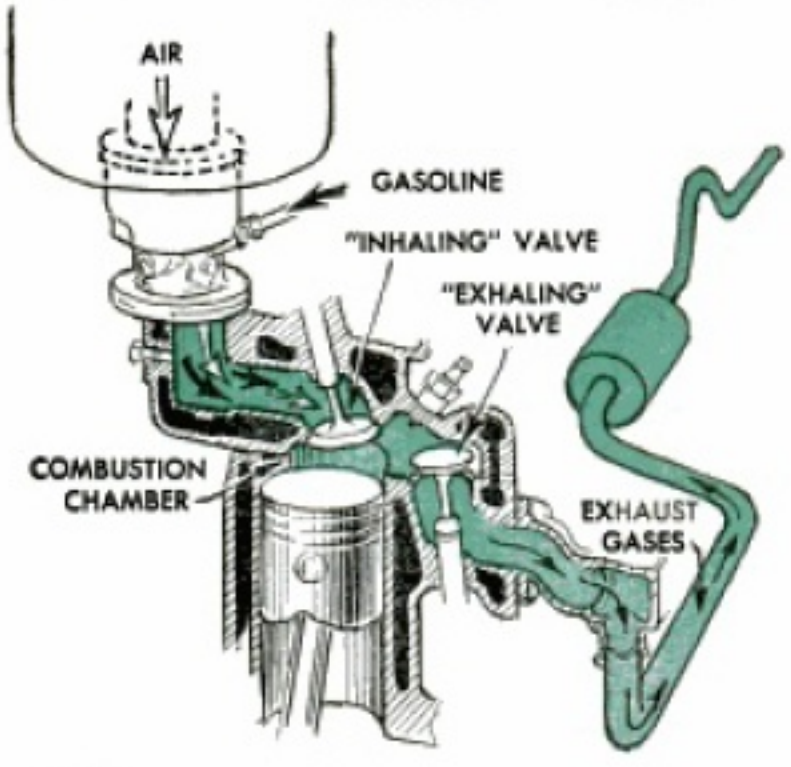
Displacement is the difference between these two volumes—or the amount added as the piston moves to the bottom of the cylinder. To get the engine displacement you multiply this amount by the number of cylinders.



● Engines are classified according to cylinder arrangement. Inline engines have their cylinders arranged one behind the other in a row. V-type engines mount the cylinders in two rows, tilted at an angle that forms a vee. Today's trend is definitely toward V engines.



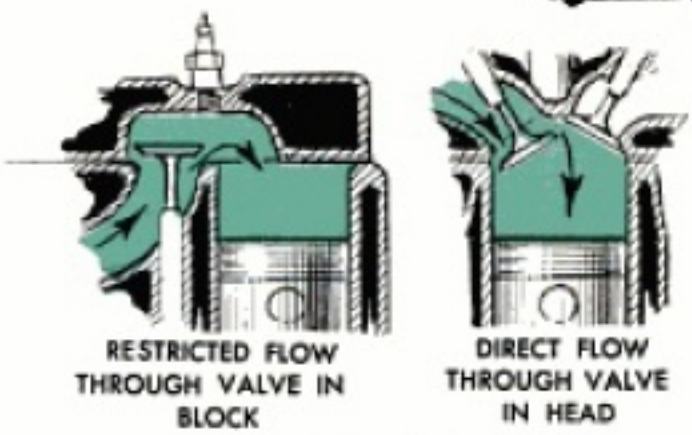
● Engines are also classified by valve position. The L-head engine has both intake and exhaust valves in the block. The overhead-valve engine has both valves in the head above the cylinder. A combination of the two, the F head, has one valve (usually the intake) in the head, the other in the block.



