

Parade of 1955 Cars

By Leo Donovan, *PM's* Automotive Correspondent

IT WILL BE a long time before another year like 1955 hits the automobile industry. Let's see why.

These 1955 models boast of all-new bodies: Chevrolet, Ford, Plymouth, Pontiac, Dodge, DeSoto, Chrysler, Imperial, Mercury and Hudson. These models have new engines: Chevrolet, Plymouth, Pontiac, Dodge, Chrysler, Packard, Nash and Hudson.

Packard has a new torsion-bar suspension with an automatic load "levelizer" (see page 148 for details).

This is the year of the wrap-around windshield. It is the year of hooded headlights and reverse-slant taillights. It is the year that marked the end of the inner tube,

as tubeless tires became standard. It is the year of the four-door hardtop sedan (see photograph below).

In the industry, this may be the year known as 19V8 instead of 1955. The V8 engine has taken over, with every make except Kaiser and Willys offering the V-type engine.

Almost without exception, the new cars have bounced horsepower upward sharply. Average horsepower for the industry this year is 181. Compare that with the 1951 average of 118—a jump of 63 horsepower in only four years.

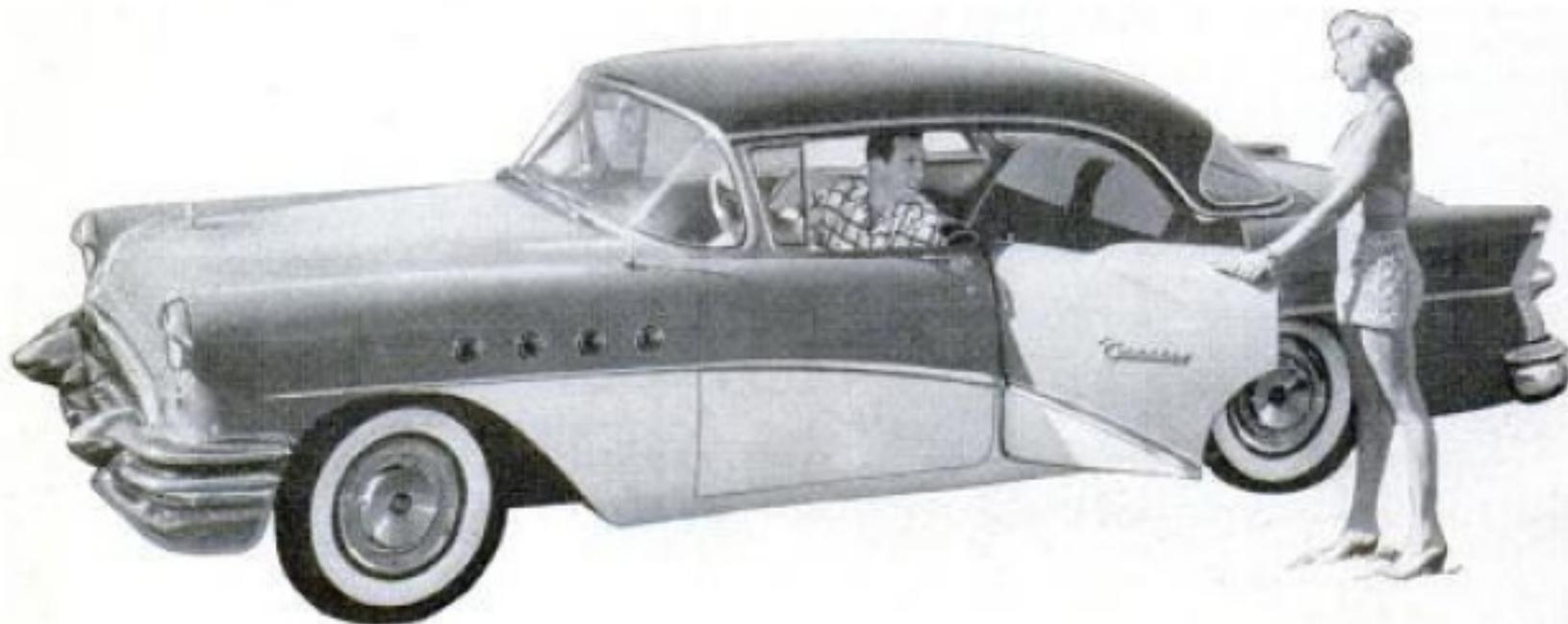
It is literally the most colorful year in history. Colors once reserved for taxicabs

(Text continued to page 280)

Buick

Buick raised horsepower to 188 on the Special and 236 on all other models. A variable-pitch stator in the Dynaflo (see page 148) provides faster getaway

at wide-open throttle. It has announced a four-door sedan with hardtop styling (below). Body changes include a new mesh grille, straight-back rear fenders

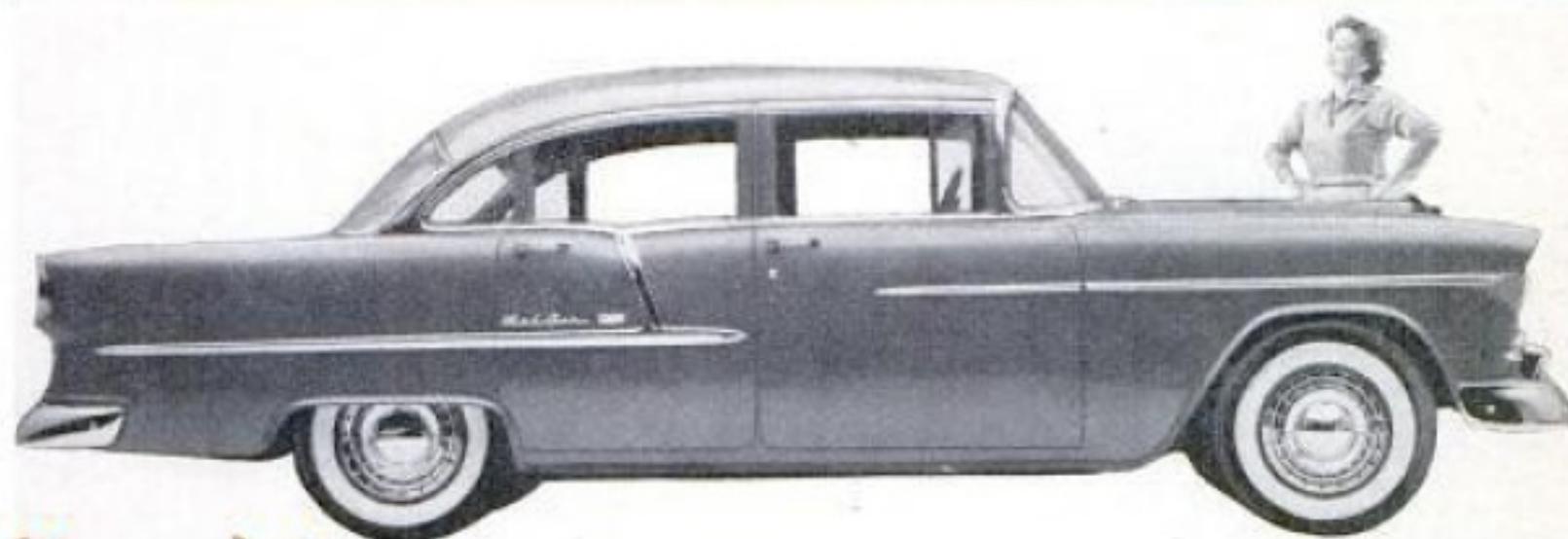




Cadillac

Cadillac also boosted horsepower. It is now 250 and the Eldorado sports convertible develops 270. The engine has a new carburetor, water pump and a more

rigid crankshaft. Hydra-Matic is improved. Tinted glass is now gray instead of green. The grille has been reworked a bit as has brightwork on the sides



Chevrolet

Chevrolet engineers have been busy. They cut weight of frame 18 percent yet it's 50 percent more rigid. New V8 engine weighs 30 pounds less than the six.

Front suspension reduces "nose diving" when you put on brakes. Body and frame are more integrated (page 149). Lower body looks longer—is actually shorter

Chrysler

Chrysler has a new body, featuring long, low lines, striking two-tone effects and prominent taillights. Mechanical changes are many: The Windsor's new V8

engine develops 188 horsepower on regular gasoline; the New Yorker V8 has 250 horsepower; rear springs are five inches farther apart, increasing stability





DeSoto

DeSoto is broad and low with a glued-to-the-road look. Front tread is almost four inches wider than 1954. Rear springs are five inches farther apart. The

V8 engine has hemispherical combustion chambers, uses regular-grade fuel. Four-barreled Fireflite has 200 horsepower; two-barreled Firedome has 185



Dodge

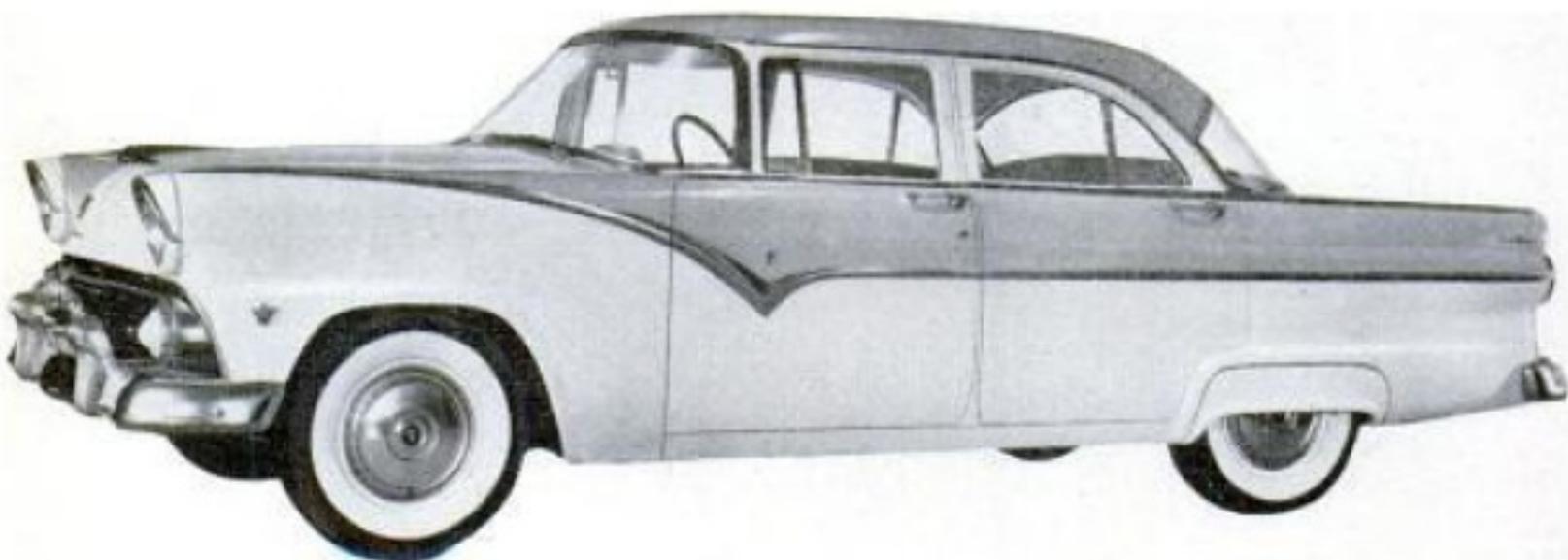
Dodge has horsepower variety this year. Take your choice of 123, 175, 183 and 193. As on all Chrysler Corporation models, the control lever of automatic

