

Service Bulletin

A P R I L

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SOUTH BEND 27, INDIANA

for
PERFORMANCE
and
ECONOMY

**AXLE RATIOS
ARE
IMPORTANT**

Here's Why...

CHOOSING THE REAR AXLE RATIO

The transmission and rear axle assemblies in automotive passenger cars provide a means of transferring and multiplying engine torque to the rear driving wheels. The ratio of torque multiplication through the transmission assembly is variable and the driver of the car can select the degree of torque multiplication desired to meet road and traffic conditions. The variable ratios of torque multiplication available in the transmission are used primarily to accelerate the car from a standing start to normal driving speeds smoothly and efficiently and most driving is done in third or high gear where the ratio in the transmission assembly is 1 to 1 and torque multiplication ceases.

The amount of engine torque multiplication through the rear axle, however, is constant and this ratio of torque multiplication in the axle assembly largely dictates engine speed, fuel economy and car performance during most normal driving. Rear axle ratios-amount of torque multiplication-are expressed as 3.54 to 1; 3.73 to 1; 4.10 to 1; etc. The higher the numerical ratio, the greater the engine torque multiplication and, of course, the greater the engine speed for any given car speed. The higher numerical axle ratios provide the maximum in car performance while the lower numerical axle ratios provide the maximum in fuel economy under ideal conditions. Generally speaking, in flat, level, and moderate altitude areas where power demands on the engine are reduced, a low numerical axle ratio provides satisfactory performance, lower engine speeds and maximum fuel economy.

In mountainous, high altitude, and urban areas where power demands on the engine are increased, the higher numerical axle ratios afford maximum performance. While the engine R.P.M. for any given car speed is greater with a higher numerical axle ratio than with a lower ratio, the greater torque multiplication of the higher ratio permits attainment of the desired engine and car speed without "lugging" or excessive throttle opening and, in a large measure, offsets any adverse effects on fuel economy.

For manufacturing purposes, one axle ratio for each type of transmission is designated as a "standard axle ratio". This ratio is selected, after careful consideration, as the best compromise ratio to give satisfactory performance and fuel economy under all conditions of terrain, altitude, car loading, traffic, etc., found throughout the United States and abroad. However, since these conditions vary considerably from area to area, Studebaker-Packard Corporation makes a choice of optional axle ratios available to its dealers to permit "tailoring" of a car to meet the specific requirements of terrain and type of operation. Dealers should carefully consider these ratios when ordering cars and select the ratios best suited for the terrain and over-all type of operational requirements. In making this selection, use the chart on the opposite page.

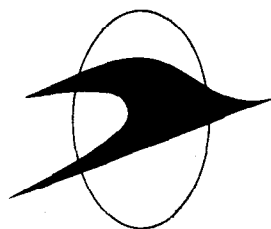
1960 S MODELS — LARK VI

LEVEL TERRAIN			SLIGHTLY HILLY TERRAIN			MODERATELY HILLY TERRAIN			VERY HILLY TERRAIN		
Where driving is mainly			Where driving is mainly			Where driving is mainly			Where driving is mainly		
Over The Highway	Moderate In-Town Traffic	Heavy In-Town Traffic	Over The Highway	Moderate In-Town Traffic	Heavy In-Town Traffic	Over The Highway	Moderate In-Town Traffic	Heavy In-Town Traffic	Over The Highway	Moderate In-Town Traffic	Heavy In-Town Traffic
STANDARD TRANSMISSION											
Body Types-W, F, J											
3.54	<u>3.73</u>	3.73	3.73	<u>3.73</u>	4.10	4.10	4.10	4.27	4.27	4.56	4.56
Body Types-D, P, L											
<u>3.73</u>	<u>4.10</u>	4.10	<u>4.10</u>	4.10	4.27	4.27	4.27	4.56	4.56	4.56	4.56
OVERDRIVE TRANSMISSION											
Body Types-W, F, J											
3.73	<u>4.10</u>	<u>4.10</u>	<u>4.10</u>	<u>4.10</u>	4.27	4.27	4.27	4.56	4.56	4.56	4.56
Body Types-D, P											
4.10	4.27	<u>4.21</u>	<u>4.21</u>	<u>4.21</u>	<u>4.21</u>	<u>4.21</u>	<u>4.27</u>	<u>4.27</u>	4.56	4.56	4.56
Body Types-L											
4.27	4.27	4.27	4.27	4.27	4.56	4.56	4.56	4.56	4.56	4.56	4.56
AUTOMATIC TRANSMISSION											
Body Types-All											
3.54	3.13	3.13	3.13	3.13	3.73	3.13	3.13	4.10	4.10	4.10	4.10

1960 V MODEL- LARK VIII & HAWK

LEVEL TERRAIN			SLIGHTLY HILLY TERRAIN			MODERATELY HILLY TERRAIN			VERY HILLY TERRAIN		
Where driving is mainly			Where driving is mainly			Where driving is mainly			Where driving is mainly		
Over The Highway	Moderate In-Town Traffic	Heavy In-Town Traffic	Over The Highway	Moderate In-Town Traffic	Heavy In-Town Traffic	Over The Highway	Moderate In-Town Traffic	Heavy In-Town Traffic	Over The Highway	Moderate In-Town Traffic	Heavy In-Town Traffic
STANDARD TRANSMISSION											
Body Types-All											
3.07	<u>3.31</u>	<u>3.31</u>	<u>3.31</u>	3.31	3.31	3.31	3.31	3.73	<u>3.73</u>	<u>3.73</u>	<u>3.73</u>
OVERDRIVE TRANSMISSION											
Body Types-All											
3.07	<u>3.54</u>	<u>3.54</u>	<u>3.54</u>	3.54	3.54	3.54	3.54	3.73	3.73	3.73	3.73
AUTOMATIC TRANSMISSION											
Body Types-All											
3.07	3.07	<u>3.07</u>	<u>3.07</u>	3.07	<u>3.07</u>	<u>3.07</u>	3.07	3.31	3.31	3.31	3.54

Standard Axle Ratio Underlined.



STUDEBAKER-PACKARD CORPORATION
SOUTH BEND 27, INDIANA

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