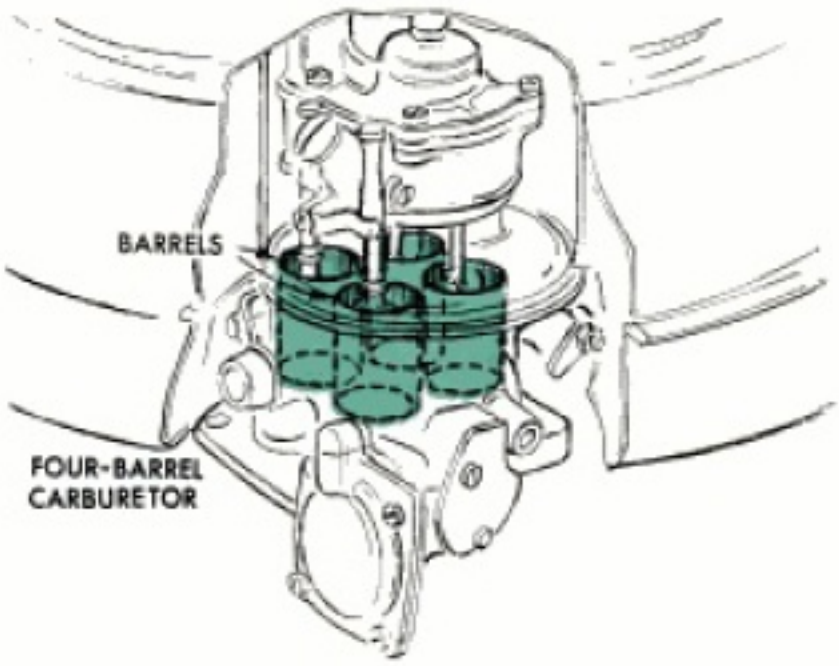
● The function of the engine is to burn a mixture of air and gasoline efficiently. Therefore, an engine must inhale, burn and exhale the mixture many times a minute. This makes engine "breathing" important. Your engine breathes about 9000 times as much air as gasoline. To move such tremendous volumes quickly requires a high volumetric efficiency—the engineer's term for free breathing.

Engine breathing has been improved greatly in recent years. In fact, many recent boosts in horsepower are due almost entirely to this improvement. Intake manifolds are smoother and more direct, speeding the passage of the fuel mixture to each cylinder. Twists and turns in the manifolds have been minimized. Valves are larger, lift higher and stay open longer for the same reason—to get more fuel in and out of the combustion chamber faster.

● Overhead valves are being used more frequently because (among other reasons) they open directly above the piston, permitting better breathing. Exhaust manifolds, mufflers and exhaust pipes are less restricted, larger in diameter, to offer little resistance to the flow of the burnt gases. The result is better exhaling.



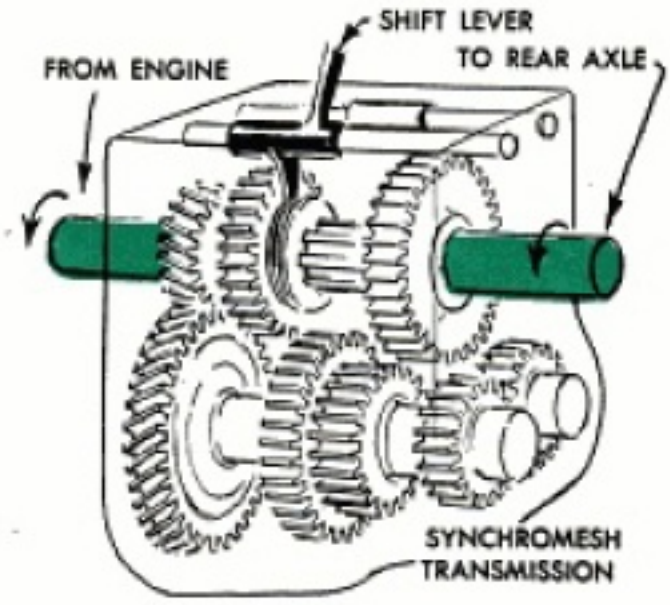
● Four-barrel carburetors are becoming common on the more powerful engines. The reason: To bring in more fuel mixture when the throttle is wide open, as in acceleration or at high speeds. Only two barrels work most of the time, the other two opening when you call for extra power by flooring the accelerator.



