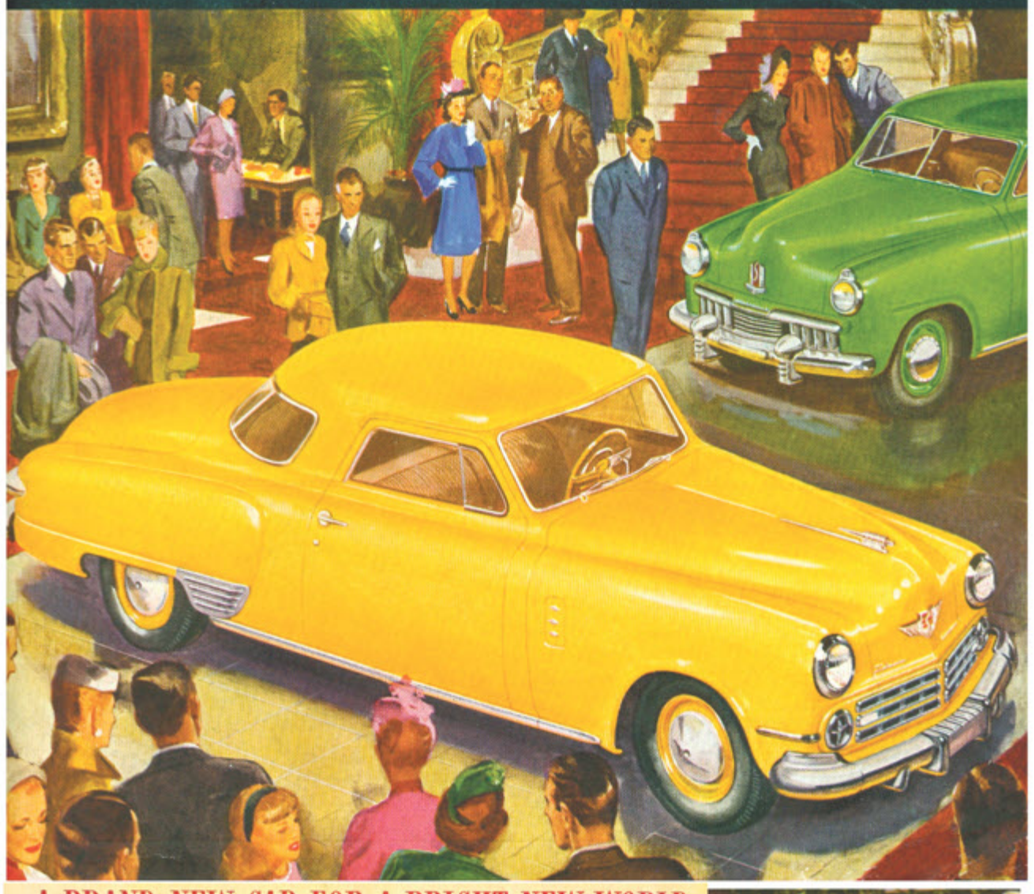
New 1947 Studebakers



A BRAND NEW CAR FOR A BRIGHT NEW WORLD

THE NEW 1947 Studebaker

YOU get more than the world's first genuine postwar automobile, when you become the proud owner of a new 1947 Studebaker.

You get a thrilling new car that's a melody in metal—with extra low, extra wide, new bodies styled by Raymond Loewy, internationally famous designer.

You get a car that's newly engineered throughout, from its wheels on up—a car with almost incredible new handling ease—with cradled riding comfort that surpasses anything you've experienced even in much more costly cars.

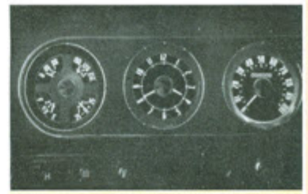
Studebaker was able to introduce these brand new 1947 cars months early, largely because of the teamwork and competence of the finest group of employees in the motor car industry.

It goes without saying that these 1947 Studebakers excel in quality. They are manufactured to war-production standards of accuracy by responsible, able craftsmen, many of whom are members of Studebaker father-and-son teams.

