THE VICTORIA COUPE • *Model Sixty-Eight . . . with built-in trunk*

BUICK DEPENDABILITY FEATURE . . . 15

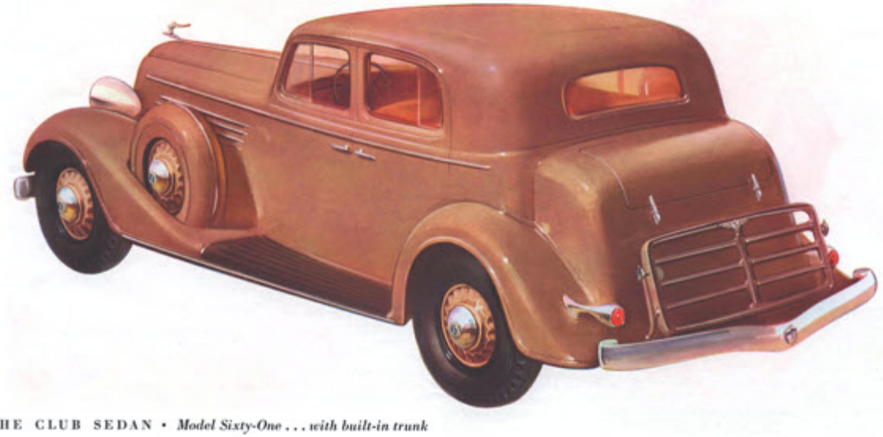
★ Starting a Buick is so easy that the driver is scarcely conscious of the operation. Simply turn on the ignition switch, press the accelerator, and the car is started automatically. That is all there is to it . . . and that is one reason why women find a Buick so easy to handle, so simple to drive.

The Coupe is fast adding to its popularity, because it is so convenient to handle, so easy to get in and out of because of the wide doors and folding seats. That is why this Victoria Coupe with built-in trunk is such a popular model The interior is extremely roomy and comfortable. Fisher No Draft Ventilation assures an adequate supply of fresh air throughout the body of the car at all seasons.

This Club Sedan, with built-in trunk, was recently introduced by Buick. It is a car of style and distinction with utility; a beautiful, roomy four-door sedan with a recess cut in at bottom of back of front seat, giving more leg room and foot room in the rear compartment. There is a spacious trunk at the rear. Center arm rest; arm rests for driver and front seat passenger; large package compartment; concealed type window curtains—these are only a few of the comfort and convenience features offered by this fine car.

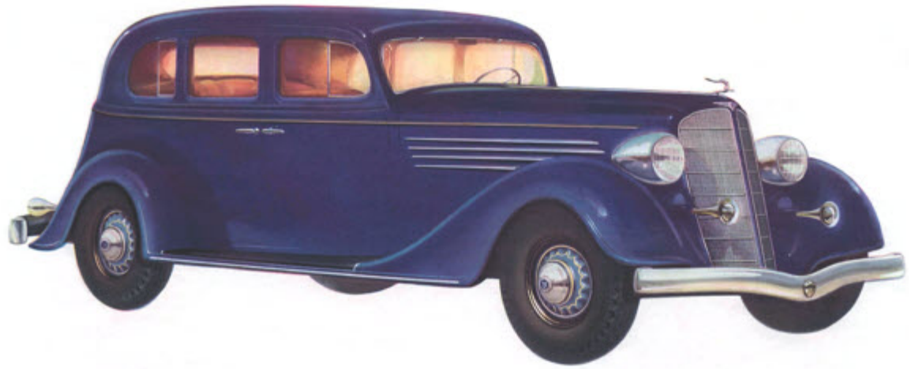
BUICK DEPENDABILITY FEATURE . . . 16

★ An easily operated, absolutely positive braking system is a distinctive Buick feature. The brakes in the 50, 60, and 90 Series are vacuum power operated through a vacuum Servo mechanism, which gives the driver complete control of the brakes at exceedingly low brake pedal pressure. The brake drums are made of cast iron in one piece; ample cooling fins provide dissipation of heat when applying brakes.



THE CLUB SEDAN • *Model Sixty-One . . . with built-in trunk*

THE FOUR-DOOR SEDAN • *Model Sixty-Seven*



BUICK DEPENDABILITY FEATURE . . . 17

★ Silence, easy shifting, safety, and long life feature Buick's all-silent Syncro-Mesh transmission. "All silent" means that wide helical gears operate quietly in all speeds—first, second, high, and in reverse as well. Shifting from first to second to high is accomplished without clash, regardless of car speed. Longer life than usual is built into the gears and their extra heavy bearings.

This big, roomy Five-Passenger Four-Door Sedan is one of the most popular of all Buick models. For, at a moderate price, it is one of the biggest cars in the fine car field—a marvelous value in style, comfort, performance, and dependability. A new feature in this model, as well as in models 61 and 68, is a wide, comfortable center arm rest in the rear seat. Upholstery is the finest quality whipcord or mohair velvet. Truly a car for family use, as it offers so much interior roominess. Fisher No Draft Ventilation, of course.

Here is a smart, distinctive Sport Coupe with ample room for two people and with an extra wide emergency seat in the rear for two passengers. The front compartment provides plenty of leg room for driver and passenger. There are generous, comfortable arm rests. Fisher No Draft Ventilation is an outstanding safety and comfort feature of this really fine car. Choice of fine quality mohair velvet or whipcord for the upholstery. Leather is available at slight extra cost.

BUICK DEPENDABILITY FEATURE . . . 18

★ Radiator, front fender, and head lamps are so mounted on a Buick that frame movement is not transferred to these units. This eliminates front end shake and gives the driver a marvelous feeling of the car's stability. The longer you drive a Buick, the more impressed you will be with its remarkable steadiness on the road.

THE SPORT COUPE • *Model Sixty-Six S . . . with rumble seat*

THE CONVERTIBLE COUPE • *Model Sixty-Six C . . . with rumble seat*

BUICK DEPENDABILITY FEATURE . . . 19

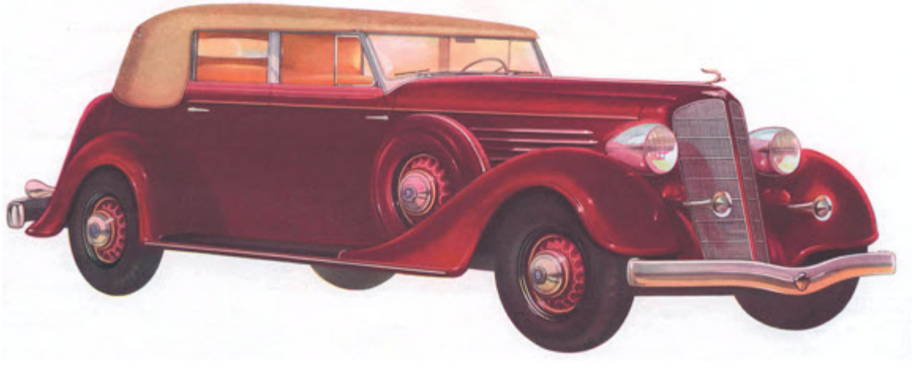
★ All Buicks of today, except the 40 Series, are equipped with an oil temperature regulator pioneered by Buick. It heats the oil quickly in cold weather and keeps the oil cool in hot weather while the car is being driven at sustained high speeds. There are no moving parts to get out of order. You can depend upon its uniform, unvarying operation, if thoroughly cleaned every 20,000 miles.