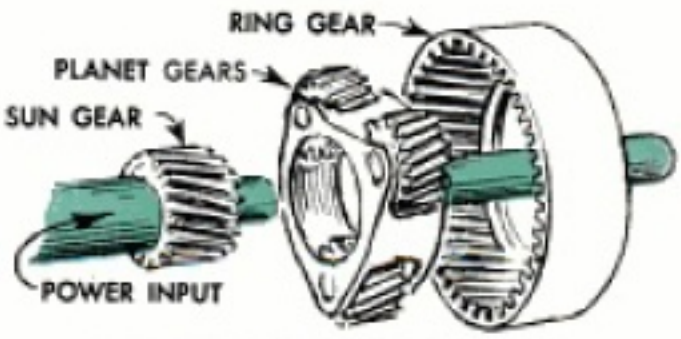
ITS TRANSMISSION

Although a gasoline engine is powerful, it doesn't produce much power until it is turning over fairly rapidly. It doesn't even have enough power to keep itself running at very low speeds. Beginning drivers often stall the engine when they fail to give it enough throttle to produce sufficient power to start the car moving. To make it possible for the engine to turn over rapidly while the car is just starting to move or is moving slowly or is climbing a hill, a transmission is required. Its function is to provide suitable gear ratios (or leverages) between the engine and rear wheels so the car will operate under all driving conditions.

● The synchromesh transmission is the standard hand-shift unit in use today. It consists of various sized gears on separate shafts. The gears mesh as you move the shift lever. The transmission eliminates any grinding or clashing of gears by synchronizing the speeds of the mating gears before they engage.

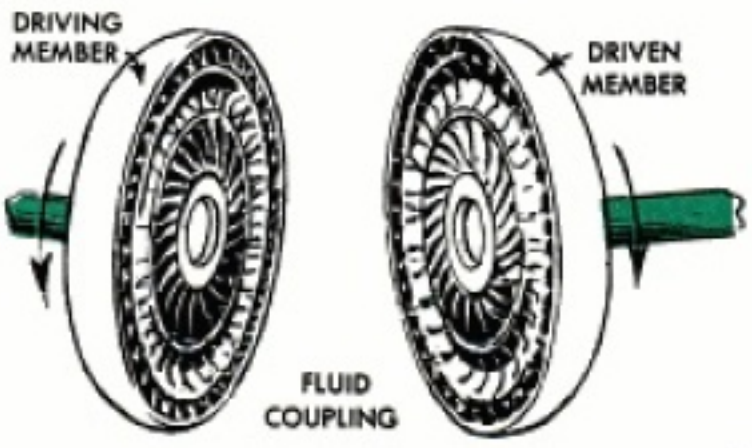


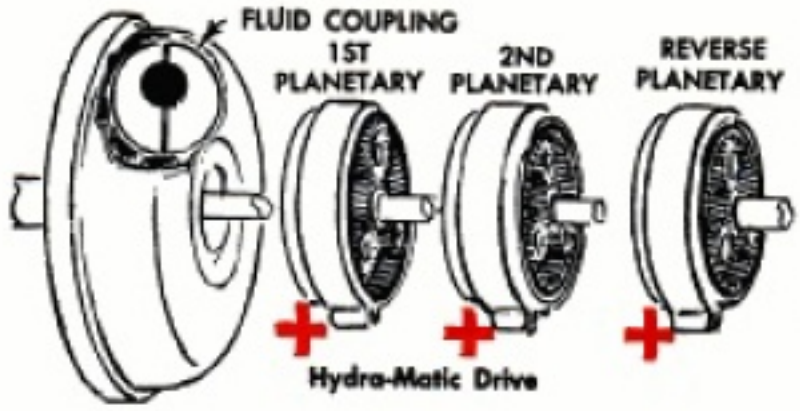
● The planetary-gear train is a simpler, more compact and convenient method of changing gear ratios. It has a center or sun gear, planet gears in a carrier and a large ring gear. Used singly, it does not have the range of synchromesh, but in groups of two or three or when coupled with a torque converter, it is excellent. The unit controls torque and speed, reverses direction or acts as a direct-drive coupling. Being always in mesh, it is ideal for automatic transmissions. The planetary is also used in overdrive where it provides gear ratios of less than 1:1, enabling your car to go farther on each engine revolution.



