

# SUMMARY REPORT 151-3(S)

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## OPERATIONAL CHARACTERISTICS OF MAYS RIDE METER

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# **Operational Characteristics of Mays Rider Meter**

by

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The research report summarized in these pages contains a review of the literature together with field data obtained for the vehicle mounted Mays Ride Meter roughness measuring device.

The operational characteristics of the Mays Rider Meter are presented by examining the type of vehicle in which it is used, changes in vehicles with time, and the effects of tire pressure, air temperature, passengers and luggage, wet or dry pavements, wind velocity, vehicle speed, and driver variability. Utilizing the above information, guidelines are recommended concerning operational control for the instrument.

The operational guidelines supported by conclusions of the study are as follows:

1. Vehicles to be utilized as Mays Ride Meter test vehicles should have coil springs and standard suspension systems unless data are developed to demonstrate the adequacy of other types of vehicles.
2. Each test vehicle should be calibrated.
3. Control sections should be established as described in Appendix A and periodic check runs made to insure that the equipment remains in calibration.
4. Recalibration should be performed when the control sections indicate an out of calibration condition or after about 20,000 miles of operation. After 20,000 miles new standard shock absorbers and new tires should be installed and the front end aligned.
5. The tire pressure should be checked daily when the vehicle is in use and should be adjusted to the pressure used when the vehicle was calibrated. For the TTI 1975 LTD, this pressure is currently 30 psi for the front and back tires. The tires should be checked after a minimum travel distance of five miles and no more than ten miles. This will allow the tires to heat to a somewhat standardized temperature.
6. Testing should be curtailed at temperatures below 25°F unless data are available for the test vehicle which will allow an appropriate temperature correction to be made.

7. Two operators and 100 pounds of luggage is all that should be allowed in the vehicle. The gasoline tank should be maintained above  $\frac{1}{4}$  full.

8. Testing can be allowed during light rainfall provided the pavement does not pond water.

9. Testing should be curtailed when cross winds exceed 15 mph.

10. The test speed should be maintained at  $50 \text{ mph} \pm 3 \text{ mph}$ .

11. Drivers should be familiar with the vehicle and understand the variation in Serviceability Index that can result from poor operational control.

Field data obtained in 1974 on statewide randomly located pavement sections are presented so that typical values for mean, standard deviation, and coefficient of variation may be observed.

The published version of this report may be obtained by addressing your request as follows:

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