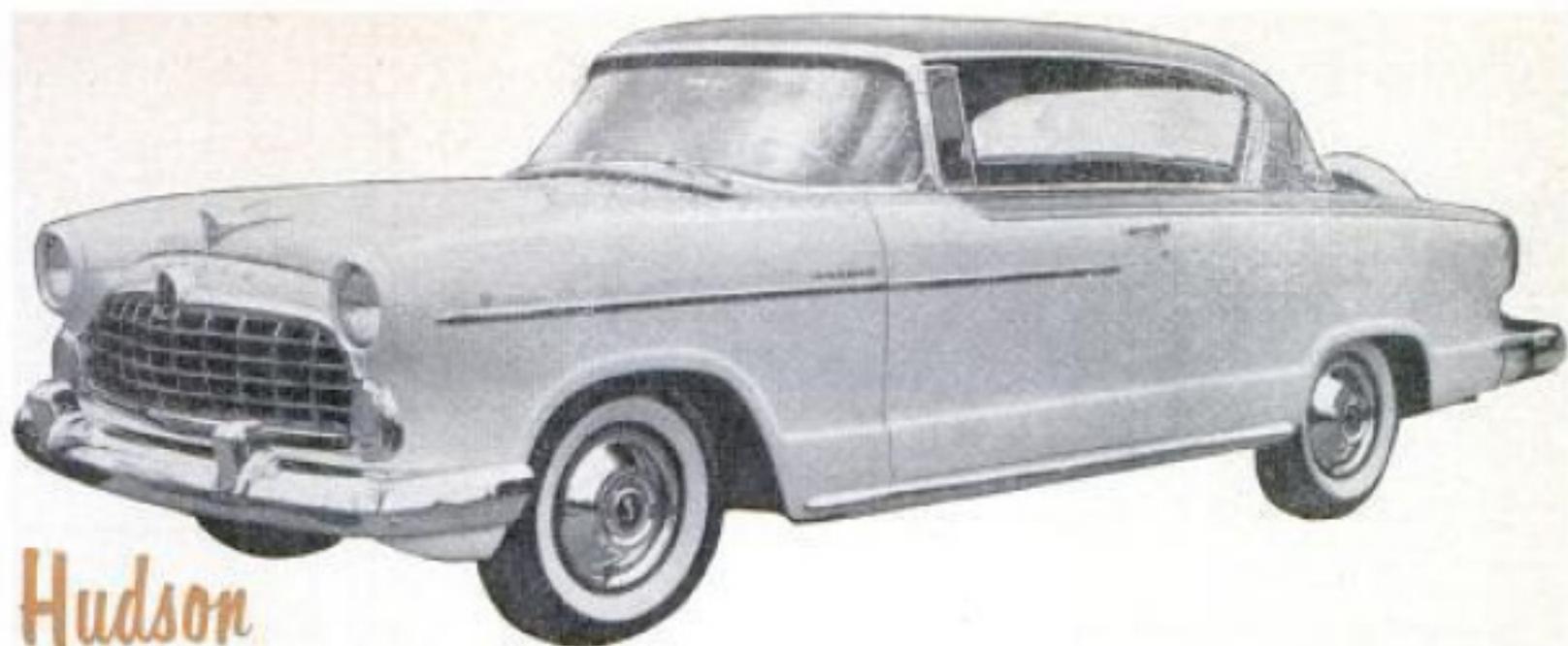
transmission is on the dashboard. The Lancer hardtop (above) features three-tone color combinations. Its style treatment emphasizes Dodge's long, taut look

Ford

Ford's top line, the Fairlane, has a curving chrome line (below) to set it apart from other Fords. The hardtop model is 2.4 inches lower than in 1954 and

has a chrome arch over its roof. All models have flatter hoods, longer rear decks. Hooded headlights, reverse-angle rear fenders make them appear longer





Hudson

Hudson, first all-new product of American Motors, offers three models for 1955: A Wasp 6, a Hornet 6 and a Hornet V8. Almost the only recognizable part

of the all-new styling is the Hudson insignia in the wide-mesh front grille. Along with Nash, it has the widest front seats in the industry (see page 168)



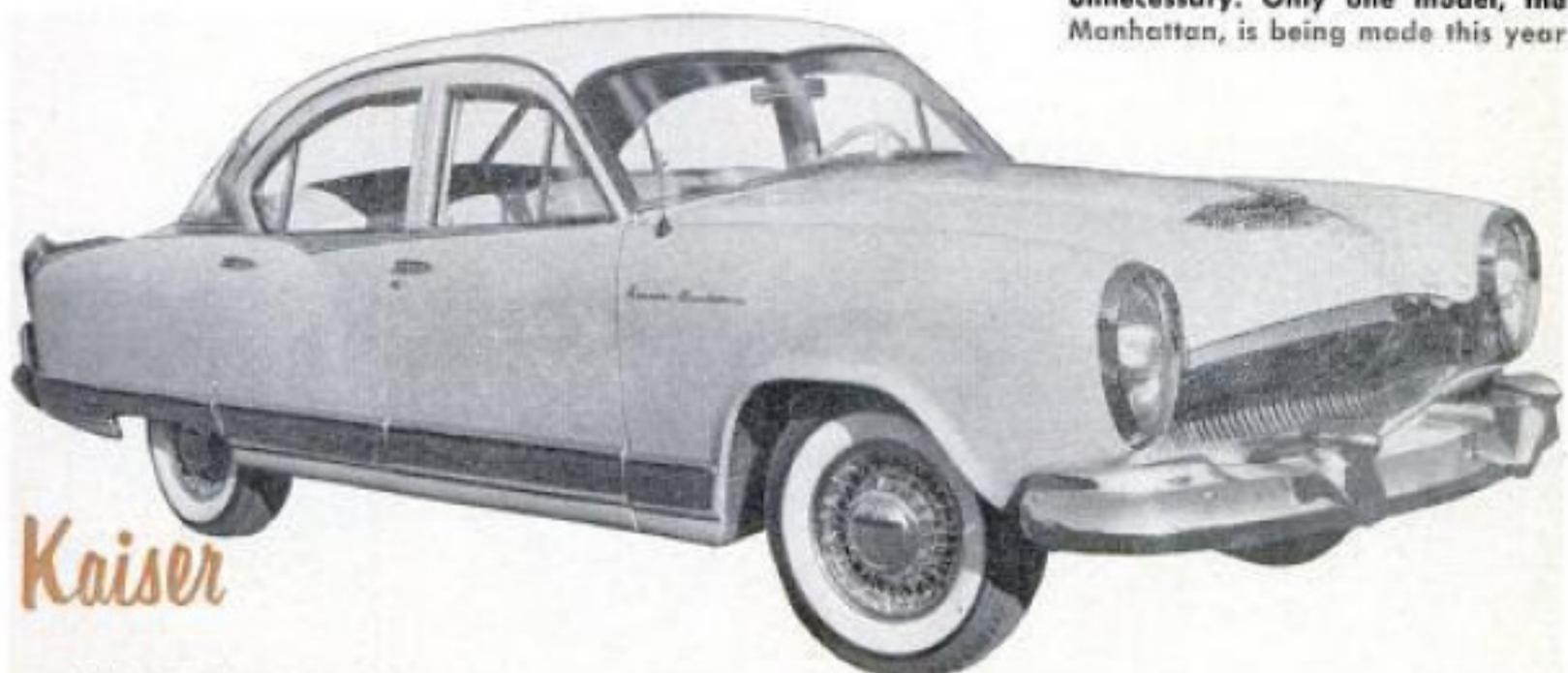
Imperial

Imperial is Chrysler's bid in the "ultra ultra" field. Entirely distinctive and built on its own assembly line, its styling is unlike that of other Chryslers.

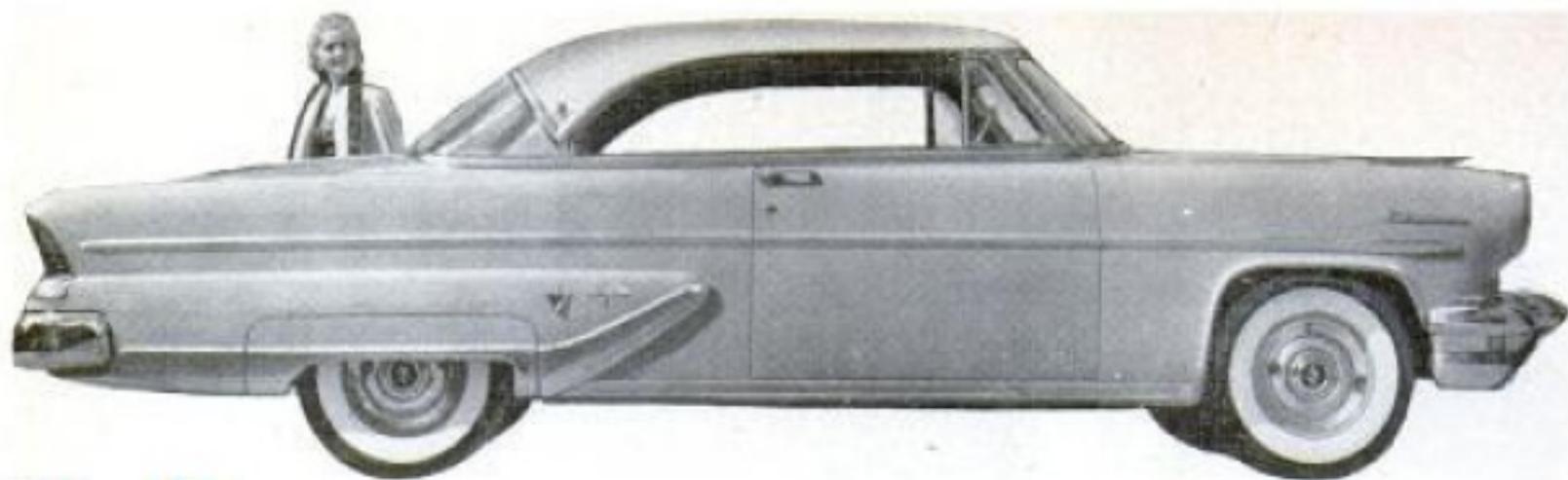
Full-wheel cutouts in fenders provide a sporty look. Big taillights, mounted saucily atop rear fenders, quickly identify this prestige car from any angle

Kaiser for 1955 is only slightly changed after last year's restyling. Retained is the supercharger that

cuts in on demand to boost horsepower when needed, cuts out to save gasoline when the extra power is unnecessary. Only one model, the Manhattan, is being made this year



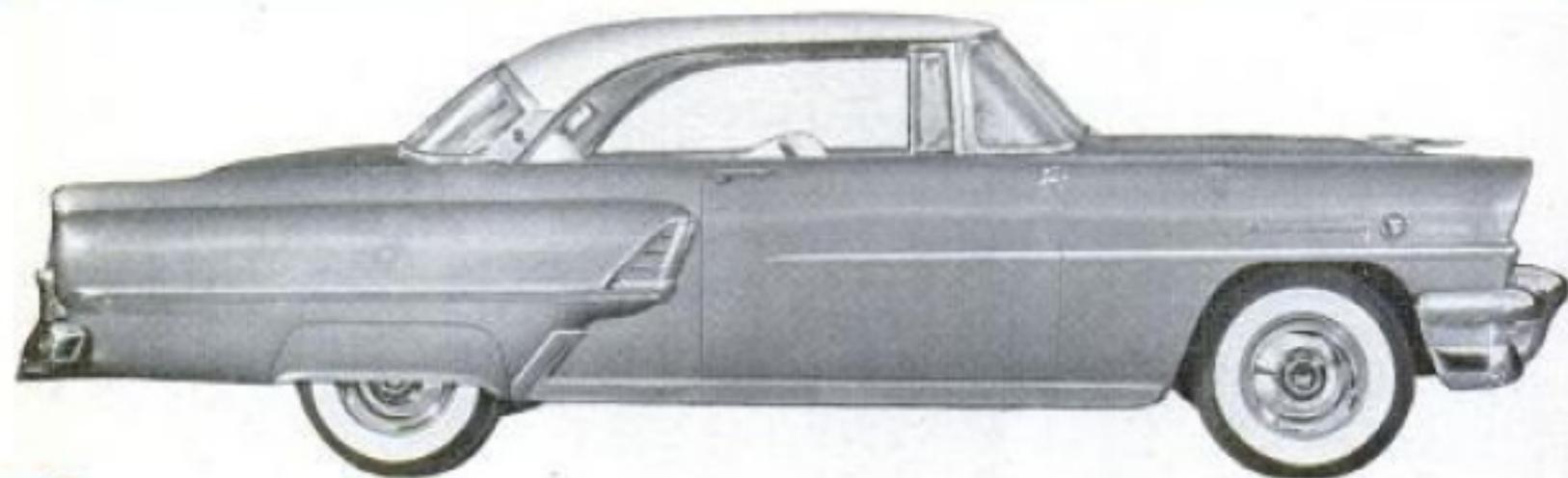
Kaiser



Lincoln

Lincoln's story is mostly mechanical as it offers greater displacement and power plus its own new automatic transmission that has a low-gear start at

wide-open throttle for faster getaway. Also new is a push-button lubrication system (see page 149). The front grille is restyled as are fenders, taillights