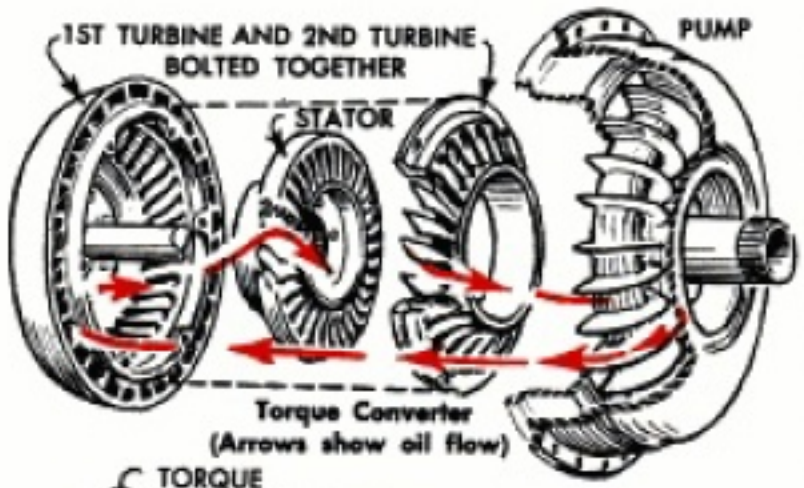
PLANETARY-GEAR ASSEMBLY

● A fluid coupling consists of two parts called torus members and shaped like a doughnut split sidewise. Each half is attached to a separate shaft and immersed in an oil-filled housing. As one member is rotated by the engine, its vanes force the oil to move, which in turn rotates the other member as wind spins a windmill. Used with a conventional transmission, the fluid coupling serves as a cushioning connector between the automobile's engine and transmission.





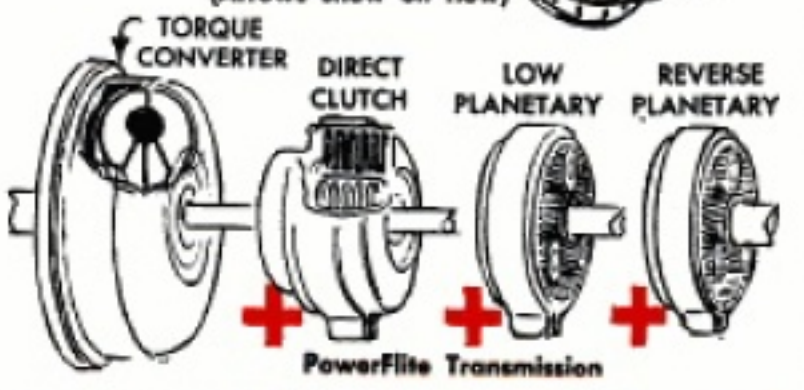
● In Hydra-Matic, an automatic transmission, the fluid coupling is the clutch, permitting the engine to idle while the car is standing still. It has no torque multiplication (or leverage). Two planetary units (plus a third for reverse) provide the multiplication and give four forward speeds. Gear changes are made automatically by a system of brake bands that locks the elements of the planetaries to change ratios.



● The torque converter is basically a fluid coupling plus an additional bladed ring called a stator (because it remains stationary when in operation). The oil, set in motion by the pump, comes off the turbine blades with some of its power yet unspent. The stator blades deflect this oil against a second set of turbine blades and thus make use of its unspent power. This added thrust gives a "lower gear" effect. The lower the car speed, the more unspent power is in the oil when it leaves the first turbine. When the car hits about 40 miles per hour or when the speed of the turbine matches that of the pump, the deflected oil can no longer provide added thrust. Then the stator revolves with the turbines and has no function and the converter is a simple fluid coupling.

Like the fluid coupling, the converter is a clutch at idling speed so no clutch pedal is needed. It has limited torque multiplication and is usually used with planetary gears for acceleration and hard pulls. A second planetary provides reverse gear. When it becomes a fluid coupling, the converter has some slippage. To eliminate it, some transmissions bypass the converter at highway speeds. However, most use the converter at all times, locking out only the planetaries for cruising.