Studebaker's exceptional operating economy adds its practical appeal to the allure of these distinctive new postwar Champions and Commanders.

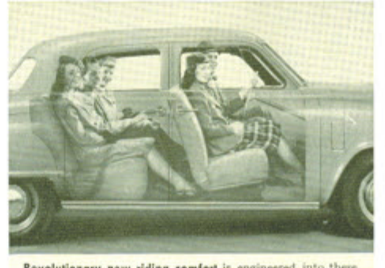
All the customary body styles are available—and each excels in roominess as well as in smart appointments.

Studebaker's gas-saving automatic overdrive of advanced design is available in these 1947 models. Your engine "works" only two miles of every three miles you glide along in overdrive—and this means you get one mile free. Overdrive quickly repays its moderate extra cost.



Aircraft-type "black light" instrument panels assure you no-glare, full visibility of dial markings at night. A scientific wartime development for the safety and efficiency of U. S. flyers, "black light" instrument panels come to you first in motor cars in these 1947 Studebakers.

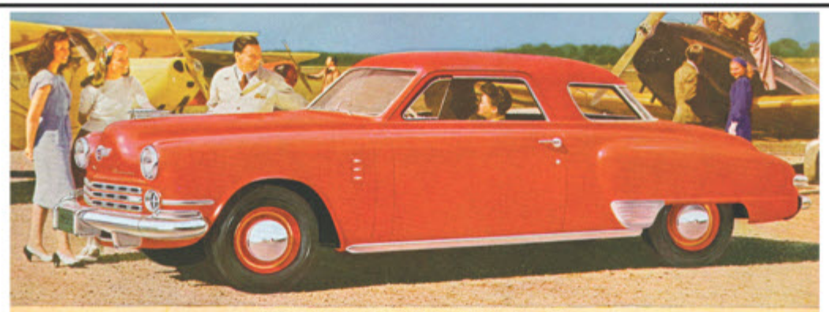
The finest craftsmen in the motor car industry—many of them father-and-son teams—build these 1947 Studebakers with a painstaking care that saves you many a repair dollar—increases your car's resale value. "Always give more than you promise" is the Studebaker watchword today as always.



Revolutionary new riding comfort is engineered into these 1947 Studebakers through lower, wider bodies, redistributed weight, redesigned frames, unique new spring mountings, softer springs. That's the technical explanation. The marvelous result is you relax in cradled ease you've never before experienced in a car.

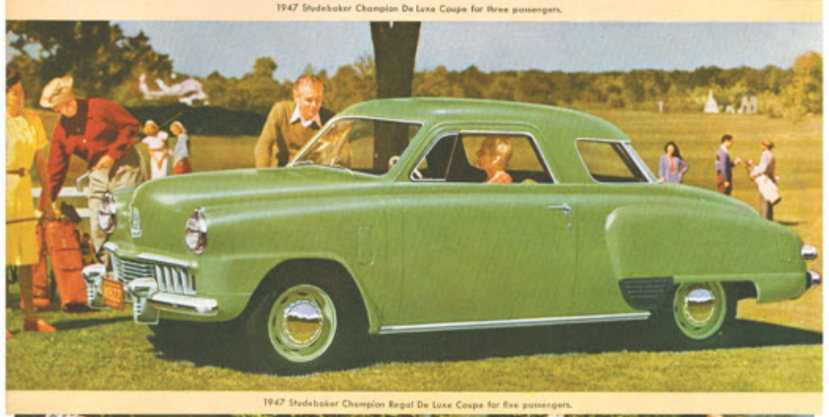
You stop smoothly with the full power of the world's first self-adjusting brakes in these 1947 Studebakers. Brake shoe automatically re-positions itself to compensate for slightest lining wear. This gives you the positive, top-efficiency braking action of a brand-new car.