This is a smart, stylish Convertible Coupe with long, low top lines and a sweeping deck blending gracefully with the radiator hood and full-skirted fenders, creating a new style among cars of this type. Windshield posts, brackets, and fittings are chrome plated. Seats are trimmed with weatherproof tan whipcord or hand-buffed leather in a color to harmonize with the color of the car. A splendid value for those who occasionally like the freedom of a roadster but do not want, entirely, to give up the convenience of a coupe.

No car could give greater all-around satisfaction than this beautiful Five-Passenger Convertible Phaeton with its long, low streamline body by Fisher, its smart fender well equipment and spacious built-in trunk. The tailored top is easily operated, and when down folds close to the car. There is storage space back of the rear seat for removable center pillar; top boot is standard equipment. This is one of the finest cars that Buick offers, especially from the standpoint of graceful body lines and modern styling.

BUICK DEPENDABILITY FEATURE . . . 20

★ The interior is exceptionally roomy and comfortable, with all the advantages of a closed car when the top is up and the freedom of an open car when the top is down. Notice the extra long arm rests in the rear seat, especially the folding arm rest in the center; there are also arm rests for driver and front seat passenger too. Upholstery, choice of tan whipcord or hand-buffed leather.



THE CONVERTIBLE PHAETON • *Model Sixty-Eight C . . . with built-in trunk*

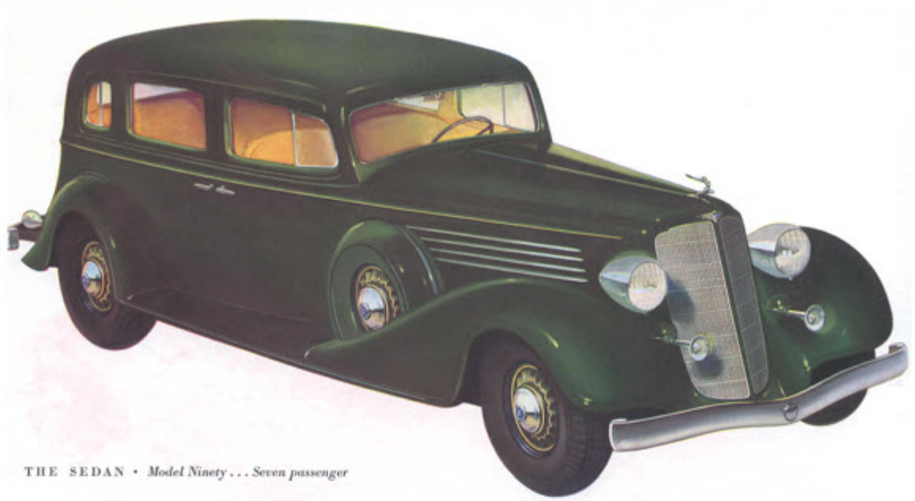
BUICK DEPENDABILITY FEATURE . . . 21

★ All the interior hardware of today's Buick—dome lights, ash trays and lighters, robe rails, control handles, light switches—are of a design to harmonize with the car's beautiful, luxurious interior and its smart, modern streamlined exterior. Besides the practical utility of such little conveniences, they also add tremendously to the pleasure and satisfaction of motoring in a Buick.

Beauty, style, and roominess are so pronounced in the interiors of the 90 Series that the most discriminating taste is fully satisfied. Walnut finish mouldings; paneled side and door trimmings; side corner lights; ash trays and cigar lighters; long, comfortable side arm rests; a wide, long, center arm rest in the rear seat; deep velvet pile carpets in front and rear compartments—these are only a few of the comfort and luxury features which contribute to the really fine cars in this group of de luxe models.

BUICK SERIES 90

THE 90 Series so definitely emphasizes every fine Buick quality that it may well be considered a de luxe series from every standpoint. Buick engineers have spared no care or expense to provide features of construction and design which are associated only with custom-built models. Indeed, in many essential details, these eight models may be said to equal the smartest custom-built cars. If your taste or your requirements demand a car of this type, you need look no further. Each car in this series reflects a modern, aristocratic atmosphere that makes it a truly amazing value for the family who would enjoy one of the finest cars that the automobile world has to offer. As you study the various models, you undoubtedly will find the one car you have always dreamed of owning and which, now, you *can* own because, while all are custom-built in effect, they are priced much lower than you might imagine. Indeed, this fine series makes it unnecessary for the Buick owner who would "step up" to choose anything but a Buick for his next car; for embodied in these cars are all the fundamental features for which Buick is notable—plus the size, elegance, and smartness that you might expect to find in the very finest cars at the highest prices.



THE SEDAN • *Model Ninety . . . Seven passenger*

BUICK DEPENDABILITY FEATURE . . . 22

★ A fundamental feature of Buick construction is the famous Buick sealed chassis. All moving parts are completely enclosed. This sealed type of construction keeps dirt and water from the moving parts, thereby eliminating the chief causes of wear and corrosion. This assures greater safety and adds many miles to the life of the Buick chassis . . . the firmest foundation a car could have for the utmost stability.

This magnificent car is designed to carry seven passengers without crowding. The interior fittings and the upholstery are such as you would see in a fine home. The seats are deep and wide, upholstered in whipcord, mohair velvet, or broadcloth, at the option of the owner. There is a folding arm rest in the center of the back seat and an abundance of room in both front and rear compartments. Fisher No Draft Ventilation adds to comfort and safety. Safety glass in windshield, windows, and ventilating wings.

This handsome Victoria Coupe, with deck, seats five passengers inside in perfect comfort and is styled in Buick's modern and beautiful windstream manner. Front seat passengers ride in wide, individual folding seats, with high backs, soft springs, deep cushioning, and with an arm rest on each side. Rear seat passengers have a folding arm rest in center. The large deck affords ample space for luggage. A de luxe car in every respect, from its smart styling to its interior roominess and riding ease.

BUICK DEPENDABILITY FEATURE . . . 23

★ For thirty-one years, Buick has used the valve-in-head principle. Today, it is the standard of comparison. The Buick Valve-in-Head Straight Eight Engine is one of the most powerful automobile engines ever built. In the 90 Series, it develops 116 horsepower. It has a bore of 3 $\frac{5}{16}$ inches and a stroke of 5 inches. Its displacement is 344.8 cubic inches, while its compression ratio is 4.95 to 1.

THE VICTORIA COUPE • *Model Ninety-Eight . . . with deck*

By means of sliding glass partition between front and rear compartments, the model 90L serves as a seven-passenger sedan and also as a limousine. Driving compartment upholstery is in the finest of soft hand-buffed leather. The rear compartment is upholstered with the buyer's choice of broadcloth, whipcord, or mohair velvet in the custom type plain style, with side and center arm rests for the rear seat. Folding extension backs give extra comfort to the auxiliary seats, which fold completely when not in use.

BUICK DEPENDABILITY FEATURE . . . 27

★ The Buick power plant, which consists of the Buick Valve-in-Head Straight Eight Engine and Buick's quiet, synchronizing transmission, is mounted at five points on resilient rubber. This, in combination with the Buick X-girder type frame, provides the highest degree of smoothness with stability throughout the life of the car. Surely a dependability feature every motorist can appreciate.