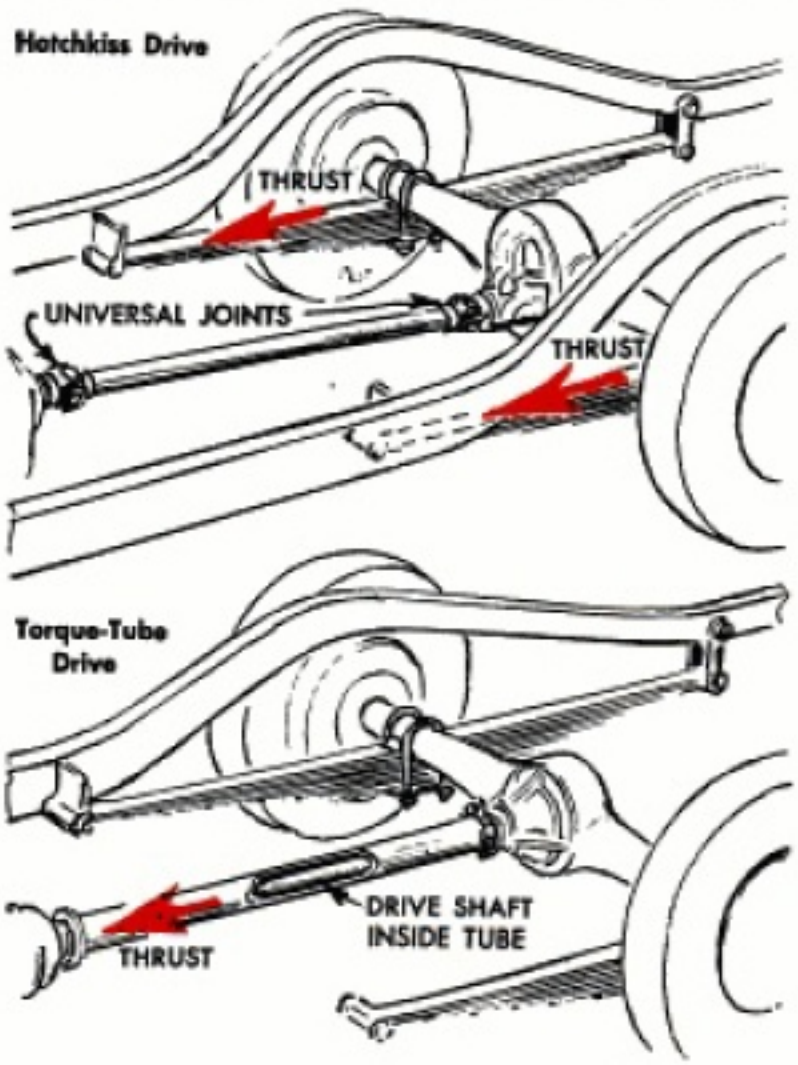
Plymouth's HyDrive is unique—a torque converter plus a synchromesh transmission. The added "gearing" of the converter enables the car to start from a standstill in high gear.



Schematic sketch of Chrysler's torque-converter transmission. Direct clutch locks the planetary units out of use during normal highway driving. For fast pick-up, the low planetary cuts in. Most torque-converter transmissions are similar, differences being in controls

ITS DRIVE SHAFT AND REAR AXLE

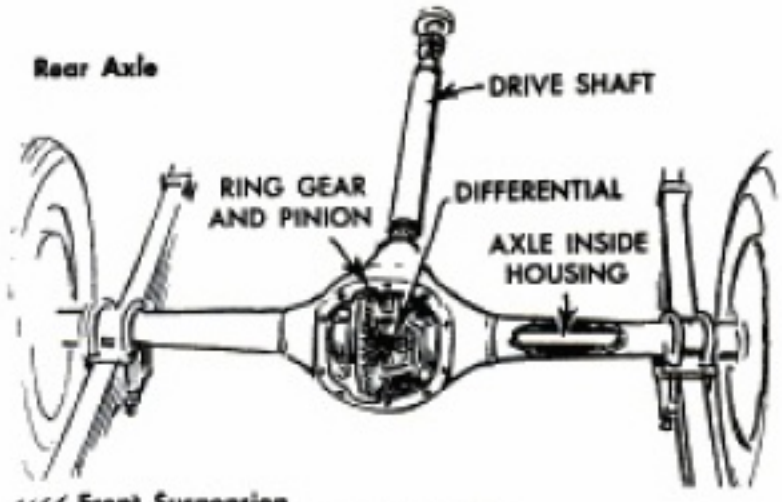
From the transmission, the turning force or torque goes to the rear wheels via the drive shaft. Two types are used in this country: The Hotchkiss and the torque tube. Most current U.S. cars have Hotchkiss drive.