1947 Studebaker Commander Regal De Luxe Convertible for five passengers.



1947 Studebaker Commander Regal De Luxe Coupe for five passengers.

1947 Studebaker Champion De Luxe Coupe for three passengers.



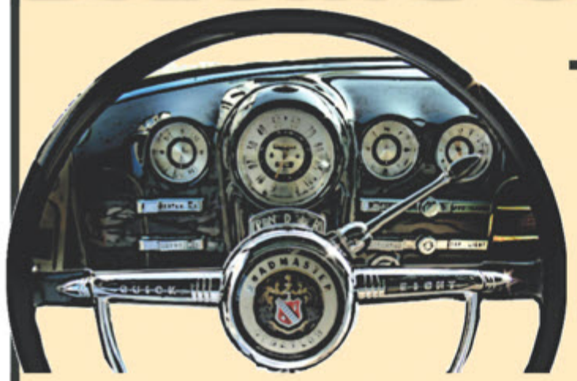
1947 Studebaker Champion Regal De Luxe Coupe for five passengers.

1947 Studebaker Commander De Luxe Coupe for three passengers.

1947 Studebaker Commander Regal De Luxe 4-door Sedan for six passengers.

1947 Studebaker Commander Regal De Luxe Land Cruiser

DRIVING OLD CARS



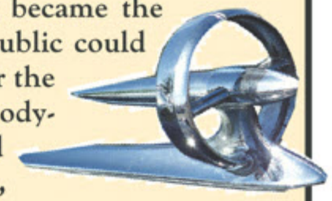
Part 1 of a 3-Part Series

THE '49 BUICK – "WHERE HAVE ALL THE PORTHOLES GONE?"

by Bill Johnson — Publisher

The year 1949 has always been one of my favorite years for cars. It was also the year I was born. Radio was still king, with shows featuring Bing Crosby, Jack Benny and George Burns and Gracie Allen among the favorites. Television sets were then selling at a rate of 60,000 a week, with "Uncle Miltie" Berle as Mr. TV. In baseball, Joe Dimaggio was the highest-paid player, making $90,000 a year, and the VW Beetle was introduced to the U.S. with annual sales of 2 cars! The mood in America was one of optimism and pride in saving the world from the destruction of World War II. This new attitude of confidence was reflected in the 1949 cars. They were lower, wider and sportier than ever before! Buick, like the other car manufacturers had been tooled up for the war effort, having built the infamous "Hellcat" M-18 tanks, aircraft engines and ammunition. This left little time for re-tooling for an all-new post-war car, so they, like most all other car makers, continued their pre-war 1942 bodies through 1948. Harlow W. Curtice headed up the Buick division, with Harley Earl as GM's chief designer and Art & Colour designer Ned Nickles. The team created the "hot" new 'hardtop convertible' which had reportedly been designed in 1945 by Nickles at GM's "Art and Colour" design studio.

As the story goes, Buick's manufacturing manager, Edward T. Ragsdale saw Nickles' hardtop design and said that his wife Sarah would like it--that she always bought convertibles and left the top up with the windows all rolled down, so that the wind wouldn't blow her hair and that she liked the sporty look. The result became the first Buick Riviera Hardtop Convertible. 1949 was also the first year of the famous "sweep spear" side styling and it appeared in that year only on the Riviera. This was also the first year for the portholes, with three appearing on each front fender of the Super and four on each front fender of the Roadmaster. This continued as a Buick tradition through 1957. Nickles had installed them on his personal '48 convertible, and had amber lights inside the fenders to give the look at night of a fighter plane. When they went into production on the '49 Buick, the lights were deleted. The portholes, along with the gun sight hood ornament, fuselage body and "pilot centered" asymmetrical dash, became the closest thing to flying a fighter plane that the buying public could achieve, and they loved it and bought 398,482 Buicks for the calendar year of 1949! Other innovations were the body-length fenders, panoramic windshield, wrap-around bumpers and taillights that neatly capped the rear fender, giving a smooth, uninterrupted flow from front to back. In these cars, like the '48-'49 Cadillacs, it is obvious how much the Mustangs and P-38 airplanes influenced the design. All '49 engines were straight 8s: the 40 Special 110 hp, Super 115 hp, and Roadmaster with Dynaflow 150 hp. On the Roadmaster, the interior was plush with grey wool pin-striped broadcloth seats capped with black leather, pleated door panels and thick carpeting. This sleek and graceful Buick looks good in all series, but my two favorites are the Roadmaster Riviera and the Roadmaster Sedanet. Years ago, I was fortunate enough to find a Roadmaster Sedanet and am in the final stages of a complete restoration. As the ads say, "Buick looks fine for '49!"