THE FOUR-DOOR SEDAN • *Model Ninety-Seven . . . Five passenger*

THE CLUB SEDAN • *Model Ninety-One . . . with built-in trunk*

BUICK DEPENDABILITY FEATURE . . . 28

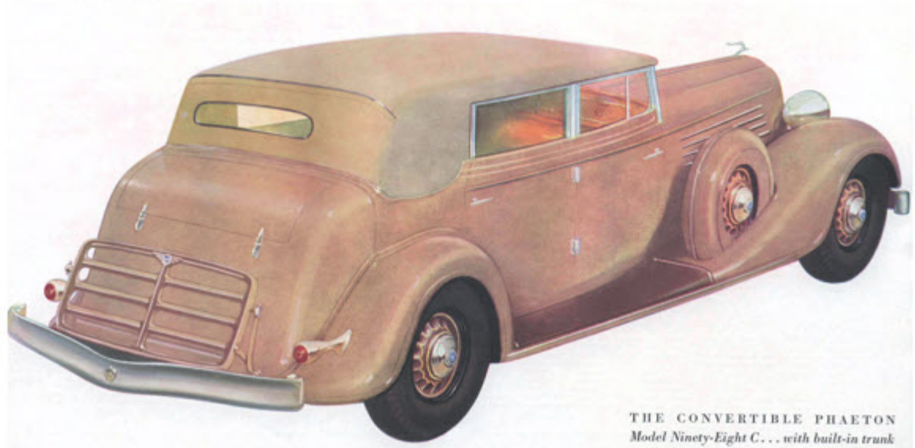
★ Smooth and vibrationless operation is a characteristic of the Buick engine. Two factors which contribute much to this smoothness are the bearings which cradle the heavy, counterweighted crankshaft and the torsional balancer with which the crankshaft is equipped. The five steel-backed main bearings are stepped up in a width from front to rear, giving rigid support to the crankshaft.

In this model, Buick presents the de luxe Club Sedan type, once obtainable only at the cost of a custom body. With four doors, rear quarter windows, and a built-in trunk which harmonizes with the sleek windstream lines of the general design, this is indeed a distinctive car. There is a center arm rest in the rear seat, and the front seat is recessed to give more room in the rear compartment. Here, the buyer has the same choice of upholstery and colors offered throughout the Series 90.

Smart beauty, style, and comfort are the outstanding features of the Five-Passenger Four-Door Convertible Phaeton. There is ample room for five passengers, and the built-in trunk is of generous size. Fisher No Draft Ventilation is an unusual feature in a convertible. When used as an open car, the center pillar above the doors is stored in a space back of the rear seat; and here the top boot is stored when the top is raised. Upholstery options same as for the Convertible Coupe.

BUICK DEPENDABILITY FEATURE . . . 29

★ Four jack pads, one for each wheel, are conveniently placed at the front and rear. The pads are shaped effectively to prevent jack slippage. This is just another feature of efficiency and convenience of which Buick provides so many. Truly, to own and drive a Buick is to enjoy smooth, care-free motoring from every standpoint.



THE CONVERTIBLE PHAETON
Model Ninety-Eight C . . . with built-in trunk
Available with six-wheel fender well equipment only

SPECIFICATIONS

BUICK VALVE-IN-HEAD ENGINE

SERIES 40 - - - *117-inch wheel base*
SERIES 50 - - - *119-inch wheel base*
SERIES 60 - - - *128-inch wheel base*
SERIES 90 - - - *136-inch wheel base*

ENGINE—Series 40, bore and stroke, $3\frac{3}{8}$ x $3\frac{7}{16}$ inches; displacement, 233 cubic inches; horsepower, 93. Series 50, bore and stroke, $2\frac{13}{16}$ x $4\frac{1}{4}$ inches; displacement, 235.3 cubic inches; horsepower, 88. Series 60, bore and stroke, $3\frac{3}{16}$ x $4\frac{5}{16}$ inches; displacement, 278.1 cubic inches; horsepower, 100. Series 90, bore and stroke, $3\frac{7}{8}$ x 5 inches; displacement, 344.8 cubic inches; horsepower, 116.

Electroplated four-ring pistons. Fully counterweighted and torsion-balanced crankshaft. Full-pressure lubrication to main, connecting rod, camshaft, and rocker arm bearings. Oil filter, crankcase ventilator on all series. Oil temperature regulator on series 50, 60, and 90.

FUEL, EXHAUST, AND COOLING SYSTEMS—Marvel carburetor on 50, 60, and 90 Series, Stromberg on 40 Series. Thermostatic heat control, automatic choke, fuel pump, intake silencer and air cleaner. Resonance type muffler. Thermostatically operated by-pass type of water temperature control. Centrifugal water pump. Four-blade fan.

CLUTCH AND TRANSMISSION—Series 40 and 50, $9\frac{1}{2}$-inch single plate; Series 60, $9\frac{7}{8}$-inch single plate; Series 90, 9-inch double plate. Improved all-silent Syncro-Mesh, with nickel chrome helical gears throughout. Three speeds forward and one reverse.

TORQUE TUBE DRIVE—Fully enclosed tubular propeller shaft. Only one universal joint, automatically lubricated from transmission.

SPRINGS AND SPRING SHACKLES—Front, silicon manganese coil type; rear, semielliptic underslung type. Leaves with curled ends. Steel covers, factory equipped, at slight extra cost. Improved threaded type spring shackles.

FRAME—Rigid girder type double drop with X type cross member.

STEERING—Worm and double roller gear.

SHOCK ABSORBERS—Delco-Lovejoy hydraulic. Front and rear, Series 50, 60, and 90, double acting. Series 40, front, double acting; rear, single acting.

BRAKES—Four-wheel Buick Controlled Servo internal expanding. Series 50, 60, and 90 mechanical with vacuum booster. Cast-iron drums. Series 40, mechanical hookup. Pressed steel drums. Braking area, Series 40, 181.28 square inches; Series 50, 176 square inches; Series 60, 205 square inches; Series 90, 264 square inches. Hand brake, same as service.

ELECTRICAL SYSTEM—Delco-Remy, 2-unit, 6-8 volt; with octane selector. Solenoid or electromagnet-operated starter with accelerator and hand throttle control. Multibeam headlights controlled from toe board button and steering column. (Series 40 controlled from toe board button and instrument panel.) Equipped with asymmetrical passing and tilting light. Battery under front seat. All models have built-in distance range radio aerial.

