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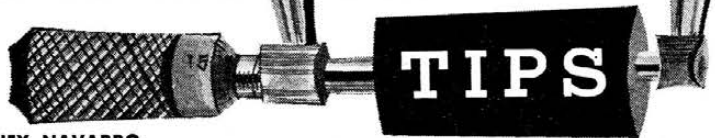
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# TECHNICAL



By **BARNEY NAVARRO**

Questions from readers concerned with automotive problems are welcomed for the Technical Tips section. Every effort is made to answer the majority of inquiries through these columns. **NOTE: Because of the high volume of correspondence, however, no answers can be handled directly.**

## SPARK PLUG ELECTRODES

Will high voltage coils work with standard spark plugs without lessening the average number of miles obtained in normal operation?

Jerry Klein Brooklyn, N. Y.  
• Spark plug electrodes will erode a little faster with hot coils, but it isn't due to the high voltage. High current flow is the factor that produces the heat. The ampere is the unit of measurement that applies to the current flow. However, ignition coils of the hottest type produce a flow that can be measured only in thousandths of one ampere.

If you are concerned with electrode erosion, platinum electrode plugs may be purchased at about 4 1/2 times the cost of standard plugs.

from changing as greatly as with gears that are necessarily of one ratio.

The small change in engine rpm makes it appear that something akin to clutch slippage is taking place. The ideal acceleration transmission would be a unit that would give the maximum ratio necessary for starting from a dead stop and would gradually change from that ratio to 1-to-1 ratio when maximum speed is desired.

## CHANGING GEAR RATIOS

I recently purchased a Studebaker President with automatic transmission. I do mostly city driving and would like more acceleration and don't mind the loss of some top speed. Would replacing the 3.54 rear end with a 4.11 give the desired effect? How much would I lose in gas mileage and top speed?

Robert Gran Moline, Ill.

• Changing to the 4.11-to-1 rear end gears will definitely improve acceleration. If driven in a manner similar to the way you drove with the 3.54-to-1 gears, it is doubtful that you would lose more than 1 1/2 mpg in city driving. Of course, what is more apt to happen is that the added snap will feel so good that you'll be flooring the throttle more often and thereby use considerably more gas.

Top speed, incidentally, will drop about seven mph. Actually, the loss in top speed is not proportional to gear ratio change.

## SLIPPAGE IN AUTOMATIC TRANSMISSIONS

The article on automatic transmission in the February 1955 issue of MOTOR Life did not include information on Packard's Ultramatic transmission. I'm the proud owner of a 1952 hardtop 250 and like to keep tuned to what's going on. How does slippage in drive position of the Ultramatic compare with Dynaflow, Ford-O-Matic, Merc-O-Matic, and Lincoln's new Turbo-Drive transmission?

Paul S. Hoffman Marion, Ill.  
• I dislike the term "slippage" applied to the various torque converter equipped cars. When we speak of slippage, the issue immediately becomes clouded with a mental reference toward waste. There is, of course, a certain amount of wasted energy inherent in the use of torque converters, but it's not desirable nor is it the principle of operation.

A torque converter is just what the name implies—a device for converting torque. Its purpose is to multiply the torque of the engine in the same way that the gears accomplish that task in the transmission.

Some torque converters, when loaded to maximum for a full throttle takeoff from a standing start, actually produce a ratio of 2.5-to-1 initially and gradually change until the ratio is nearly 1-to-1. This change in ratio keeps the engine rpm

## OVERDRIVE INSTALLATION

I am driving a 1954 Ford with standard transmission and 3.9-to-1 rear axle. This is the first car I've had in years without overdrive and I sure do miss it.

Would you advise trying to adapt an older model Columbia rear axle? Or will an older model Ford transmission and overdrive unit fit my car? I plan to make this installation myself if it does not mean replacing gears within the unit.

John R. Thomson Florence, Ariz.

• The Columbia axle installation definitely is not recommended due to the excessive cost. Furthermore, those units are as scarce as the proverbial hen's teeth. The least expense would be involved in obtaining a standard 1954 Ford overdrive.