DRIVING OLD CARS

Part 2 of a 3-Part Series

BUICK

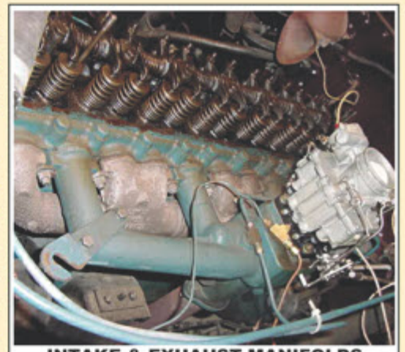
FIREBALL 320 STRAIGHT 8

by Bill Johnson — Publisher

Buick has been a major force in the automotive industry for a century. Founder David Buick, in the early part of the 20th century, entered his cars in races and cross-country events of the day, winning and setting new records. The company, however, struggled financially, and in 1904, the stockholders gave controlling interest to William Durant. By 1908, Durant, along with investors, would form General Motors, with Buick becoming the first car in its stable. As the marque grew, quality became its hallmark, and it was considered at times to be in the class with Packard and Cadillac, but with a lesser price tag. By 1930, Buick was in third place in the industry, and news of the introduction of an all-new straight eight was the latest buzz at Buick. For 1931, the new straight 8's were introduced in three versions: The 220.7 cubic inch, the 272.6 cubic inch, and the 344.8 cubic inch, with a maximum speed of 75 mph! Refinements were made on these engines, and by 1936, they were able to introduce a new line of straight 8's that were tougher, lighter and more economical. The 344.8 big 8 was dropped and replaced with a 320.2 cubic inch, which would continue in the big series Buicks through 1952. It had 120 horsepower and weighed in around 840 lbs. One of the changes in the new 320 was in the piston design. Changing from cast iron to aluminum made the new pistons 50% lighter, and their anodic treatment made them porous and harder, allowing oil to adhere to the pistons, lubricating them in the cylinder walls to protect them during the break-in period and cold starting cycle. During the 30's, Buick continued to refine its engine, always looking to improve its gas mileage and performance. In 1938, a Buick mechanic overhauling his own car, welded slugs to the tops of his pistons in an attempt to increase compression. Upon driving the car, he found he had increased its performance. The idea was given to the Buick engineering team, who discovered that altering the piston had changed the shape of the combustion chamber, making it more efficient. This resulted in the new-for-'38 turbulator or "bump top" piston. There was more to the new domed piston design than an increase in compression; it also reshaped the combustion chamber. The improved burning rates for the fuel/air mixture meant a lower octane fuel could be used (vital in Depression times!). The compression could be raised, causing the engine to run more smoothly and have more power.

BUICK'S COMBUSTION CHAMBER DESIGNED TO IMPART HIGH TURBULENCE TO EACH INCOMING CHARGE OF FUEL, FORMING A "FIREBALL", FOR GREATER POWER

By the late 1930's, Buick had experimented with multiple carburetors for its straight 8s. In 1941, a "compound carburetor" dual carb setup was available, bumping up the horsepower to 165 on the big 8s. That same year, Buick changed the 14mm spark plugs to 10mm on the advice of the AC Spark Plug Division. The compound carburetors proved to be a troublesome setup. They were hard to adjust, and did not return after WWII. The new 10mm spark plugs also had troubles, fouling out at low speed. Buick quickly changed back to the 14mm plugs, and many Buick owners blocked off the back carburetor to get them through the war years.