Mercury

Mercury has a longer wheelbase, a greater over-all length and more power than last year. The new body features canted headlights and bold character lines

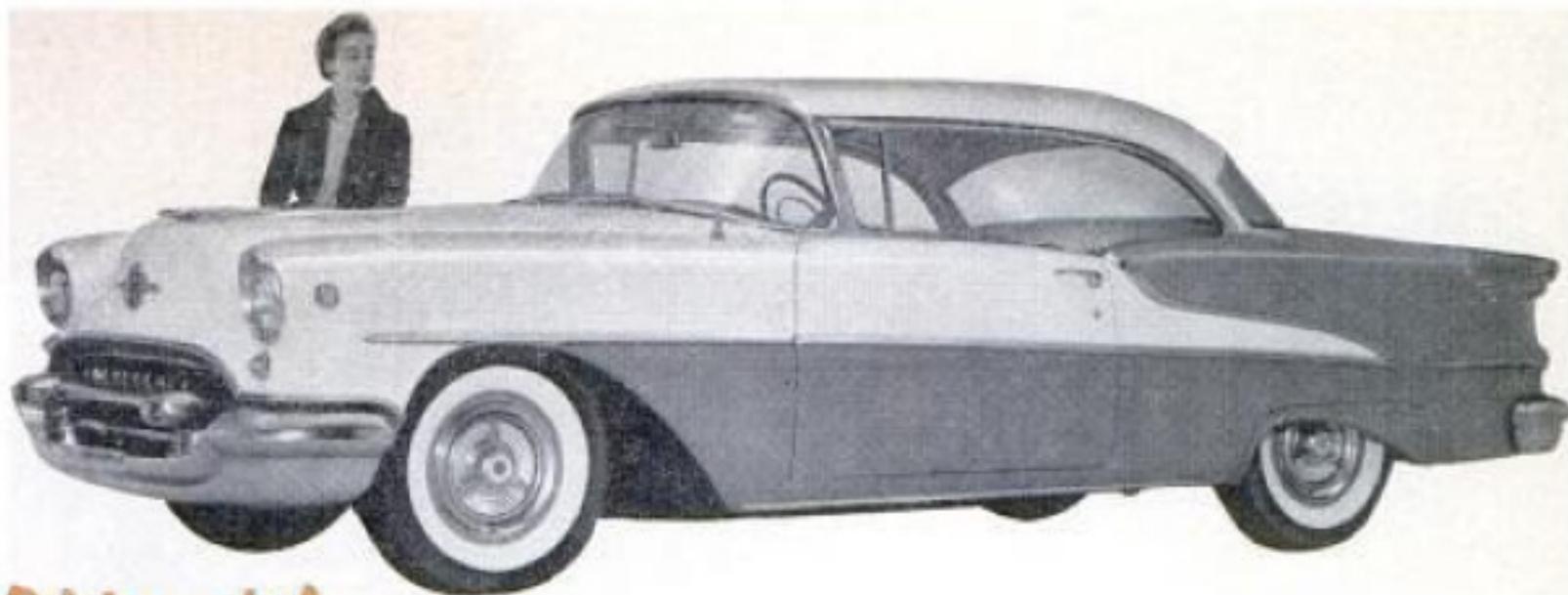
in its rear fenders. The new top line, Montclair, is 2½ inches lower than 1954 Mercury and develops 198 horsepower. Other models have 188 horsepower

Nash has given its body styling a bold, new look with grille-mounted headlights, similar to those on the Nash-Healey sports car. The front fenders

sweep forward, their graceful curve unbroken except by small parking lights. Nash offers three models: the Statesman 6, Ambassador 6 and Ambassador V8



Nash



Oldsmobile

Oldsmobile, which began the trend toward striking color treatments last year, changed its two-toning

slightly. Its front grille has been restyled as have the taillights. Biggest news is the announced four-door hardtop sedan, out this spring. Power has been boosted by a high-lift camshaft, improved breathing



Packard

Packard came out with two major mechanical changes. It offers the industry's most powerful V8 and a new

torsion-bar suspension that has an automatic load levelizer (see page 148 for details). No matter how much weight is in the car, body height is constant. Bodies have new windshield, grille and rear fenders

Plymouth's 167-horsepower V8 engine has a new type of combustion chamber (page 149). Bodies are lower, wider and 10 inches longer than last year. Seats are

roomier: Front seat is 3.2 inches wider; rear seat is 5.9 inches wider. Reverse-angle fenders, both front and rear, make it look even longer than it is

Plymouth



Pontiac



Pontiac's bold grille makes it easy to identify on the highway. Behind the grille is a new V8 engine of 180 horsepower. The engine features a crankcase-ventilation system that forces harmful vapors out efficiently; a reverse-flow cooling system; full-pressure lubrication; ball-pivot valve rocker arms

Rambler



Rambler is now sold by both Nash and Hudson dealers. Biggest change for 1955 was the removal of the full skirts from the front wheels. This reduced the turn-circle diameter sharply. Now the Rambler is the most agile car in the industry. The front grille is also new

Studebaker

Studebaker has restyled its front end for 1955 and added considerable brightwork to emphasize its low

lines. It re-introduced the President with a new V8 engine of 175 horsepower. The Commander V8 has the industry's shortest stroke, an important factor in long engine life. Champion 6 now has 101 horsepower



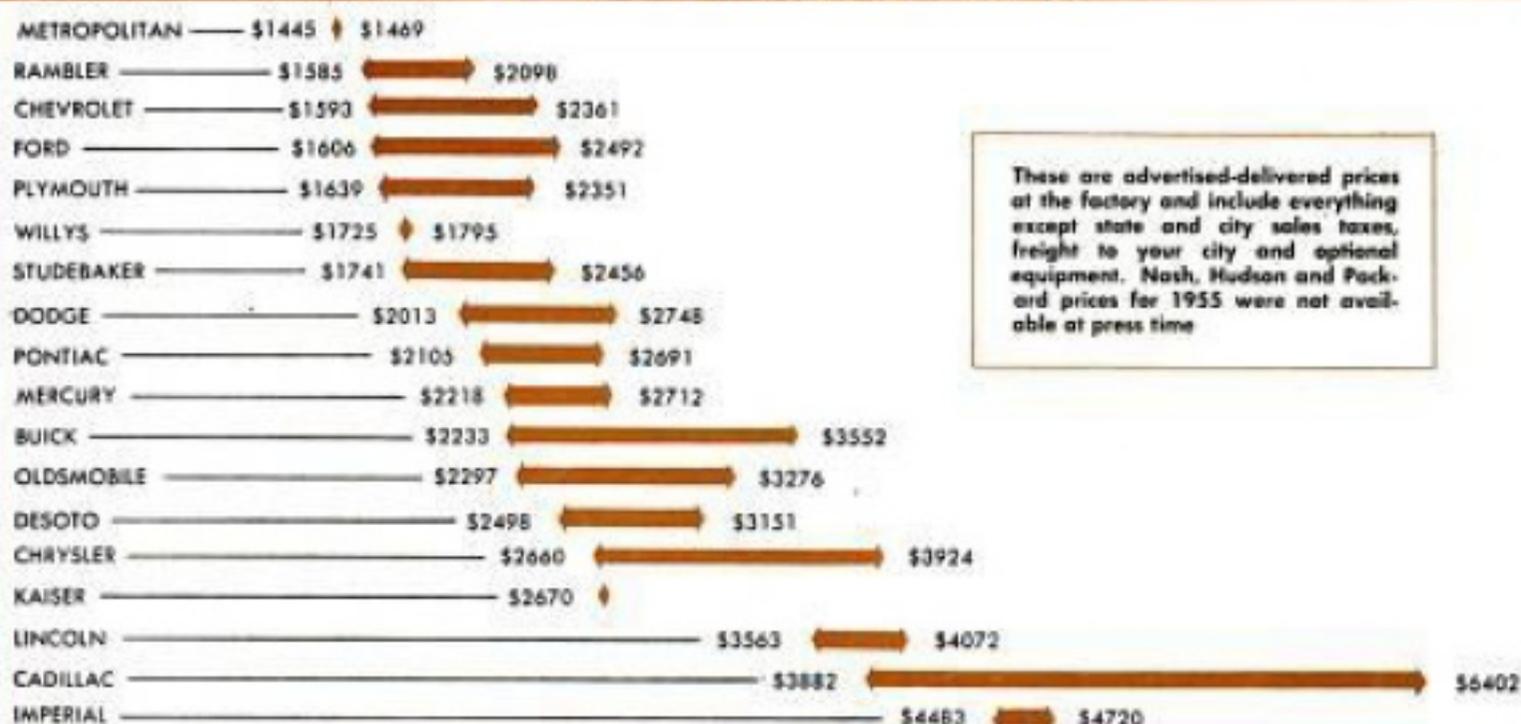
Willys



Willys has restyled the front grille and taillights on its 1955 models and cut prices to where its hard-

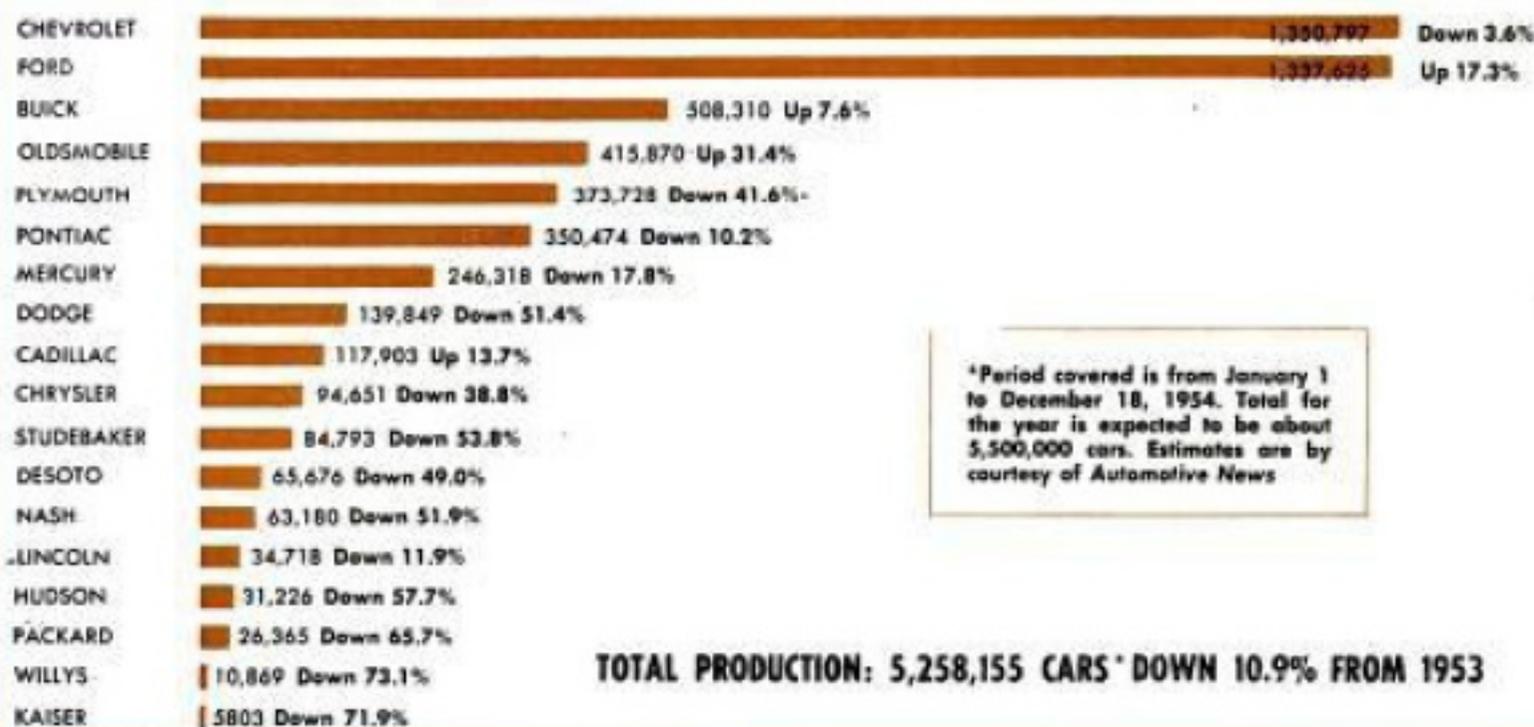
top (above) is the lowest-priced in the industry. Mechanically, the car is unchanged from last year