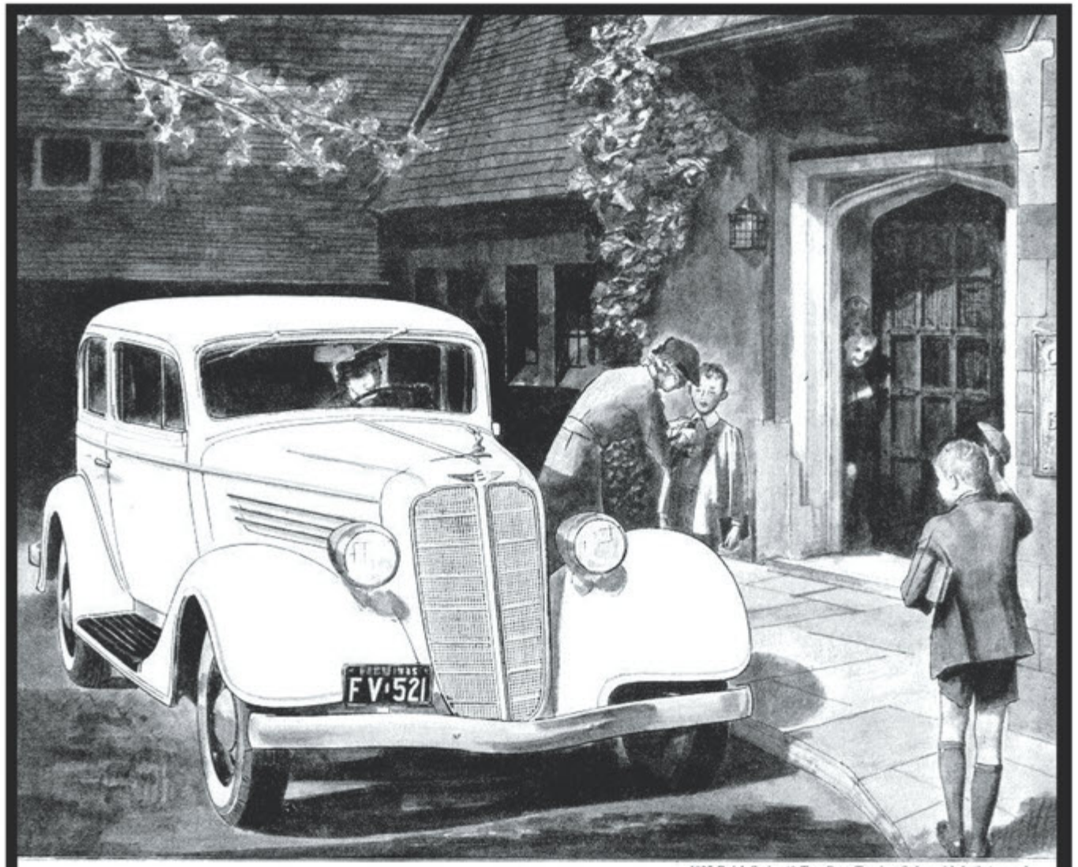
INSTRUMENT BOARD—Walnut finish complete with aviation type instruments: pointer type speedometer, electric gasoline gauge, oil pressure gauge, water temperature indicator, ammeter. Package compartment with lock. Octane selector, ash tray, cigar lighter on Series 50, 60, and 90.

TIRES AND WHEELS—Series 40, 16 x 6.25; Series 50, 16 x 7.00; Series 60, 16 x 7.50; Series 90, 16 x 7.50. Artillery type all-steel wheels. Drop center rims. Wire wheels optional on Series 50, 60, and 90.

EQUIPMENT—Metal drum type tire covers, single bar V type chrome-plated bumpers, rear spring covers, spare tire and lock are factory equipped at extra cost. Safety glass all around is furnished in all models. In the 40, 50, and 60 Series, safety glass in windshield and ventilating wings is included in the list price. There is a slight extra charge for the balance.

SPECIAL EQUIPMENT AS SHOWN—Fender wells and trunk rack, chrome wire or chrome artillery type wheels, ornamental radiator cap, 8-day clock, etc. at extra cost.

The Buick Motor Company reserves the right to make changes in specifications at any time without incurring any obligation to install them on cars previously sold.



1935 Buick Series 40 Two-Door Touring Sedan with built-in trunk. 8-cylinder valve-in-head engine.

LIKE LIGHTNING ON A LIMB !

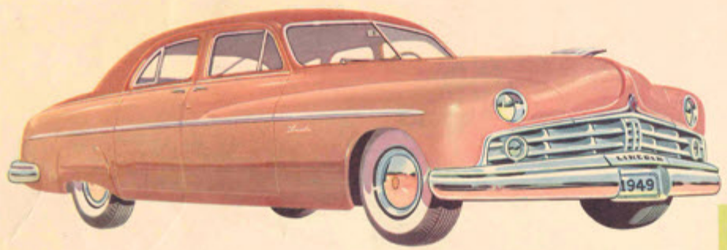
To the person of discernment and enthusiasm who spoke this picturesque headline for the 1935 Buick—our thanks. He had just finished his own demonstration of the newest Buick. The words popped explosively out of his mouth. He knows automobiles, for he's been driving them almost since there were any. He's still young enough and peppy enough to want to "step on it" when there's the chance. Buick's 10-to-60-mile, 21-second pick-up—its 85-mile top—got him. Its sound and stable roadability, its feeling of utter security and its safety brakes are precisely what he wants along with its marvelous performance. Never has he had anything even approaching Buick's Knee-Action gliding ride. He expects to get the gas economy of 15 to 18 miles per gallon which owners are consistently reporting. For he bought one of these Buicks, of course. It's a rare thing for a man or woman to take a demonstration of the newest Buick and successfully resist the buying urge. Try one yourself—and see.

Buick 1935

WHEN BETTER AUTOMOBILES ARE BUILT, BUICK WILL BUILD THEM

PRESENTING TWO GREAT NEW 1949 *Lincolns*

The 1949 *Lincoln*



UNDER the sleek new exteriors of these cars you'll find riding comfort and driving ease that herald a new era in fine motoring.

You'll find "living room comfort" on wheels . . . extra-wide seats . . . relaxing foam-rubber cushions on coaxing coil springs . . . generous head and leg-room . . . a ride that's cradled on completely new springs, "sea-leg" shock absorbers, and super-balloon tires. Colors, upholsteries, appointments—all are the finest.

The LINCOLN Sport Sedan . . . *a roomy 4-door masterpiece that seats 6 grownups with ease. The powerful yet compact, new Lincoln V-type 8-cylinder engine enables placement of seats in the "Comfort-Zone" and provides more useful interior space. The roomy luggage compartment also houses the easy-to-remove spare tire. Picture windows all around offer remarkable visibility.*

The LINCOLN 6-Passenger Coupe. *Here's a "king-sized" 2-door model that's ideal for family or business. It has an extra-large luggage compartment. Wide doors and swing-aside seat backs make for easy "in" or "out" convenience. Wide seats hold three abreast without crowding. Arm rests add to your comfort. Big picture windows and a low hood give you excellent visibility.*

CHOOSE FROM THESE MAGNIFICENT BODY STYLES

IN TWO SEPARATE PRICE RANGES

The 1949 *Lincoln Cosmopolitan*

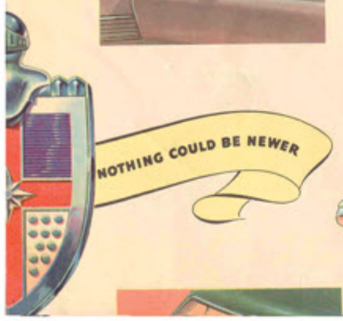
You'll hold the road, on curve or straightaway, without "wind-wander" or side-sway.

You'll discover Lincoln to be a superior performer because of its high "power-to-weight" ratio, its "Touch-O-Matic" overdrive (optional*), its super-sure easy-action brakes.

And as you roll along in your new Lincoln, you'll see admiration in every glance.

Yes—you will be *proud* to own a Lincoln . . . for nothing could be finer . . . or newer.

