

Note: This presentation is to inform GRB on technical issues related to stationary noise testing. Technical developments in vehicle propulsion systems result in the situation where certain advanced technology vehicles have no valid test mode. ISO seeks the advice of GRB and makes a suggestion for accounting for such vehicles.

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# ECE R51 (ISO 5130) Stationary Noise Testing of Advanced Technology Vehicles

Doug Moore

ISO WG42 Convener

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# Background

- Stationary noise testing in ECE R51 (ISO 5130) was included to provide a mechanism for in-use compliance testing of vehicle noise emissions.
- The implicit technical assumption for using stationary noise testing was some correlation to actual on-road vehicle noise emission.
  - Evolutionary changes in vehicle technology have reduced this correlation. (engine protection, new exhaust system configurations) The latest updates to ISO 5130 addressed many of these issues.
  - Revolutionary changes in vehicle technology obsolete this correlation. (electric propulsion, fuel cells, stop-start operation, hybrids, etc.)

# Stationary Noise Testing of Advanced Technology Vehicles

- Issue: Some Advanced Technology Vehicles have no engine RPM at stationary conditions during normal operation.
  - Vehicles with an internal combustion engine can be forced by the manufacture to operate, but this condition cannot be reproduced in a roadside check.
  - Forcing a non-normal operating mode of the vehicle would be viewed as “Test Detection” in other circumstances.
- Result: No stationary noise test possible.
- **Proposed Solution: Exempt such vehicles from stationary testing**

# Long Term

- GRB (ISO) will need to consider the methods of in-use testing suitable for future technology vehicles.
- Stationary testing, as it is presently conducted, has significant technical limitations with respect to new vehicle technologies to be able to fulfill the purpose of providing in-use compliance and enforcement.