PRICE RANGES OF THE 1955 AUTOMOBILES



These are advertised-delivered prices at the factory and include everything except state and city sales taxes, freight to your city and optional equipment. Nash, Hudson and Packard prices for 1955 were not available at press time

PRODUCTION OF AUTOMOBILES DURING 1954 BY MAKES



*Period covered is from January 1 to December 18, 1954. Total for the year is expected to be about 5,500,000 cars. Estimates are by courtesy of Automotive News

TOTAL PRODUCTION: 5,258,155 CARS* DOWN 10.9% FROM 1953

Specifications of the

| | LOWEST PRICE 4-DOOR SEDAN | SHIPPING WEIGHT | WHEELBASE | OVER-ALL LENGTH | OVER-ALL WIDTH | OVER-ALL HEIGHT | OVER-ALL STEERING RATIO | TURN-CIRCLE DIAMETER | DISPLACEMENT | MAXIMUM HORSEPOWER | COMPRESSION RATIO | MAXIMUM TORQUE | BORE AND STROKE |
|-----------------------------------|------------------------------|--------------------|-----------|--------------------|-------------------|--------------------|----------------------------|-------------------------|--------------|-----------------------|----------------------|-------------------|--------------------|
| METROPOLITAN Four | \$1445† | 1875 | 85.0 | 149.5 | 61.5 | 54.5 | 21.0 | 36 | 73.2 | 42 | 7.2 | 62 | 2.58x3.50 |
| RAMBLER Six | \$1695 | 2630 | 108.0 | 186.3 | 73.5 | 59.4 | 21.7 | 39 | 195.6 | 90 | 7.3 | 150 | 3.13x4.25 |
| WILLYS Six | \$1725 | 2778 | 108.0 | 189.9 | 72.0 | 60.8 | 22.4 | 40 | 226.2 | 115 | 7.3 | 190 | 3.31x4.38 |
| CHEVROLET Handshift Six | \$1728 | 3125 | 115.0 | 195.6 | 74.0 | 62.1 | 25.7 | 38 | 235.5 | 123 | 7.5 | 207 | 3.56x3.94 |
| Powerglide Six | 1906 | 3220 | 115.0 | 195.6 | 74.0 | 62.1 | 25.7 | 38 | 235.5 | 136 | 7.5 | 209 | 3.56x3.94 |
| V8 | 1827 | 3095 | 115.0 | 195.6 | 74.0 | 62.1 | 25.7 | 38 | 265.0 | 162* | 8.0 | 257 | 3.75x3.00 |
| FORD Six | \$1753 | 3126 | 115.5 | 198.5 | 75.9 | 61.0 | 25.3 | 41 | 223.0 | 120 | 7.5 | 195 | 3.62x3.60 |
| V8 | 1853 | 3236 | 115.5 | 198.5 | 75.9 | 61.0 | 25.3 | 41 | 272.0 | 162* | 7.6 | 258 | 3.62x3.30 |
| PLYMOUTH Six | \$1781 | 3129 | 115.0 | 203.8 | 74.6 | 60.1 | N.A. | 40 | 230.0 | 117 | 7.4 | 194 | 3.25x4.63 |
| V8 | 1884 | 3246 | 115.0 | 203.8 | 74.6 | 60.1 | N.A. | 41 | 260.0 | 167* | 7.6 | 231 | 3.56x3.25 |
| STUDEBAKER Six | \$1783 | 2805 | 116.5 | 202.3 | 70.4 | 59.8 | 19.5 | 39 | 185.6 | 101 | 7.5 | 152 | 3.00x4.38 |
| Commander V8 | 1919 | 3075 | 116.5 | 202.3 | 70.4 | 60.0 | 24.0 | 39 | 224.3 | 140 | 7.5 | 202 | 3.56x2.81 |
| President V8 | 2311 | 3220 | 120.5 | 206.3 | 70.4 | 60.0 | 24.0 | 40 | 259.2 | 175 | 7.5 | 250 | 3.56x3.25 |
| DODGE Coronet 6 | \$2093 | 3295 | 120.0 | 212.1 | 74.5 | 60.3 | N.A. | 43 | 230.0 | 123 | 7.4 | 194 | 3.25x4.63 |
| Coronet V8 | 2196 | 3395 | 120.0 | 212.1 | 74.5 | 60.6 | N.A. | 42 | 270.0 | 175* | 7.6 | 240 | 3.63x3.26 |
| Custom Royal V8 | 2473 | 3485 | 120.0 | 212.1 | 74.5 | 60.6 | N.A. | 42 | 270.0 | 183* | 7.6 | 245 | 3.63x3.26 |
| NASH Statesman 6 | N.A. | N.A. | 114.3 | 202.3 | 78.0 | 61.8 | 23.7 | 40 | 195.6 | 100* | 7.5 | 155 | 3.13x4.25 |
| Ambassador 6 | N.A. | N.A. | 121.3 | 209.3 | 78.0 | 62.3 | 25.5 | 42 | 252.6 | 130* | 7.6 | 220 | 3.50x4.38 |
| Ambassador V8 | N.A. | N.A. | 121.3 | 209.3 | 78.0 | 62.3 | N.A. | N.A. | 320.0 | 208 | 7.8 | 276 | 3.19x3.50 |
| PONTIAC Chieftain V8 | \$2164 | 3501 | 122.0 | 203.2 | 75.4 | 60.5 | 25.0 | 42 | 287.2 | 180 | 8.0 | 264 | 3.75x3.25 |
| Star Chief V8 | 2362 | 3546 | 124.0 | 210.2 | 75.4 | 60.5 | 25.0 | 43 | 287.2 | 180 | 8.0 | 264 | 3.75x3.25 |
| HUDSON Wasp 6 | N.A. | N.A. | 114.3 | 202.3 | 78.0 | 61.8 | N.A. | 38 | 202.0 | 104* | 7.5 | 158 | 3.00x4.75 |
| Hornet 6 | N.A. | N.A. | 121.3 | 209.3 | 78.0 | 62.3 | N.A. | 40⊕ | 308.0 | 160* | 7.5 | 264 | 3.81x4.50 |
| Hornet V8 | N.A. | N.A. | 121.3 | 209.3 | 78.0 | 62.3 | N.A. | 40⊕ | 320.0 | 208 | 7.8 | 276 | 3.19x3.50 |
| MERCURY V8 | \$2276 | 3450 | 119.0 | 205.5 | 76.4 | 61.2 | 25.4 | 42 | 292.0 | 188 | 7.6 | 274 | 3.75x3.30 |
| Montclair V8 | N.A. | 3480⊕ | 119.0 | 205.5 | 76.4 | 58.8 | 25.4 | 42 | 292.0 | 198 | 8.5 | 286 | 3.75x3.30 |

3.81

1955 Cars

| | LOWEST PRICE 4-DOOR SEDAN | SHIPPING WEIGHT | WHEELBASE | OVER-ALL LENGTH | OVER-ALL WIDTH | OVER-ALL HEIGHT | OVER-ALL STEERING RATIO | TURN-CIRCLE DIAMETER | DISPLACEMENT | MAXIMUM HORSEPOWER | COMPRESSION RATIO | MAXIMUM TORQUE | BORE AND STROKE |
|-------------------|------------------------------|--------------------|-----------|--------------------|-------------------|--------------------|----------------------------|-------------------------|--------------|-----------------------|----------------------|-------------------|--------------------|
| BUICK | | | | | | | | | | | | | |
| Special V8 | \$2291 | 3742 | 122.0 | 206.7 | 76.2 | 60.4 | 26.7 | 42 | 264.0 | 188 | 8.4 | 256 | 3.63x3.20 |
| Century V8 | 2548 | 3807 | 122.0 | 206.7 | 76.2 | 60.6 | 26.7 | 42 | 322.0 | 236 | 9.0 | 330 | 4.00x3.20 |
| Super V8 | 2876 | 4141 | 127.0 | 216.0 | 80.0 | 62.5 | 24.1† | 43 | 322.0 | 236 | 9.0 | 330 | 4.00x3.20 |
| Roadmaster V8 | 3349‡ | 4278 | 127.0 | 216.0 | 80.0 | 62.7 | 24.1† | 43 | 322.0 | 236 | 9.0 | 330 | 4.00x3.20 |
| OLDSMOBILE | | | | | | | | | | | | | |
| Eighty-Eight V8 | \$2362 | 3711 | 122.0 | 203.4 | 77.8 | 60.5 | 27.5 | 42 | 324.3 | 185 | 8.5 | 320 | 3.88x3.44 |
| Super 88 V8 | 2503 | 3762 | 122.0 | 203.4 | 77.8 | 60.5 | 27.5 | 42 | 324.3 | 202 | 8.5 | 332 | 3.88x3.44 |
| Ninety-Eight V8 | 2833 | 3864 | 126.0 | 212.4 | 77.8 | 60.5 | 27.5 | 43 | 324.3 | 202 | 8.5 | 332 | 3.88x3.44 |
| DESOTO | | | | | | | | | | | | | |
| Firedome V8 | \$2498 | 3870 | 126.0 | 217.9 | 78.3 | 60.6 | N.A. | 44 | 291.0 | 185 | 7.5 | 245 | 3.72x3.34 |
| Fireflite V8 | 2727 | 3940 | 126.0 | 217.9 | 78.3 | 60.6 | N.A. | 44 | 291.0 | 200 | 7.5 | 274 | 3.72x3.34 |
| CHRYSLER | | | | | | | | | | | | | |
| Windsor V8 | \$2660 | 3925 | 126.0 | 218.6 | 79.1 | 60.6 | N.A. | 44 | 301.0 | 188 | 8.0 | 275 | 3.63x3.63 |
| New Yorker V8 | 3494‡ | 4160 | 126.0 | 218.8 | 79.1 | 60.9 | N.A. | 44 | 331.0 | 250 | 8.5 | 340 | 3.81x3.63 |
| KAISER | | | | | | | | | | | | | |
| Manhattan 6 | \$2670 | 3275Ⓞ | 118.5 | 215.6 | 74.9 | 60.3 | 25.0 | 38 | 226.2 | 140 | 7.3 | 215 | 3.31x4.38 |
| PACKARD | | | | | | | | | | | | | |
| Clipper V8 | N.A. | 3795 | 122.0 | 214.8 | 78.0 | 62.0 | 27.3 | 43 | 320.0 | 225 | 8.0 | 325 | 3.81x3.50 |
| Clipper Custom V8 | N.A. | 3930 | 122.0 | 214.8 | 78.0 | 62.0 | 27.3 | 43 | 352.0 | 245 | 8.5 | 355 | 4.00x3.50 |
| Patrician V8 | N.A. | 4355 | 127.0 | 217.4 | 78.0 | 62.3 | 30.9 | 45 | 352.0 | 260 | 8.5 | 355 | 4.00x3.50 |
| LINCOLN | | | | | | | | | | | | | |
| V8 | \$3563‡ | 4235 | 123.0 | 215.6 | 77.6 | 62.7 | 26.1 | 46 | 341.0 | 225 | 8.5 | 332 | 3.94x3.50 |
| CADILLAC | | | | | | | | | | | | | |
| Series 62 V8 | \$3977‡ | 4370 | 129.0 | 216.3 | 79.8 | 62.0 | 21.3† | 43 | 331.0 | 250 | 9.0 | 345 | 3.81x3.63 |
| Series 60 V8 | 4728‡ | 4540 | 133.0 | 227.3 | 79.8 | 62.0 | 21.3† | 45 | 331.0 | 250 | 9.0 | 345 | 3.81x3.63 |
| Series 75 V8 | 6187‡ | 5015 | 149.8 | 237.1 | 79.8 | 63.9 | 21.3† | 52 | 331.0 | 250 | 9.0 | 345 | 3.81x3.63 |
| IMPERIAL | | | | | | | | | | | | | |
| V8 | \$4483‡ | 4565 | 130.0 | 223.0 | 79.1 | 61.2 | N.A. | 45 | 331.0 | 250 | 8.5 | 340 | 3.81x3.63 |

NOTES AND EXPLANATIONS

All specifications, except the Metropolitan, are for four-door sedan models. All dimensions are in inches except turn-circle diameter (whole number of feet) and displacement (cubic inches). Torque is in pound feet. Prices include all charges except freight, state and local sales taxes and optional equipment.

