

In-Use Diesel Emissions Testing

John Rogers
jrogers@trafalgar-mexico.com

South Asia & Latin America

- Older Truck Population
- Importance of Inspection and Control of Emissions from In-use Vehicles
- Focus has always been on Visible Smoke
- Program needs to reduce Fine & Ultra-fine Particle Emissions
- Is there Correlation?

Test Procedures

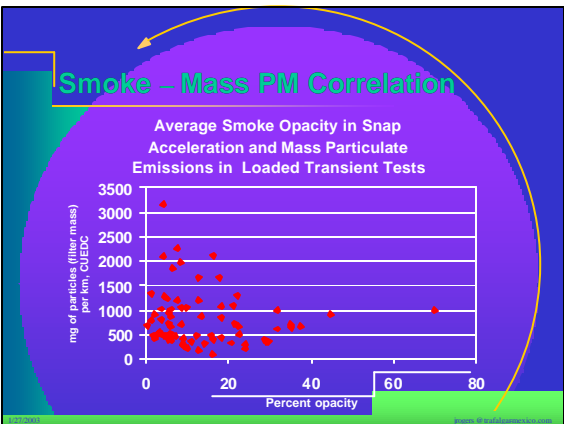
- SAE J1667 vs ECE R24 standards
- Test Results depend on the Tester
- Poor Reproducibility in I&M Environment
- RPM, Gas Flow Rate and other variations
- Controls required to limit Tampering
- Procedures need improvement

Emissions Tests to promote Truck Repair

- Easy to prepare a vehicle to pass a free acceleration test
- 70+% of repairs focus on the engine's Transient Air-Fuel Ratio Control.
 - AFC Plunger/Bellows & No Air Pressure (Cummins)
 - Throttle Delay (DDC)
 - Puff Limiter (Mack)
- May not reduce Real-life Smoke Emissions

Smoke vs Particulates

- Smoke results depend on drive cycle
- Smoke test can only control visible smoke
- Poor correlation between free acceleration smoke and mass particulate emissions on Dynamometer
- Free acceleration useful as screening tool
- Needs lenient standards to minimize false failures.



Program Audit & Supervision

- False Passes critically damage public opinion
- Strict enforcement, supervision and remote audits required
- Must invest resources, manpower and effort in auditing and supervision
- Must guarantee objectivity and transparency from Day One

Conclusion

- Alternative diesel test procedure
 - Dynamometer Test required
- Smoke can be controlled visually
- Identifying diesel gross polluters is more difficult than gasoline
- No simple road map
- Multi-prong strategy is needed

Thank you

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