

## APPENDIX XIII

### LIMITED-SLIP DIFFERENTIAL PERFORMANCE OF GEAR LUBRICANT

(One test used for performance evaluation)

#### SCOPE

1. The smoothness and quietness associated with limited-slip differential car operation are observed.

#### SUMMARY OF METHOD

2. A car equipped with a limited-slip differential is driven in a prescribed manner involving slow and braked tight turns, both forward and reverse.

#### PROCEDURE

3. (a) The limited-slip rear axle is filled with the test lubricant. Weight equivalent to four passengers, approximately 600 pounds, in addition to the driver is placed in the car. The lubricant temperature is brought to at least 150°F by driving the car for the necessary mileage at a moderate speed.

(b) With the lubricant at test temperature, the car is turned to the left and driven in a circle of approximately the minimum turning diameter, starting at 10 mph and gradually applying the brakes to bring the car to a stop while applying power. Shift into reverse and back in a similar brake-power tight turn. Turn to the right and proceed through similar forward and reverse turns. Repeat the foregoing three more times, observing the smoothness and quietness of the limited-slip differential action.