● With Hotchkiss, two or more universal joints are used. As the drive shaft starts to turn the rear wheels, a tremendous torque or twist is transferred to the axle housing. The rear springs absorb this force. Forward movement of the car comes from the thrust on the front end of each rear spring.

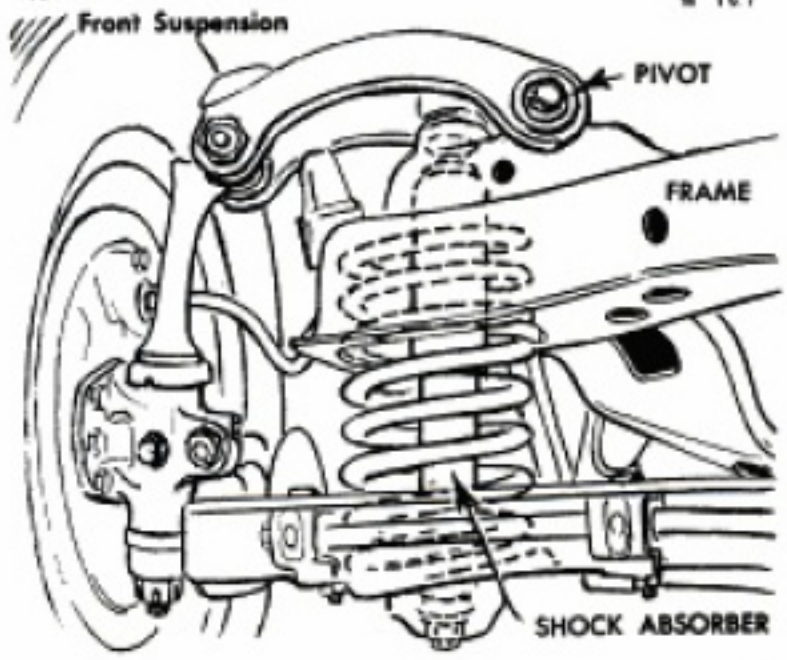
● The torque-tube drive shaft is enclosed in a steel tube, bolted at the rear to the axle housing, at the front to the transmission. Only one universal (at the front) is used. This tube absorbs the twist from the axle housing, relieving the springs of that job. Forward movement of the car comes from the thrust of the torque tube on the transmission case.

● In the center of the rear axle is the differential with its ring gear. The differential permits one rear wheel to go at a different speed from the other so the car will go around curves without tire scuff. The ring gear and its pinion provide the rear-axle ratio that determines how many revolutions your engine must make to move the car a given distance. A ratio of 4:1, for example, gives better pull and acceleration, less economy and top speed. A ratio of 3.5:1 sacrifices pull and getaway for higher top speed and economy.



ITS SUSPENSION

To keep your car on the road, to make it ride comfortably and steer safely, a well-designed suspension system is necessary. Springs, shock absorbers, stabilizers and frames make up the suspension system.