† Two-door hardtop. No four-door model available.

Ⓞ Estimated

‡ Automatic transmission included in this price

‡ Power steering standard and included in price

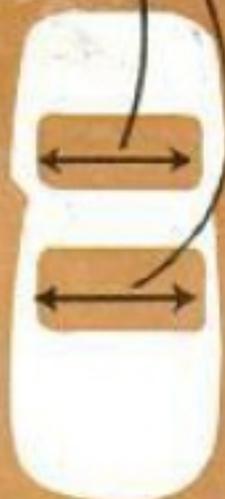
* Power packs available: Chevrolet 180 hp.; Ford 182 hp.; Plymouth 177 hp.; Dodge 193 hp.; Nash Statesman 110 hp.; Nash Ambassador 140 hp.; Hudson Wasp 114 hp.; Hudson Homet Six 170 hp.

FOR INTERIOR DIMENSIONS SEE PAGE 168

COMPARE THE 1955 CARS

AVE.

HIP-ROOM



AVE.

HEAD-ROOM



AVE.

LEG-ROOM

FRONT-SEAT ROOM

| HEADROOM (inches) | LEGROOM (inches) | HIPROOM (inches) |
|-------------------|---------------------|-------------------|
| Hudson | Kaiser | Hudson |
| Nash | Chrysler | Nash |
| Packard | DeSoto | Buick Super |
| Buick Super | Imperial | Buick Roadmaster |
| Cadillac 75 | Dodge | Cadillac 75 |
| Rambler | Plymouth | Cadillac 62 |
| Clipper | Ford | Cadillac 60 |
| Studebaker | Lincoln | Chrysler |
| Buick Roadmaster | Rambler | DeSoto |
| Cadillac 62 | Mercury | Kaiser |
| Cadillac 60 | Buick Roadmaster | Clipper |
| Kaiser | Mercury Montclair | Packard |
| Chevrolet | Clipper | Buick Special |
| Buick Special | Packard | Buick Century |
| Buick Century | Cadillac 75 | Dodge |
| Oldsmobile | Cadillac 62 | Imperial |
| Pontiac | Cadillac 60 | Plymouth |
| Dodge | Buick Super | Lincoln |
| Lincoln | Chevrolet | Oldsmobile |
| Mercury | Oldsmobile 88 | Chevrolet |
| Ford | Oldsmobile Super 88 | Pontiac |
| Chrysler | Oldsmobile 98 | Willys |
| DeSoto | Pontiac | Mercury |
| Imperial | Hudson | Mercury Montclair |
| Plymouth | Nash | Ford |
| Willys | Studebaker | Rambler |
| Mercury Montclair | Buick Special | Studebaker |
| | Buick Century | |
| | Willys | |

REAR-SEAT ROOM

| HEADROOM (inches) | LEGROOM (inches) | HIPROOM (inches) |
|---------------------|---------------------|---------------------|
| Hudson | Cadillac 75 | Buick Super |
| Nash | Packard | Buick Roadmaster |
| Packard | Imperial | Cadillac 62 |
| Pontiac | Cadillac 62 | Cadillac 60 |
| Cadillac 62 | Cadillac 60 | Hudson |
| Cadillac 60 | Buick Roadmaster | Nash |
| Rambler | Buick Super | Chrysler |
| Chevrolet | Dodge | Kaiser |
| Buick Super | Chrysler | Pontiac |
| Buick Roadmaster | Plymouth | Chevrolet |
| Cadillac 75 | Oldsmobile Super 88 | Dodge |
| Studebaker | Oldsmobile 98 | Plymouth |
| Dodge | Clipper | Buick Special |
| Lincoln | Oldsmobile 88 | Buick Century |
| Imperial | Lincoln | Oldsmobile 88 |
| Oldsmobile 88 | Mercury | Lincoln |
| Plymouth | Pontiac Chieftain | Oldsmobile Super 88 |
| Chrysler | Pontiac Star Chief | Oldsmobile 98 |
| DeSoto | Ford | Clipper |
| Ford | Buick Special | Imperial |
| Mercury | Buick Century | Packard |
| Willys | Studebaker Pres. | Willys |
| Buick Special | Chevrolet | Mercury Montclair |
| Buick Century | Mercury Montclair | Ford |
| Clipper | Hudson | Mercury |
| Kaiser | Nash | Rambler |
| Oldsmobile Super 88 | Kaiser | Cadillac 75 |
| Oldsmobile 98 | Rambler | Studebaker |
| Mercury Montclair | Studebaker Champ | |
| | Studebaker Comdr. | |
| | Willys | |

ENGINE SIZE AND POWER

| DISPLACEMENT (cubic inches) | HORSEPOWER | POUNDS PER HP. (shipping wt. + hp.) |
|-----------------------------|---------------------|-------------------------------------|
| Packard | Packard | Clipper Custom |
| Clipper Custom | Cadillac | Buick Century |
| Lincoln | Chrysler N. Yorker | Chrysler N. Yorker |
| Cadillac | Imperial | Clipper |
| Chrysler N. Yorker | Buick Century | Packard |
| Imperial | Buick Super | Buick Super |
| Oldsmobile | Buick Roadmaster | Cadillac 62 |
| Buick Century | Clipper | Mercury Montclair |
| Buick Super | Lincoln | Buick Roadmaster |
| Buick Roadmaster | Oldsmobile Super 88 | Cadillac 60 |
| Clipper | Oldsmobile 98 | Imperial |
| Chrysler Windsor | DeSoto Fireflite | Studebaker Pres. |
| Mercury | Mercury Montclair | Oldsmobile Super 88 |
| DeSoto | Buick Special | Lincoln |
| Pontiac | Chrysler Windsor | Dodge Royal V8 |
| Ford V8 | Mercury | Chevrolet V8 |
| Dodge V8 | DeSoto Fire dome | Oldsmobile 98 |
| Chevrolet V8 | Oldsmobile 88 | Dodge Coronet V8 |
| Buick Special | Dodge Royal V8 | Plymouth V8 |
| Plymouth V8 | Pontiac | Pontiac Chieftain |
| Studebaker Pres. | Dodge Coronet V8 | DeSoto Fireflite |
| Nash Ambassador 6 | Studebaker Pres. | Pontiac Star Chief |
| Chevrolet 6 | Plymouth V8 | Buick Special |
| Dodge 6 | Chevrolet V8 | Ford V8 |
| Plymouth 6 | Ford V8 | Cadillac 75 |
| Kaiser 6 | Kaiser 6 | Oldsmobile 88 |
| Willys 6 | Studebaker Cmdr. | DeSoto Fire dome |
| Studebaker Cmdr. | Chevrolet | Chrysler Windsor |
| Ford 6 | Powerglide 6 | Studebaker Comdr. |
| Nash Statesman 6 | Nash Ambassador 6 | Chevrolet |
| Rambler 6 | Chevrolet | Powerglide 6 |
| Studebaker Champ | Handshift 6 | Kaiser 6 |
| | Dodge 6 | Willys 6 |
| | Ford 6 | Chevrolet |
| | Plymouth 6 | Handshift 6 |
| | Willys 6 | Ford 6 |
| | Studebaker Champ | Dodge 6 |
| | Nash Statesman 6 | Plymouth 6 |
| | Rambler 6 | Studebaker Champ |
| | | Rambler 6 |

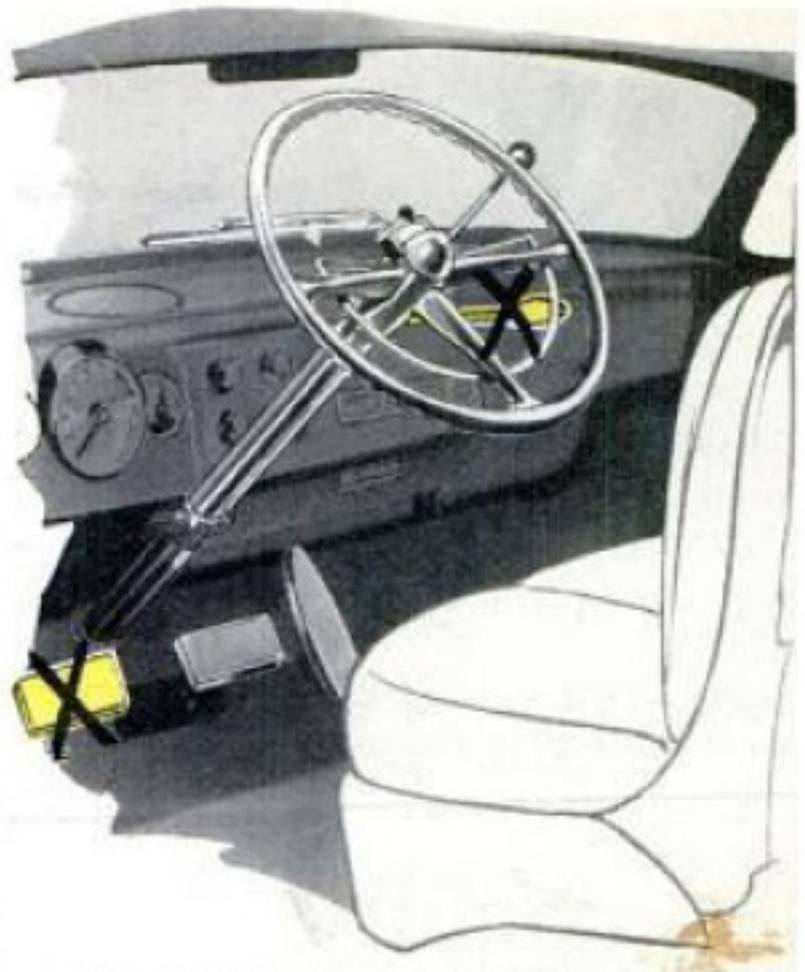
Note: Data on Nash and Hudson V8 engines not available

WHAT MAKES AUTOMATIC TRANSMISSIONS AUTOMATIC?

By Ed Packer

NOW THAT MOST CARS are equipped with automatic transmissions that require simply placing a speed-selector lever in one position and leaving it there for most driving conditions, the clutch pedal and gearshift lever are fast becoming as obsolete as running boards. But, what makes an automatic transmission automatic?