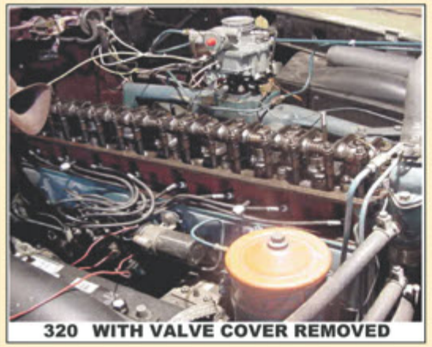


INTAKE & EXHAUST MANIFOLDS

By 1948, Buick offered the Dynaflow automatic transmission. They raised horse- power to 110 on the Special, 115 on the Super, 144 on the Roadmaster with standard transmission, and 150 on the Roadmaster with Dynaflow. The Roadmaster used a new crankshaft with insert bearings and hydraulic lifters.

"When better automobiles are built, Buick will build them" proved a well-deserved slogan by 1949, and a perfect way to introduce the newly-designed postwar cars. We were fortunate several years ago to find and buy a 1949 Roadmaster 2-door Sedanet–a fantastically designed car from GM's Art and Colour Design Studio run by Harley Earl. The rear of the '49 was inspired by the WWII P-38 fighter plane. We covered in past issues of Southern Wheels Magazine various stages of its restoration. We are now ready for final body work, painting and assembly. The engine has always run well, but smoked, so we decided to do a compression test (to check the rings) and a vacuum test (to check the valves). The compression test showed a 15% variance (10% is acceptable). Using our Sioux Vacuum Tester, no evidence of burned valves was found, so, not wanting to finish the car until the engine was right, we decided to go through the engine and replace the rings and whatever else showed wear.

DISASSEMBLY: We disconnected the battery, drained the oil and coolant, disconnected the vacuum lines (advance unit and pre-oiler), disconnected water hoses, throttle linkage, removed manifold nuts and care- fully removed the intake & exhaust manifolds. The 320's are known for manifold warpage, and ours was no exception, and had to be resurfaced (we will describe that next month). We removed the oil pressure line from the head and disconnected the oil filter housing, removed the spark plug cover, lifter cover and valve cover. Then we re- moved the rocker oiler, rocker shaft and head bolts, and lifted off the head. The Dynaflow transmission dust cover had to come off, as did the oil pan and pickup tube. We removed the rod-nut locks, rod nuts and caps and took the push rods out.



320 WITH VALVE COVER REMOVED

Next, we will show you what we found and what repairs were needed.

DRIVING OLD CARS

Part 3 of a 3-Part Series

RECONDITIONING A BUICK FIREBALL 320 STRAIGHT 8

by Bill Johnson — Publisher

The last section described the engine disassembly on our '49 Buick Roadmaster Sedanet 320 Straight 8. Even though the engine ran "okay", there was excessive blue smoke coming from the tail pipe at idle that increased upon acceleration. The car had a rebuilt carburetor and had been timed out, so we felt that the smoke problem was internal. It was time to run a compression test. This revealed a more than 15% variance in one of the cylinders (later this cylinder would produce a collapsed piston). With this test, we decided to take the engine apart.

Everything outside the engine had already been rebuilt and repainted. Our job would be strictly internal. All parts were out on a shelved rollaround cart, with all bolts put into plastic bags labeled with their contents. It is easy to mis-match bolts, and sometimes this can be disastrous. The '48 70-Series cars had two head bolts that attached the air cleaner, which were 1/8" longer than the other head bolts. These two had an "X" on their heads. If these were used in holes other than those to attach the air cleaner to the head, the threads might strip, or worse, they could bottom out and distort the cylinder bores.

There are a few points of comparison between the Buick Straight 8 and the Packard Straight 8:

1. The Buick engine does not have to be raised to remove the oil pan.
2. Like Packard, there are holes in the frame for easy access to bolts.
3. Buick utilized locks on their rod nuts to keep them from backing off.