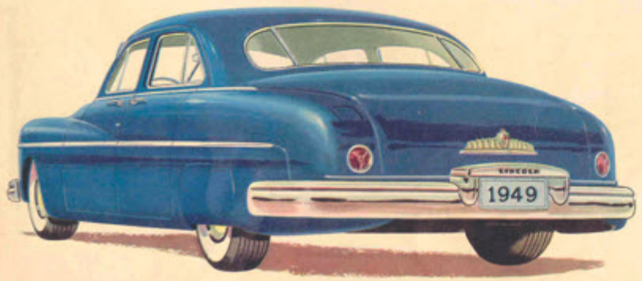
The LINCOLN COSMOPOLITAN Town Sedan. *Here's a dashingly smart 4-door sedan for 6 with graceful streamlined back, super-width seats, foam rubber cushions with coil springs, and a roomy luggage compartment. You'll find the appointments anticipate your needs . . . the rich fabrics will please your eye and touch . . . the glide-ride will thrill you on every trip.*



Look at *Lincoln* for 1949

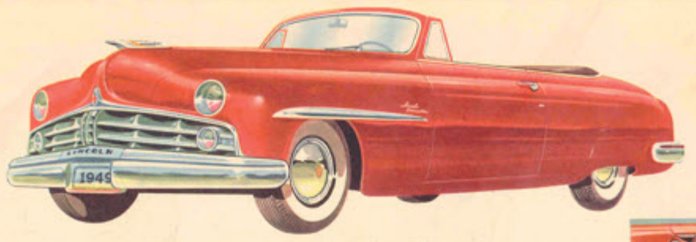
The Lincoln Cosmopolitan

Nothing could be finer – or newer



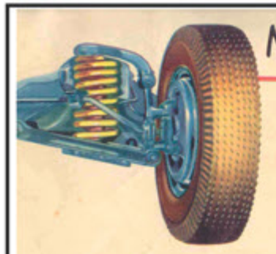
The Lincoln

LITHO IN U.S.A.



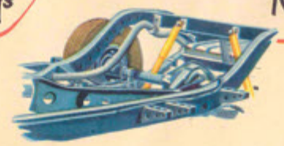
The LINCOLN COSMOPOLITAN 6-Passenger Convertible. *At long last . . . an all-year convertible that meets sunshine or blizzard with a smile. A touch of the top control, and you can change for sun or shower. The double rear window gives greater visibility. Superb leather seats are offered in blue, green, red, yellow, or natural tan, and styled for the smartest surroundings!*

The LINCOLN COSMOPOLITAN 6-Passenger Coupe. *Swing wide the big doors of this really roomy coupe and you'll find room for six 200-pounders to relax in perfect comfort . . . leg-room and elbow room that mean even long trips can be a delight. Windows and front seat operate at the touch of a button. The extra safety of only two doors make it the ideal family car.*



New Front Coil-Springs

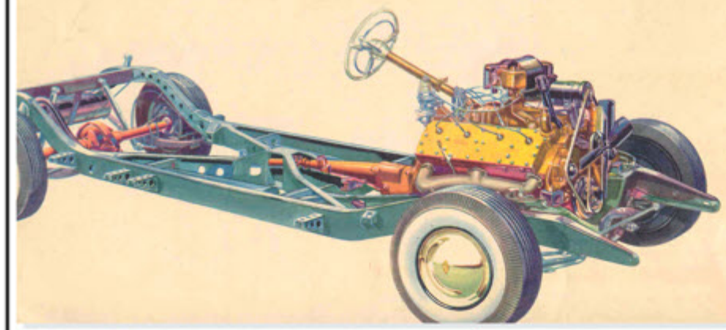
New Front Coil-Springs have hydraulic shock absorbers mounted inside. The individual front-wheel suspension makes for easier riding, plus road-hugging stability. New steering linkage adds remarkable ease of handling.



New Rear Springing

New Rear Springing with extra-long leaf springs and "sea-leg" mounted shock absorbers irons out bumps like magic . . . and cushions both vertical and side-sway shocks. All seats are cradled well forward of the rear axle for "comfort-zone" ride.

Two Sturdy New Chassis



Dimensions: Lincoln—wheelbase, 121 in.; over-all length, 211.5 in.; width, 76.4 in.; height (loaded), 63.6 in.

Lincoln Cosmopolitan—wheelbase, 125 in.; over-all length, 220 in.; width, 77.8 in.; height (loaded), 62.7 in.

Frames: Rigid, heavy steel. Cold-riveted, welded (121"); all-welded (125"). X-member frame with K reinforcement. Convertible frames reinforced for extra body support.

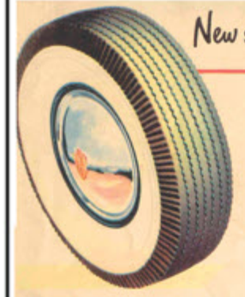
Bodies: All steel, heavily reinforced, with welded steel floor. Insulated against noise and heat. Roomy luggage compartments with counterbalanced lids. All Lincoln Cosmopolitans have hydraulic window lifts and front-seat adjustment; optional on all Lincolns. Both Lincoln and Lincoln Cosmopolitan convertibles have automatic tops.

Wheel Suspension: Independent suspension of front wheels, with coil springs. Telescopic-type shock absorbers mounted inside springs. Rear springs are longitudinal semi-elliptic leaf type with full-length liners which require no lubrication. Telescopic rear shock absorbers are "sea-leg" mounted to cushion both shocks and side-sway.

Drive: Hotchkiss drive with semi-floating rear axles and hypoid ring gears and pinions. Integral hub and axle. Permanently lubricated wheel bearings. Touch-O-Matic overdrive (optional*) reduces engine speed 23%, saving wear, fuel, oil. Single dry-plate clutch has permanently lubricated bearings. Standard silent transmission has synchromiers for quiet, finger-tip shifting. New steering linkage checks road-shock, makes steering easier.

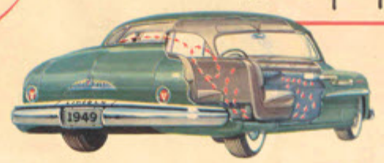
Brakes: "Duo-servo" hydraulic brakes for quick, straight-line stops. Self-energizing action decreases pedal pressure. Cable-type parking brakes operate on rear wheels.

Tires and Wheels: Super-balloon 8.20 x 15 tires mounted on pressed-steel wheels with extra-wide rims provide softer ride, greater safety, more traction.



New super-balloon Tires

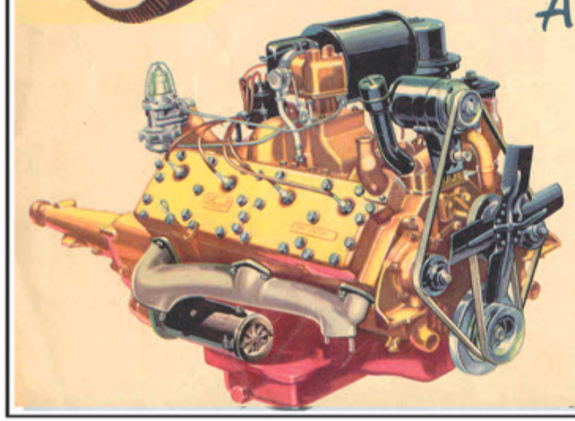
New super-balloon Tires, on extra-wide rims, give a softer ride without side-sway. You're safer, too, because they hold more air at less pressure, and run 15% cooler than ordinary tires. Steering is noticeably easier, and their new-type treads prolong tire life.