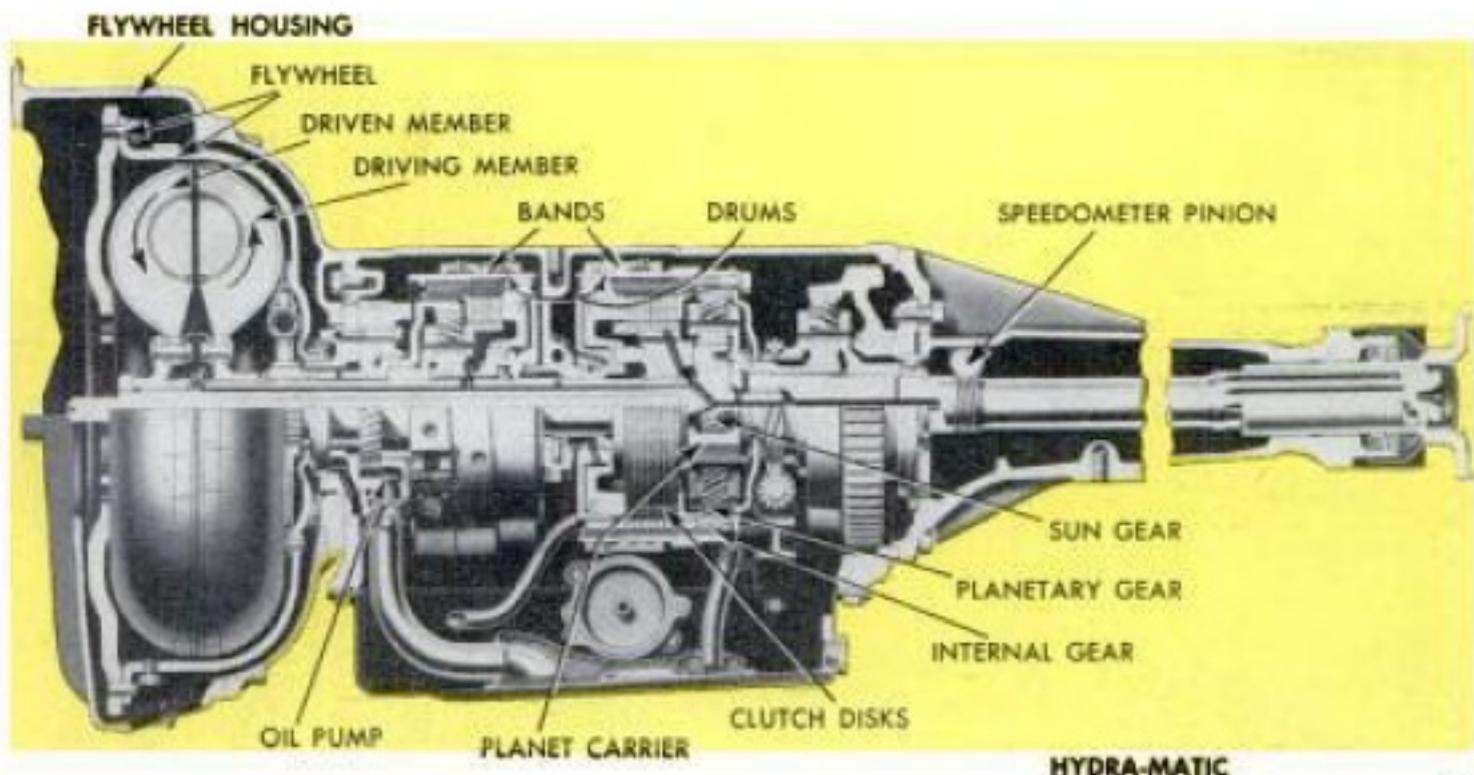
All automatic transmissions have three main parts. The first part is a fluid coupling or a torque converter, which replaces the conventional friction clutch. However, some of these transmissions retain a friction clutch which is located between the engine and the fluid coupling or torque converter. It is automatically released and engaged by hydraulic controls. At high speeds it is engaged for direct drive and the torque converter is ineffective. The second part of an automatic transmission is the gearing; planetary-gear sets replace the conventional sliding gears. The third, and most important, part of an automatic transmission is the hydraulic controls. Hydraulic controls make an automatic transmission truly automatic.



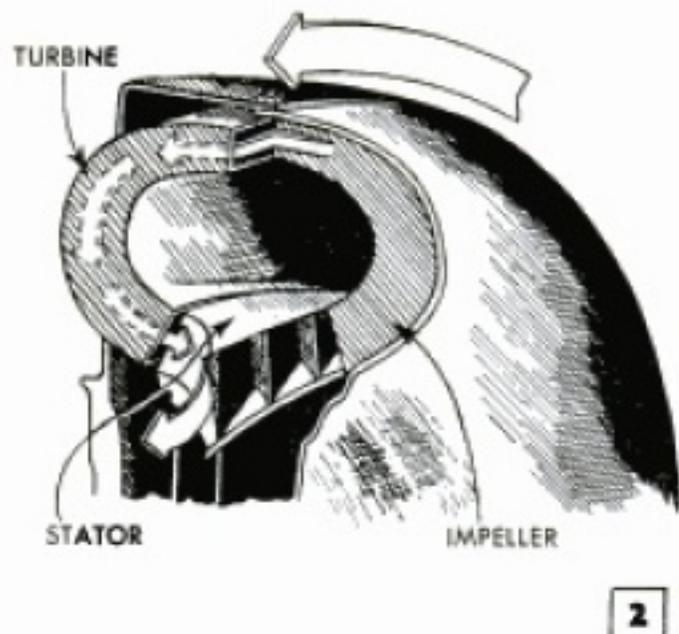
Disregarding friction clutches, which differ in operation from conventional clutches only because they are engaged and disengaged automatically, the first part of an automatic transmission will be either a fluid coupling or a torque converter.

The action of a fluid coupling generally is described as two fan blades facing each other in a closed housing containing oil. When one fan, the driving impeller which is connected to the motor, rotates, it forces oil against the other blade, the driven turbine which is connected to the transmission gears, and causes it to rotate.

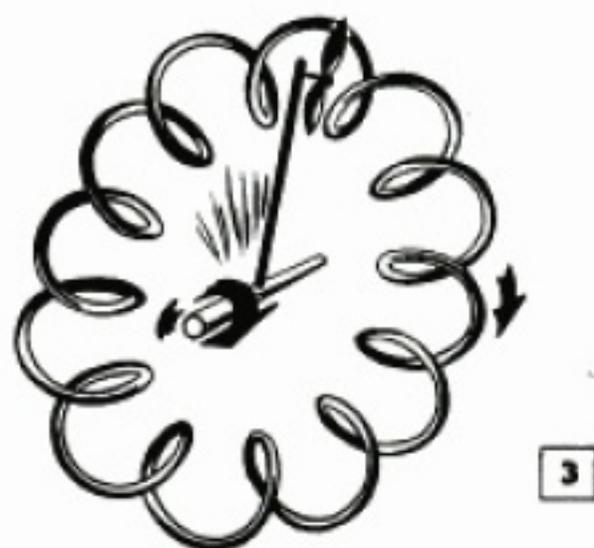
The fluid coupling and torque converter



HYDRA-MATIC



Figs. 2 and 3 show oil flow in torque converter. In Fig. 3, pin-wheel tips represent flow



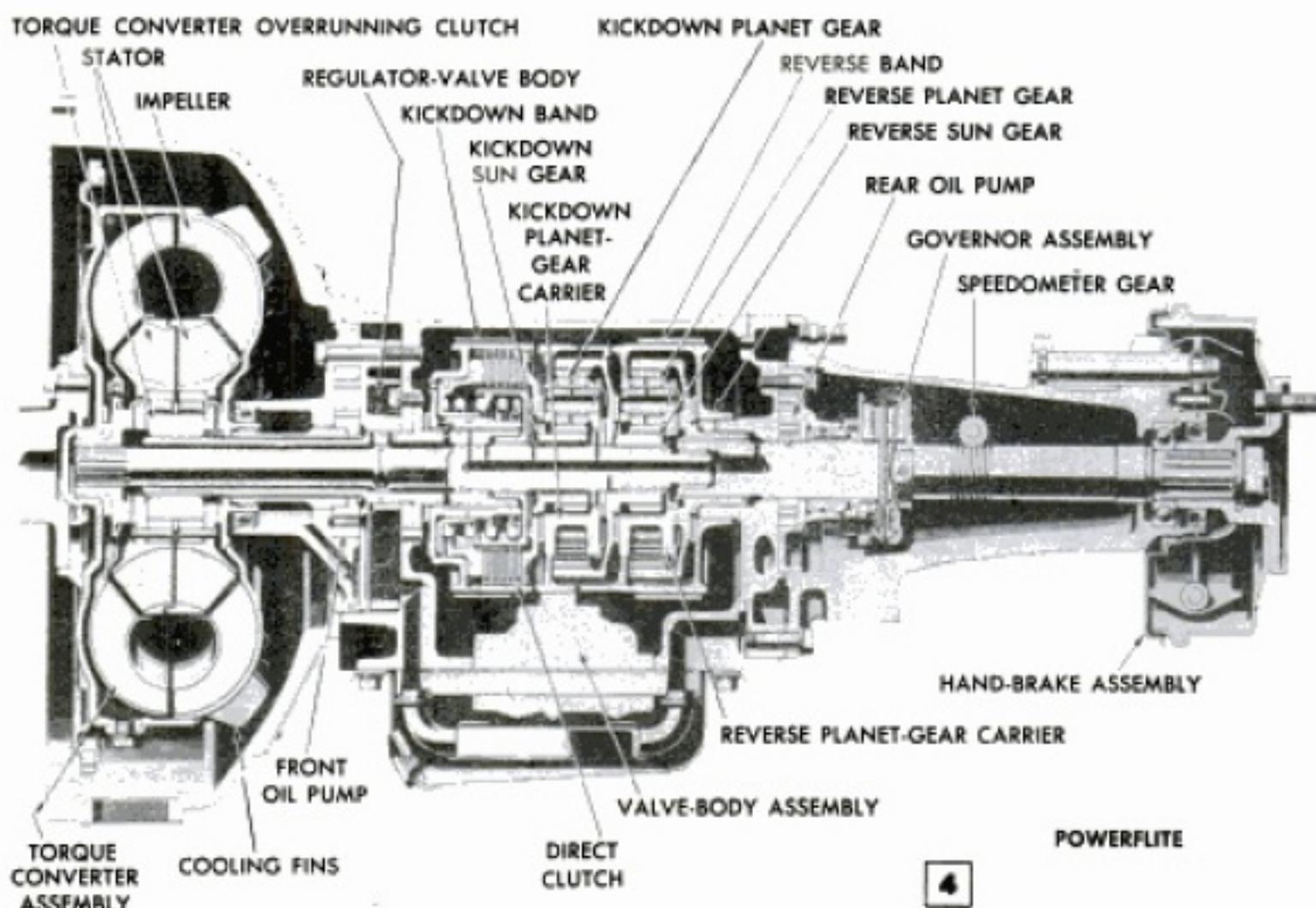
are similar in that both include a driving impeller and driven turbine, which receives the power for transmission. The main difference between the two is the use of one or more reaction members, called stators, in the torque converter. The stators have curved blades which change the direction of the oil. As shown in Fig. 2, oil leaving the turbine is discharged through the stator blades in a direction more nearly paralleling the direction of the rotation of the impeller. The oil then recirculates through the impeller and goes back through the turbine.

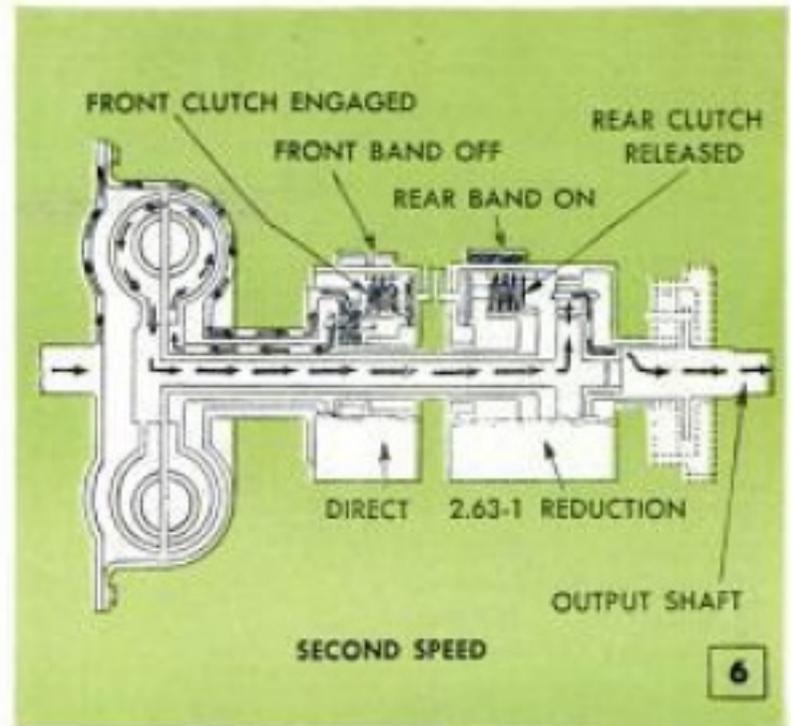
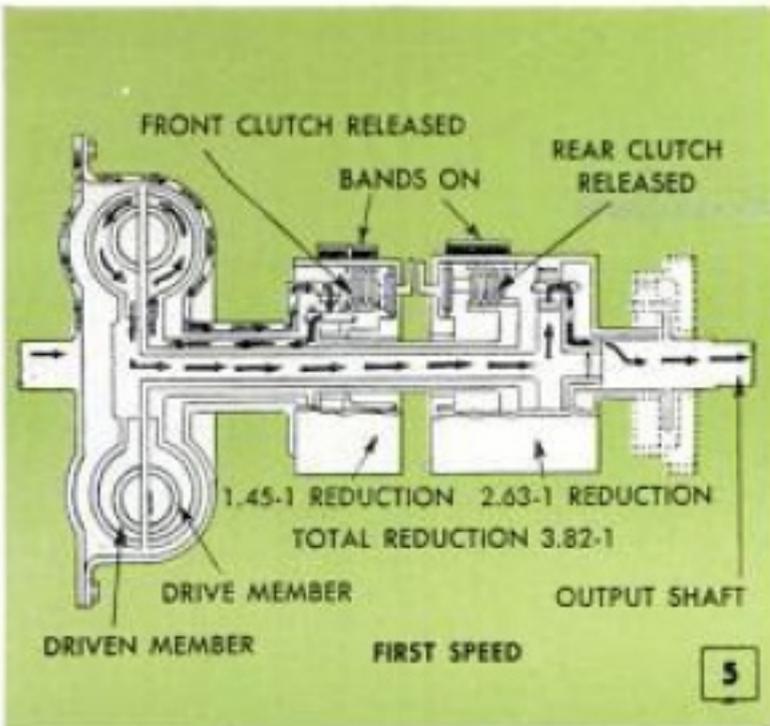
One late-model transmission has variable-pitch stator blades which function much like the blades on a variable-pitch airplane propeller. The pitch is controlled by the position of the foot throttle.