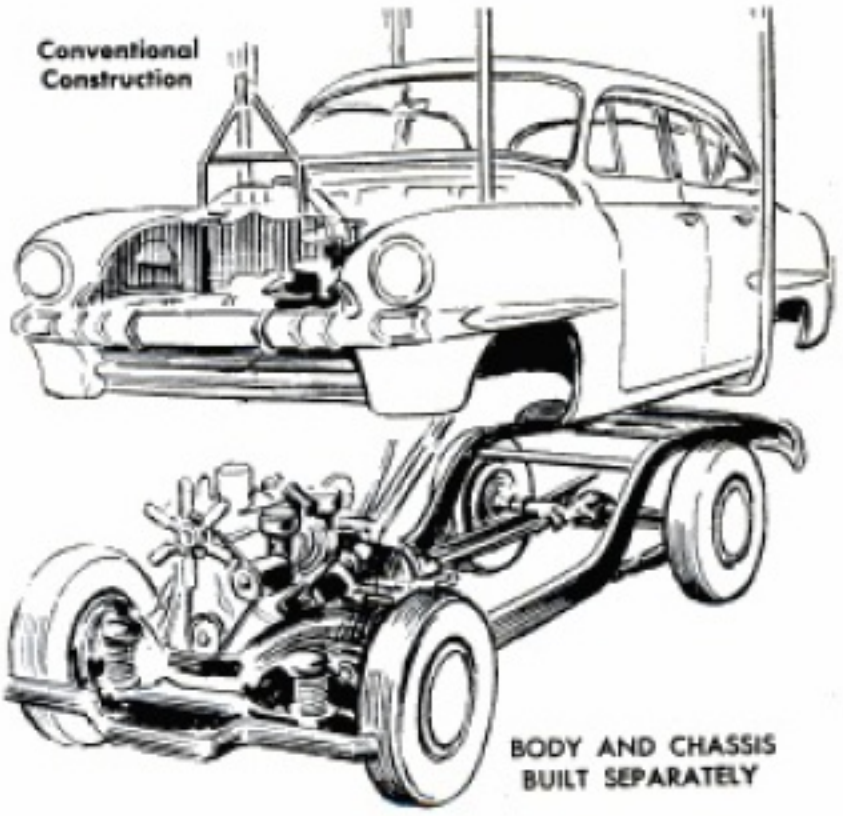


● Front-wheel suspension is independent on all American cars today. Either front wheel can go up or down when it hits a hole or bump without disturbing the other. No continuous axle connects the front wheels, each wheel being fastened to the frame individually. Most front springs are coil and, in many cases, the shock absorbers are mounted inside the coil.

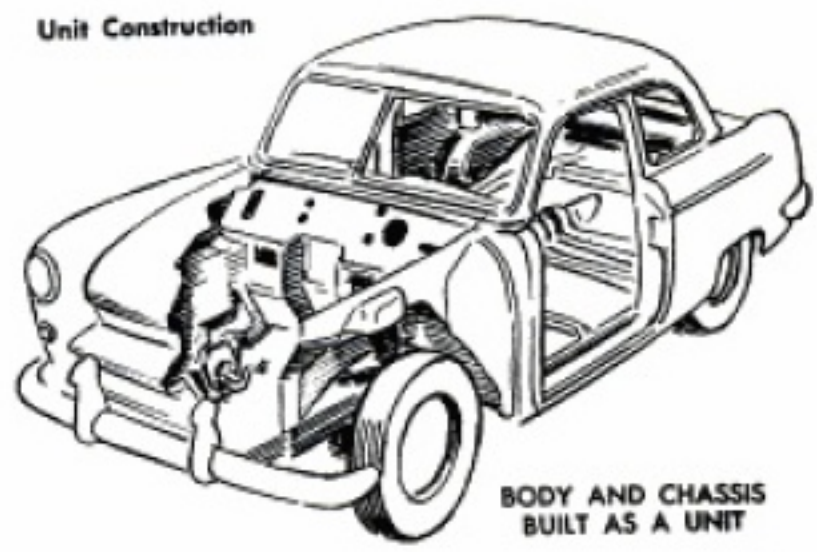
Rear-wheel suspension is nonindependent on American cars. The rear axle is inside a solid, continuous housing that makes independent wheel movement impossible. Leaf springs are most common in the rear, but coil springs are used occasionally.

ITS BODY

Finally, there must be a place for the driver and his passengers to sit, protected from weather and other hazards. The body provides this protection and, at the same time, performs other functions. It gives the car a streamlining to lessen wind resistance at high speeds. It also provides a medium for styling the automobile —of giving it an attractive and distinctive appearance.



● There are two different types of body construction. In the conventional method (used by the vast majority of American automobile companies), the body is built separately and then at the desired moment in the assembly operation, it is lowered on the chassis. (The chassis consists of the frame and the running gear such as wheels, engine and drive line.)



● The second and less common method is known as unit construction. In this type the body shell and chassis are built as a unit and the entire assembly serves as a frame for the running gear. ★ ★ ★