New Finger-Tip Weather Control

New Finger-Tip Weather Control offers new year 'round comfort by bringing controlled fresh air into your Lincoln. With the Lincoln heater (optional*), it provides warm fresh air, evenly distributed. No drafts, no window-fogging, no icy windshields, no rain leaks—just plenty of controlled *fresh* air, cool in summer, warm in winter.

A Great New Engine



Rating: The great new Lincoln 8 V-type L-head engine develops 152 horsepower at 3600 rpm. Bore, 3⅛ in.; stroke, 4¾ in. Three-point rubber mounting. Compression ratio, 7 to 1. Counterbalanced crankshaft with three large bearings. Heat-treated aluminum-alloy pistons with steel struts. Two compression and two oil rings. Alloy-steel valve inserts. One-piece valve guides pressed in block.

Lubrication: Gear-type oil pump. Force feed to all main, connecting-rod, and cam-shaft bearings. Heavy-duty oil filter. Sludge-traps in crankshaft. Positive crankcase ventilation minimizes sludging. Oil capacity, 6 quarts.

Cooling System: New full-flow system circulates all coolant around all cylinders and back through head of each side of engine for uniform cooling and longer engine life. Two high-velocity water pumps, permanently lubricated. Full water jacket warms oil in cold weather—cools it on long trips. Permanently lubricated silent fan. Coolant capacity, 34.5 quarts.

Fuel System: Fuel tank capacity: Lincoln, 19¼ gal.; Lincoln Cosmopolitan, 23½ gal. Cam-shaft-driven diaphragm-type fuel pump. Automatic choke. Automatic idling control. Oil-bath air cleaner. New concentric type, dual-down-draft carburetor checks vapor lock, reduces fuel consumption.

Electrical System: Battery, 17-plate, 120 ampere-hour. High-capacity generator (40 amperes at 7 volts) with automatic current and voltage control, especially designed to handle the extra load of radio, heater, window lifts, etc. Centrifugal governor with manifold vacuum diaphragm; automatic spark advance. High-speed, single breaker-arm distributor.

*Optional equipment. White sidewall tires and rear fender shields available at extra cost.

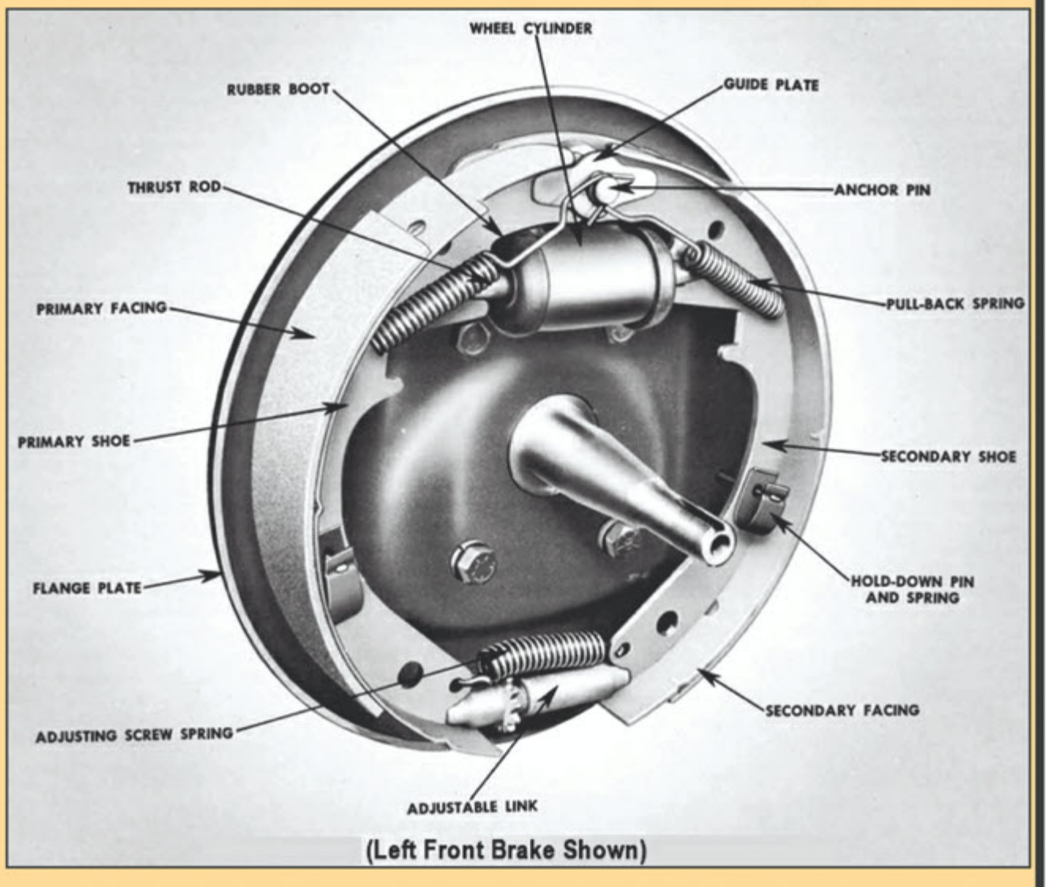
DRIVING OLD CARS

REBUILDING BENDIX [1]

"SELF-ENERGIZING" BRAKES ON A 1951 PACKARD MAYFAIR (250)

. . .a continuing series

by Bill Johnson — Publisher

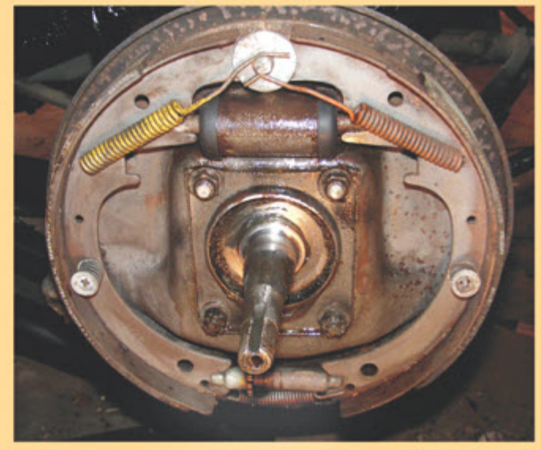


(Left Front Brake Shown)

In the August 2024 issue, we studied the Bendix [1] brakes on my '46 Packard Custom Super 8. In this issue, we continue with Part 2 of our Bendix [1] series as used on my '51 Packard Mayfair (250).

PRIMARY SHOE

In 1951, Packard introduced the Mayfair, its first 2-door hardtop, originally intended to be a "Junior" lower-priced car, so it was introduced in the 200 Series, as a 250. The price and appointments were closer to the Senior 300 Series, including a 327 straight 8 engine with Ultramatic transmission, toothed grill, leather and vinyl interior, and, by 1952, it was considered a "Senior" car. The Mayfair's beginning as a 200 Series has led to some confusing data on it over the years. The 200 Series had a 288 CID straight 8 and the smaller 1 3/4" front and back brake linings, and so did the Mayfair, but according to several sources, the Mayfair got the 2 1/4" front brakes in 1952 to help stop the 327. Ours has the 1 3/4" and, amazingly, we found NOS linings for it in the original Packard Studebaker box. *Our brake problem* was that the car pulled hard to the left when the brake pedal was applied. This developed during the period where the car sat for 2 years. At first, to try to remedy this, the brakes were adjusted and bled, but this had no effect on the left-side pull. All four wheels had been rebuilt five years ago, and the rear brakes were working, so we decided to focus on only the fronts.