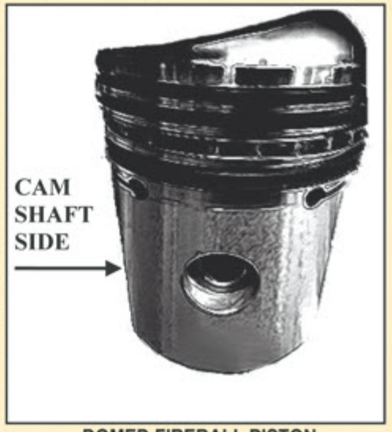
One unusual thing about the 320 Buick Straight 8 is in the location of the timing mark. It is on the flywheel on the passenger side, neatly covered by a snap-in cover in the bell housing, just over the starter.

With our parts laid out for inspection, we found signs of a blown head gasket. There was severe corrosion in several places, although not all the way through. All of the pistons were fine except one. It was slightly scored and collapsed .005", probably due to a previous vacuum leak, as the engine had been apart before. The cylinders were inspected for wear. There was some water damage on one cylinder that we could hone out later. We checked the cylinder wear: Using an inside micrometer, we took that measurement, then used an outside micrometer and measured the piston. Subtracting the piston measurement from the cylinder bore measurement, this gave us our clearance. Ours was within tolerance. Since we wanted to keep our original Fireball domed pistons, we decided to have our collapsed piston knurled. Knurling is a process

DETAIL OF KNURLED PISTON

where a piston is made larger by putting it in a knurling machine, making short indentations, pushing in the aluminum wall of the piston, then pushing out the other spots in between the indentations.

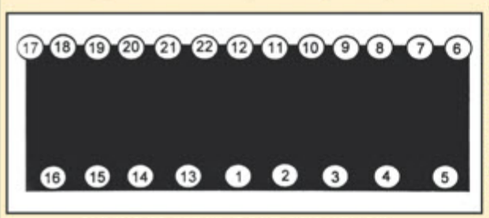
We replaced the rings with a new "standard" set from Hastings. There is a specification for ring thickness clearance. This is found by checking the end gap before putting the rings on the pistons. On this engine, there is a ring width specification measuring the ring lands (where the ring goes). Ours were within specs. Our block-to-head surface had been checked with a straight edge and looked good, so we now honed the cylinders, and the pistons were installed with the rod oiler holes and piston slots facing the cam shaft. The nipples on the rods face the rear of the engine. The crank required no work. The surface looked great, and the rods and mains showed almost no wear. The oil pan was cleaned along with the oil pick up tube assembly. The pan easily went on with a new gasket held in place with a little Permatex on the pan side. The head was disassembled and the valve springs tested. These are two per valve (an inner and an outer). Ours tested well at the correct 52 @ 1 5/16" on the inner and 119 @ 1 19/32" on the outer. The valves and seats were ground, head resurfaced, new valve guides installed, and the rocker assembly was rebuilt. We used a NOS copper head gasket and installed and torqued the head bolts. The head torque pattern is unusual, starting in the middle and going down one side and then down the other (see illustration). The Roadmaster with Dynaflow transmission was equipped with hydraulic valve lifters with zero clearance. These were cleaned and reinstalled, along with the push rods. Care must be used when tightening down the rocker arm assembly. It fits into alignment pins and can break if not properly aligned.



DOMED FIREBALL PISTON

The biggest problem we had was with our intake and exhaust manifold. They were warped--a common problem on these engines. Ours was warped .100". We carefully resurfaced the manifolds, keeping them together for a uniform surfacing. But there was a problem: So much material had to be removed that one end's line-up rings did not fit. This problem was solved by using a die grinder with a carbide burr to re-cut the correct depth of the line-up ring at the low end of the manifold. Using new manifold and exhaust gaskets, the manifold was put into place and tightened down.