Fig. 3 is a rough diagram, showing the oil flow inside a torque converter, the tips of the pin wheel representing the flow of oil through the impeller to the turbine and back through the stator blades as the torque-converter assembly rotates.

Since the oil discharged into the impeller from the stator is already in motion, when it leaves the impeller it will have the energy added by the impeller, plus the energy it had when it entered. This is the reason for the seeming paradox of getting more torque from a torque converter than is originally given it by the engine.

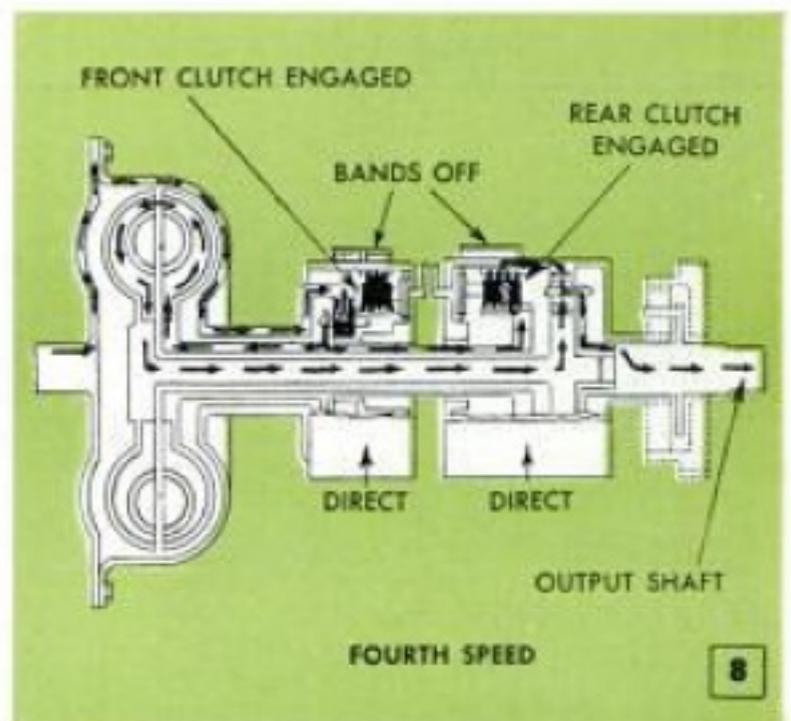
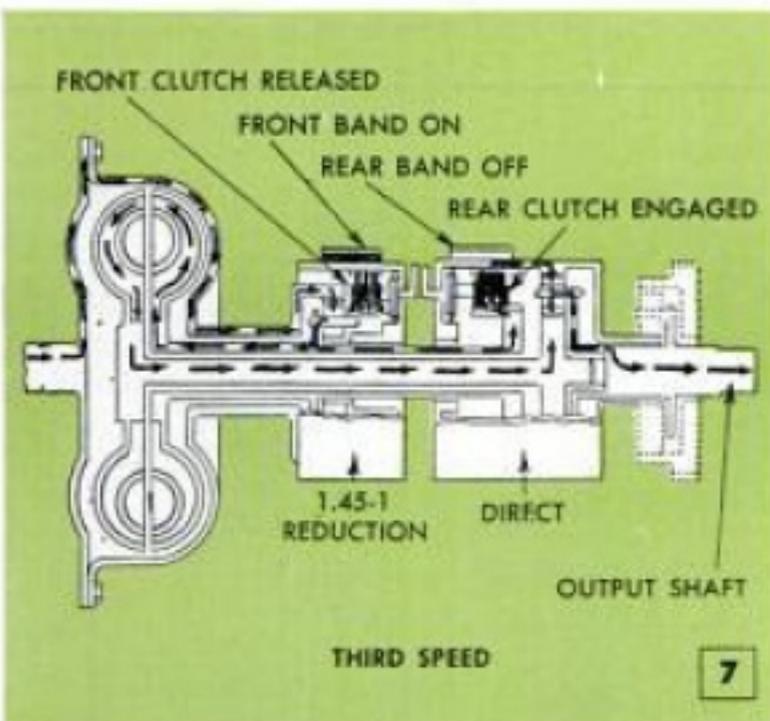
As the turbine speed approaches that of the impeller, stator torque drops off toward zero; the effect being somewhat like a man pushing a sled down a snowy hill. At first he would push hard, then, as the sled picked up speed, it would run away from him. Because of this type of





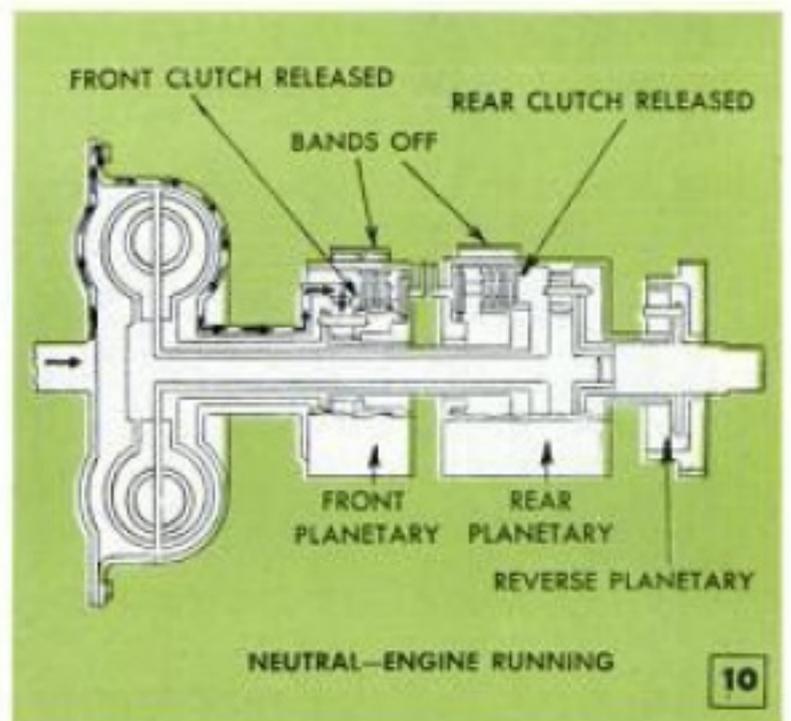
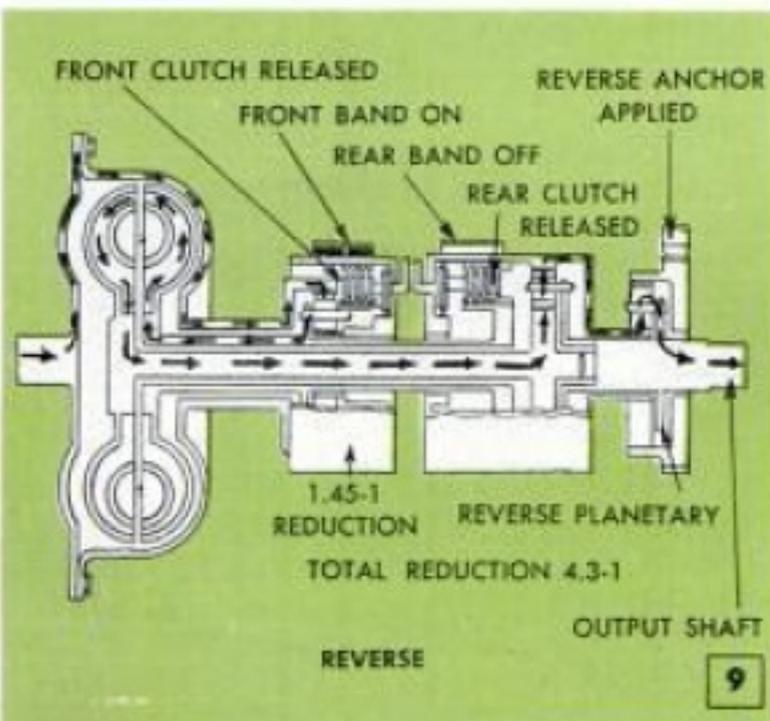
The sketches on this page show the paths of power flow through an automatic transmission with fluid coupling, two forward and one reverse planetary gear

Fig. 5 is first gear. Both bands on, both clutches off. Second speed, Fig. 6, has rear band and front clutch engaged, front band and rear clutch are released



Third speed, Fig. 6, reverses the setting of second. In third, the front band and rear clutch are engaged, front clutch and rear band released. For reverse, Fig. 9, below, reverse planetary is anchored, front band on

Fourth speed, Fig. 8, is direct drive. Both bands are off, both clutches engaged. Fig. 10, below, shows neutral. Both clutches off, both brake bands released. Reverse planetary gear idles except when anchored



COMPARISON OF AUTOMATIC TRANSMISSIONS

| Name of Unit | Cars Using | Type of Fluid Drive COUPLING | Drive CONVERTER (No. of Elements) | Positive Clutch | Torque Converter | Multiplication Available (to One) PLANETARY GEARS | | | | | | | | | | |
|--------------|--|------------------------------|-----------------------------------|-----------------|------------------|---|------|------|------------|---|------------|------|------|------|------|------|
| | | | | | | 1st | 2nd | 3rd | 4th | | | | | | | |
| Hydra-Matic | Cadillac Hudson (Jet) Kaiser Lincoln Nash Oldsmobile Pontiac Willys | X | — | No | — | 3.82 | 2.63 | 1.45 | 1 | | | | | | | |
| | | | | | | | | | | Dynaflow | Buick | X -4 | No | 2.45 | 1.82 | 1 |
| | | | | | | | | | | Ultramatic | Packard | X -4 | Yes | 2.55 | 1.82 | 1 |
| | | | | | | | | | | Powerglide | Chevrolet | X -3 | No | 2.10 | 1.82 | 1 |
| | | | | | | | | | | Studebaker | Studebaker | X -3 | Yes | 2.15 | 2.31 | 1.43 |
| Fordomatic | Ford | X -3 | No | 2.10 | 2.44 | 1.48 | 1 | | | | | | | | | |
| Merc-O-Matic | Mercury Chrysler | X -3 | X -3 | No | 2.10 | 2.44 | 1.48 | 1 | | | | | | | | |
| | | | | | | | | | PowerFlite | DeSoto Dodge Plymouth Imperial | X -3 | No | 2.60 | 1.72 | 1 | |
| Hudson | Wasp Hornet | X -3 | Yes | 2.10 | 2.31 | 1.44 | 1 | | | | | | | | | |