RUSTY LININGS

We put the car securely on the lift, raised the car, removed the hubcaps and tires and removed the front drums and bearings. The seals had been replaced and were not leaking, so we removed them to re-use by taking out the cotter key, leaving the axle nut on loosely and pulling the drum straight off which also pulled the seal straight out. Now we could see what was causing the pulling problem. The shoes were crumbling from rust inside the brake drum. This had formed by letting the car sit. The master cylinder had been replaced two years ago and was not leaking and was supplying Dot-3 fluid to all wheel cylinders.

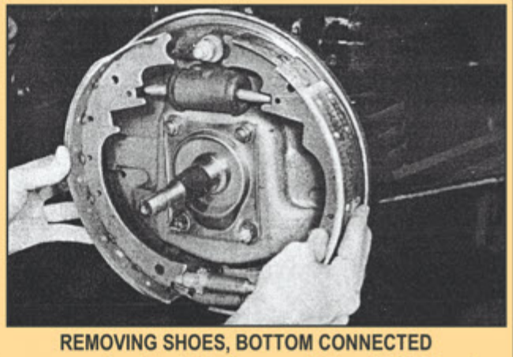
Basic principles of a hydraulic brake system:

CONTINUED

1) The master cylinder supplies the hydraulic force
2) The brake pedal applies the force to the master cylinder and multiplies the driver's push on the brake pedal
3) The backing plate supports the brake parts at each wheel and transmits the braking force to the frame of the car (see the Archives section at www.southernwheels.com for a detailed discussion of Bendix [1] self-servo workings).
4) The brake shoes support the linings and transmit the braking force to the backing plate.
5) The brake linings and brake drum produce the friction and convert the power of the moving car into heat.
6) The wheel cylinders actuate and apply the pressure to the brake shoe.
7) The steel tubes and flexible hoses transmit the hydraulic pressure from the master cylinder to each wheel cylinder.

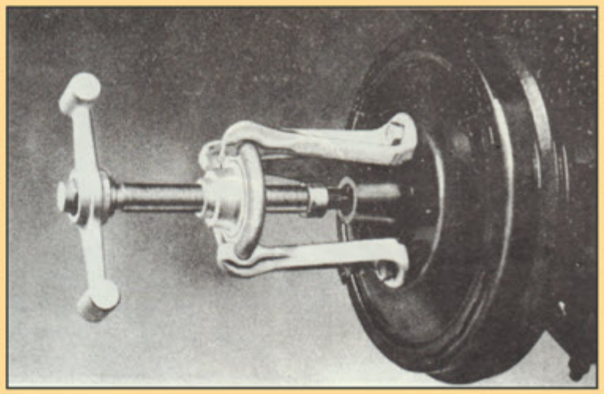
DISASSEMBLY: We always take pictures *before* taking anything apart, so after taking the pics, we removed the shoes (always wear safety goggles!). This is done with a brake tool, inserting the cupped end at the anchor pin on the shoe return springs, turning the tool to free the spring from the anchor pin. The shoes were held on by the shoe hold down springs and these are removed by pushing in on them and turning the spring until the hold down pin unlocks from the spring. This leaves the adjuster spring at the bottom holding the shoes together. We always leave the spring on, pulling the shoes off with it on to keep the shoes from coming apart.

TOP SPRING REMOVER


REMOVING SHOES, BOTTOM CONNECTED

With the brake shoes off, it was a good time to replace the wheel cylinders and hoses while we sent the drums out for turning and arcing to the new brake linings. The '51 brake


CLAMPING DOWN PULL SPRINGS

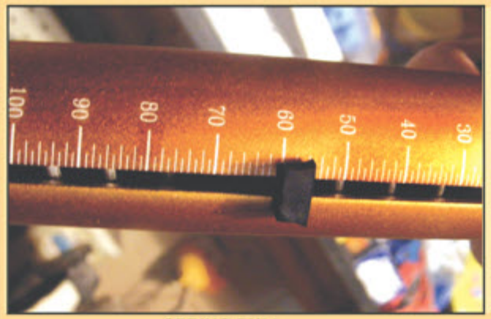

REAR AXLE PULLER


INSTALLING SEAL


SEAL IN

shoes were originally riveted on. Many of the replacement linings are bonded (glued) on. As we have covered before, we always use old asbestos (soft) linings and we were lucky to have those Packard "NOS" ones. During this project, we decided to replace the rear shoes with OEM 1 3/4" x 12" and replaced the rear wheel cylinders. We did the same procedure to the rear as to the front, but had to use a rear axle puller.

ASSEMBLY: After everything was cleaned up and painted, wheel wells undercoated, we put everything back together, the primary (short) shoe to the front. We have found it easier to assemble the adjuster and spring, tying the primary and secondary shoes together at the bottom and put this assembly on the backing plate, then the hold down springs by pushing the brake shoes together at the top anchor pin then the guide plate and the pull back springs. A note on the pull back springs: The primary spring is usually not as strong as the secondary spring. The old ones were usually color coded with orange the primary and the yellow the secondary. We tested ours with a scale and found the primary tested at 50 pounds pull and the secondary tested 55 pounds. We also bought some new springs and tested them. All of them were gray and all of them tested at 50 pounds. This was done by using a pull scale and putting one end of the spring in a vise and steadily pulling the other end to a distance that approximated the



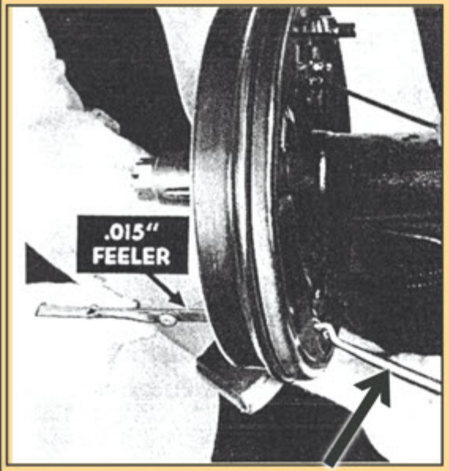
SPRING PULL

spring's pull in the car. Next, we tried jerking one of the springs and got it to go to a high of 100 pounds, but the spring was stretched way beyond where it would stretch in the drum, so the first test was more accurate. We decided to re-use the old springs. We put a guide plate on the anchor pin, and using the brake tool, pulled each spring on the anchor pin (The orange/yellow code is listed in our 1951-54 approved Packard Service Manual.)