We set our timing at 6 degrees BTDC, our points at .016, and gapped our plugs at .025. We changed the oil filter then filled the crankcase with 7 quarts of 30-weight non-detergent oil. All of the hoses, clamps and thermostat were new. We filled the radiator with coolant: 40% antifreeze and 60% water for summer (water allows the engine to run cooler than antifreeze). The carburetor was primed with gas, then we hit the remote starter button. The engine started right up. Smoke came out of the tail pipe from engine assembly but quickly cleared as the engine reached its running temperature of 180 degrees. A manual remote gauge showed our oil pressure to be about 40 pounds at fast idle. The book calls for 35 pounds. It revved nice, sounded good and all the numbers were right! We ran it for about 20 minutes and the temperature stayed right at 180 degrees. After shutting it off, we checked the compression, finding all cylinders uniform. See you next month. Keep 'em driving!



CYLINDER HEAD BOLT SEQUENCE

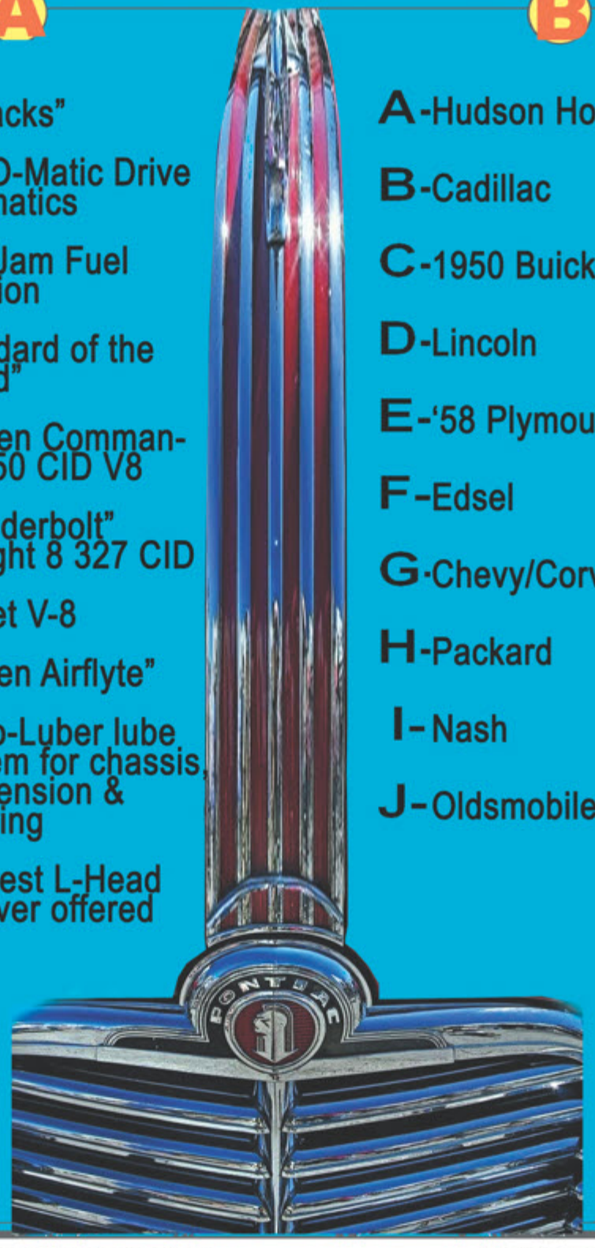
OLD CAR

MATCH GAME

(Answers on Page One)

1950's

A		B
☐ 1. "Jetbacks"		A-Hudson Hornet 308 CID
☐ 2. Mile-O-Matic Drive Automatics		B-Cadillac
☐ 3. Ram Jam Fuel Injection		C-1950 Buick Fastbacks
☐ 4. "Standard of the World"		D-Lincoln
☐ 5. "Golden Commando 350 CID V8		E-'58 Plymouth Fury
☐ 6. "Thunderbolt" straight 8 327 CID		F-Edsel
☐ 7. Rocket V-8		G-Chevy/Corvette
☐ 8. "Golden Airflyte"		H-Packard
☐ 9. "Multo-Luber lube system for chassis, suspension & steering		I-Nash
☐ 10. Largest L-Head six ever offered		J-Oldsmobile



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