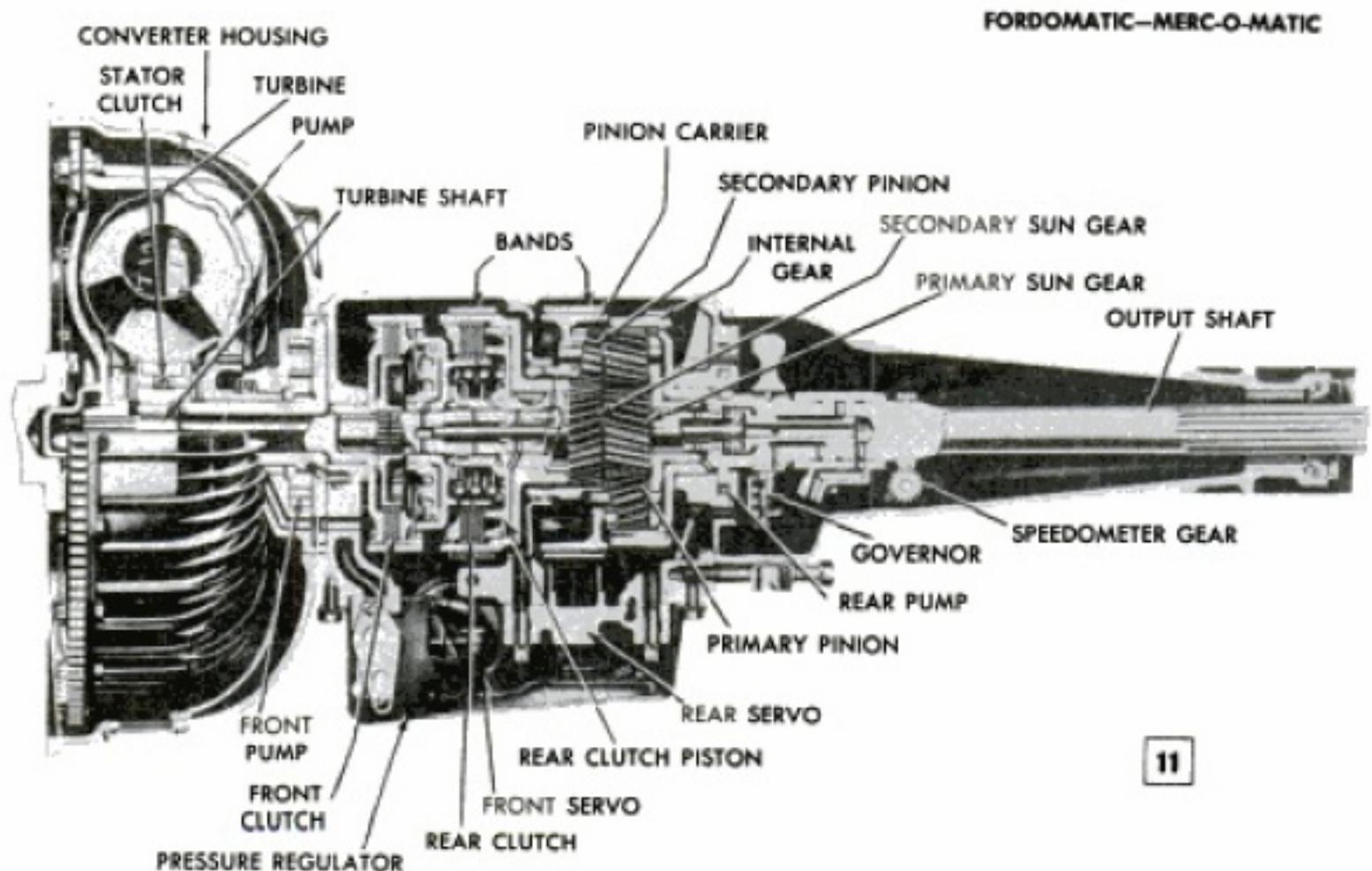
characteristic, the stator has an over-running clutch that permits it to turn freely when it no longer provides a boost in torque. The torque converter then functions very much like a fluid coupling.

All automatic transmissions contain one or more planetary-gear sets, Figs. 12 and 13. The planetary gear consists of a center, or sun, gear, one or more planet gears (usually three) meshing with the sun gear and an internal gear whose teeth mesh with the planet gears. The planet gears are held by a planet carrier which permits

them to rotate on their own shafts. Thus, the sun gear, planet gears and internal gear all can rotate on their own shafts and also rotate around or inside each other.

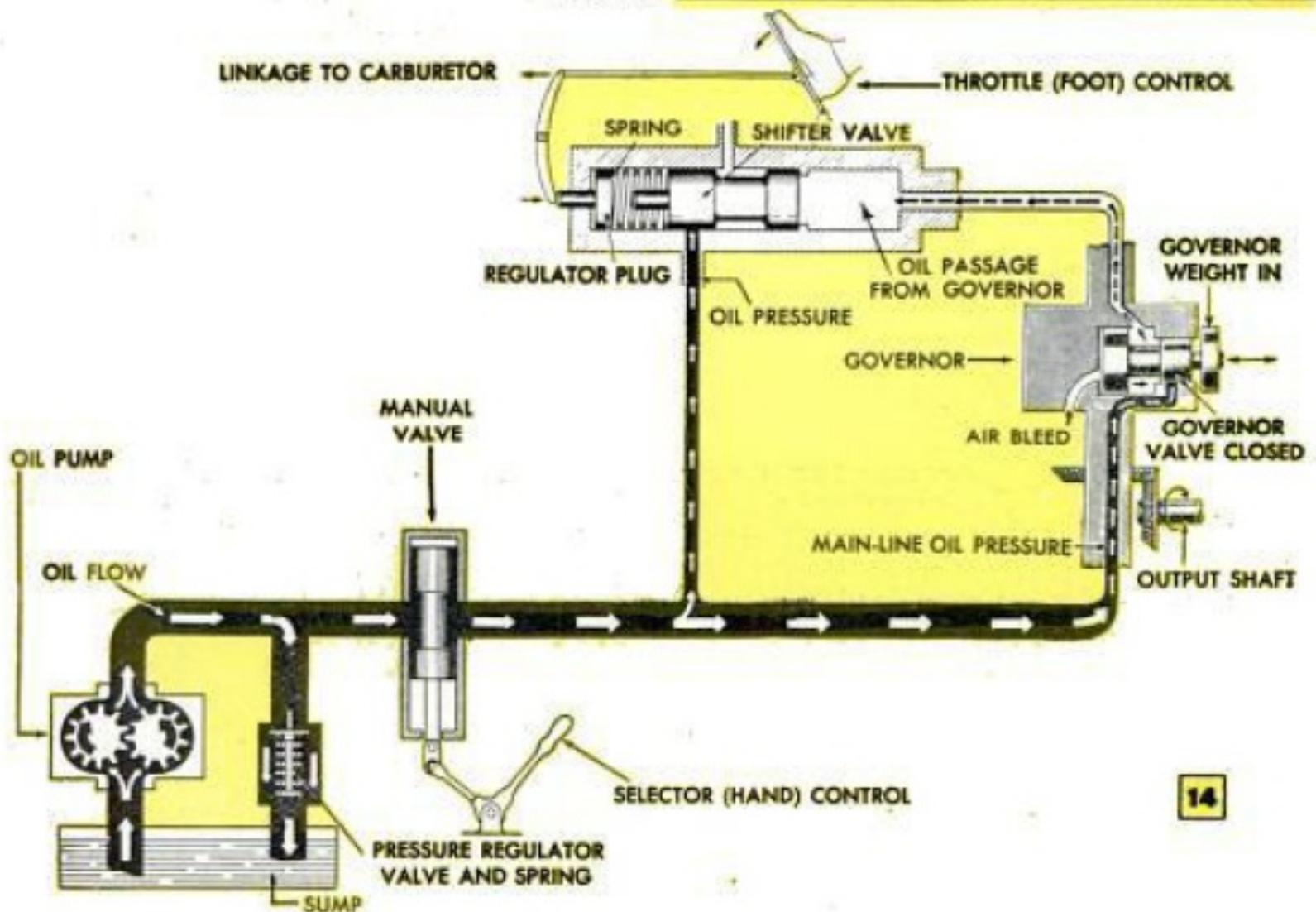
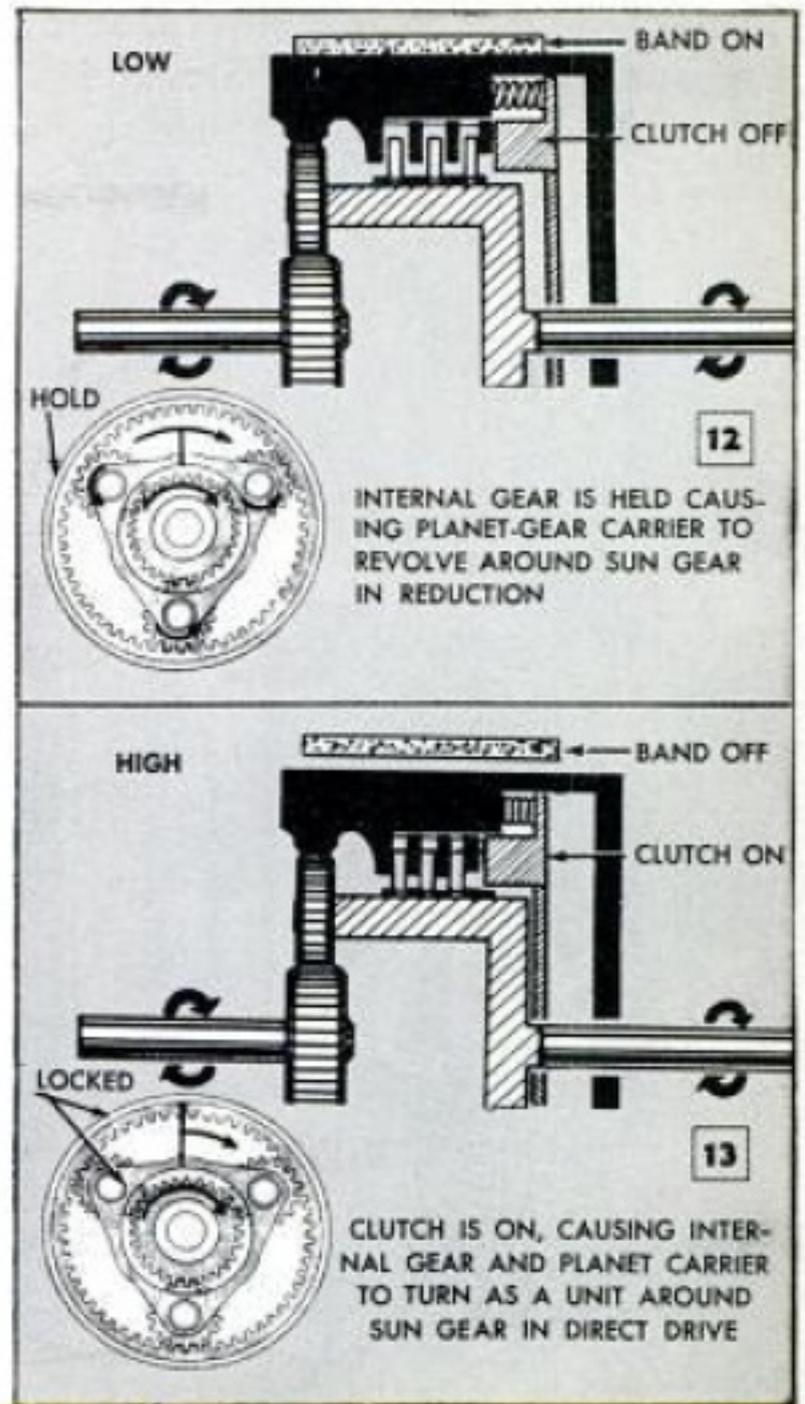
In one automatic transmission, the sun gear is fastened to the input, or driving, shaft, while the planet carrier is fastened to the output, or driven, shaft. Other transmissions use various arrangements in coupling the parts of the planetary gears to the driven shaft and driving shaft.

A brake band is placed around the outside of the internal gear, so it can be held



stationary when desired. A multiple-disk clutch is fitted in the planetary-gear set to permit locking the planet carrier to the internal gear. A three-planetary-gear, including reverse, transmission is illustrated in Figs. 5 to 10, inclusive. Basically, when both brake band and clutch are released, a planetary gear is in neutral, Fig. 10. When the internal gear is held with the brake band, Fig. 12, the planet gears revolve around the sun gear inside the internal gear, resulting in a reduction of movement and an increase in torque to the rear wheels. When the brake band is released and the planet-gear carrier and internal gear are locked together with a multiple-disk clutch, Fig. 13, they turn as a unit with the sun gear, providing direct drive.

The third part of an automatic transmission is the hydraulic controls, Fig. 14. Oil, under pressure, must be available to actuate the various controls. It is kept at a constant pressure by a pressure-regulator valve in the hydraulic-control system. Maintaining this pressure is one of the reasons an automatic transmission requires extra engine power. The selector lever on the steering column controls the manual valve which directs the oil to the proper location for the desired speed or direction. Speed changes also can be made by using the foot throttle, which sometimes is linked directly to a shifter valve, Fig. 14. The shifter valve provides a means of down-shifting when extra acceleration is needed.



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