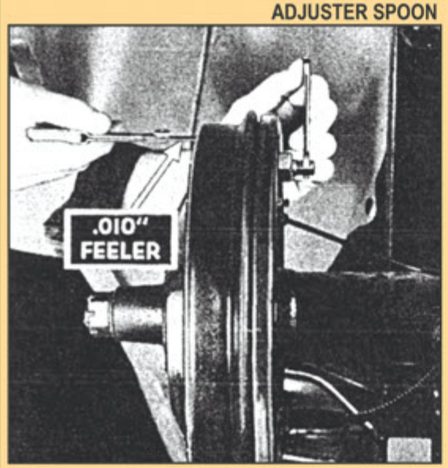
Before installing our brake drums, we re-packed the bearings using a bearing packer with an air grease gun with Valvoline Multi-purpose grease. It is important to use this old-style grease on drum brake cars and the red high temp grease on disc brake cars. Of course, we wore rubber gloves and changed them regularly to keep the grease off of the new linings. Once grease gets into linings, it never really comes out. The lining absorbs the grease all the way through, and although it wipes off with brake cleaner, some is still on the lining. If that happens, we spray brake cleaner on several times, each time wiping down the lining with paper towels. Sometimes it takes 5-6 times.

With everything on the backing plate, we installed the brake drums,

outside bearing assembly, the axle washer, nut, tightening down until the wheel barely turns, then backing off to the next cotter pin hole in the axle, then inserted a new cotter pin. We always use high quality, "new" cotter pins. Then, we installed the grease cups over the axle nuts. We bled the brakes, starting with the farthest wheel cylinder: Right rear, left rear, right front, left front, and bled each wheel until there were no air bubbles coming from the wheel cylinders. We always check the master cylinder after bleeding each wheel, and never let the fluid get below half. The shoes were adjusted by inserting a brake spoon through the slot on the back side of the backing plate. We locked each wheel down, then backed off until the wheel would rotate 1 turn by hand. Packard recommends on the '51-'54's that you (on the front side of the drum) insert a .015 feeler gauge through the drum inspection hole between the lining and the drum, about 1 1/2" from the lower end of the secondary shoe (4 o'clock), expand the adjuster screw (star wheel) until a slight drag is felt on the feeler. Then insert a .010 feeler through the drum inspection hole between the drum and lining about 1 1/2" from the upper end of the secondary shoe (1 o'clock). If the clearance is not within limits, loosen the anchor pin lock nut and adjust the anchor pin, turning the pin in the direction of the forward wheel rotation to decrease clearance. Turn the anchor pin in the opposite direction to increase clearance. At the same time, re-adjust the adjusting screw to maintain the .015" clearance at the lower end of the shoe. Holding the anchor in the set position, tighten the lock nut. Repeat this on all brakes. As a final test, turn the adjusting wheel until the drum can "just" be turned with both hands, then back off the adjustment until the drum turns freely a couple of turns. Install brake drum inspection hole covers (front) and adjuster hole cover (back) then put on the wheels. The brake pedal should have 3/4"



ADJUSTER SPOON



travel. If not, the pedal rod can be adjusted. To adjust, loosen the lock nut on the master cylinder push rod, turn the large hexagon nut "in" to decrease the brake pedal free play and "out" to increase the brake pedal free play. After the push rod is properly adjusted, tighten down the lock nut. Re-check the brake rod travel while hot. This will be your accurate reading (hot).

Hand Brake Adjustment: (rear wheels only) If it becomes necessary to adjust the hand brake, (with the transmission in neutral),

1) Tighten the adjuster until the wheel can be turned by hand
2) Pull the hand brake lever to the first notch
3) Pull the rear wheel brake cables forward to remove all slack
4) Adjust the clevis of the hand brake cable so that the clevis pin can be easily installed without any slack in the cable
5) Release the hand brake. Back off the adjuster screw at each rear wheel.

To equalize: Loosen the "tighter" brake. Install the adjuster hole covers, lower car to the ground.

Now the brakes work great–no pulling! We keep re-learning the same lessons–Don't let a car sit! We will see you next month on the '51 Chevy Bendix [1] complete brake overhaul. Keep 'em driving!

SPECIFICATIONS ON 1951 PACKARD BRAKES (1951= 24th Series)

Junior Series - 200 (The 200 Series had a 288 Straight 8. The 250 and upper series had a 327 Straight 8)
Senior Series - 300
Senior Series - 400
Commercial 300-2413

BRAKES:
Drum = 12" diameter (all)
Master Cylinder = 1" bore, all, except commercial (1 1/8")
Wheel Cylinder Front = 1 1/8" bore, all, except commercial (1 1/8" front)
Wheel Cylinder Rear = 1" bore, all, except commercial (1 1/4" rear)
Linings = 12", 1 3/4" front & rear, 200 & 250
300-400 Series 2 1/4" x 12"
Commercial 2 1/2" x 12 front, 2 3/4" x 12 rear

Note: Packard reportedly changed to larger brakes on the Mayfair in 1952. 1951 was 1 3/4" linings front & rear, and 1952 was changed to 2 1/4" front and 2" rear (this is from a Motors Manual of the day)
For identification, 1941-1950 Clipper master cylinders were 3-bolt, but changed in 1951 to a 2-bolt type through 1954.

OLD CAR

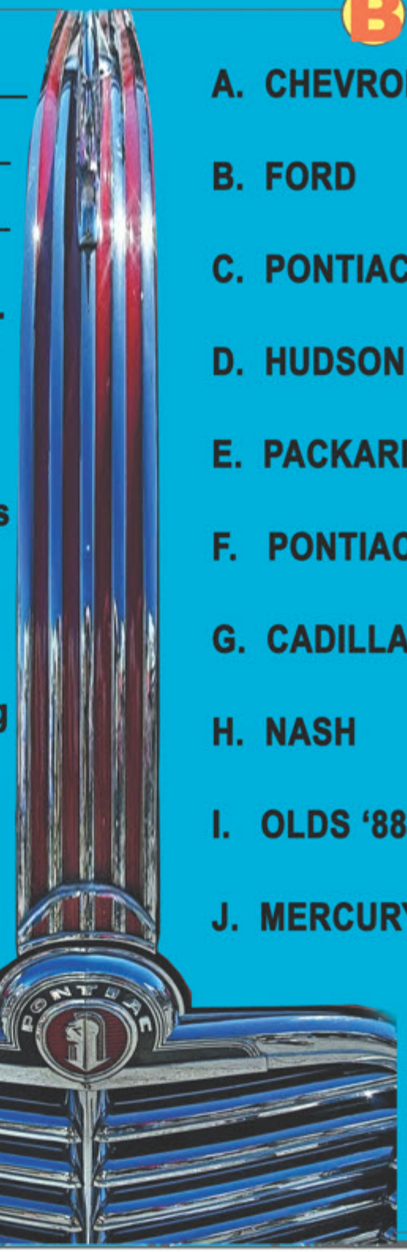
MATCH GAME

(Match the 50's Car ad slogans)

(Answers on Page 1)

A

- ☐ 1. Test-Drive a '50 ____
- ☐ 2. Eldorado by _____
- ☐ 3. Youth, Beauty, ____ Action!
- ☐ 4. ___ with the sensational Strato-Streak
- ☐ 5. ____with Merc-o-Matic Drive
- ☐ 6. ___Golden Airflytes
- ☐ 7. ___lowest-priced car with "Rocket" engine.
- ☐ 8. Fabulous motoring ____ for '51
- ☐ 9. Dollar for dollar, you can't beat a _____
- ☐ 10. "Ask the man who owns one"



B

- A. CHEVROLET
- B. FORD
- C. PONTIAC
- D. HUDSON
- E. PACKARD
- F. PONTIAC
- G. CADILLAC
- H. NASH
- I. OLDS '88'
- J. MERCURY

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