Calibrated Success
EFI Training - Tuning - Consulting

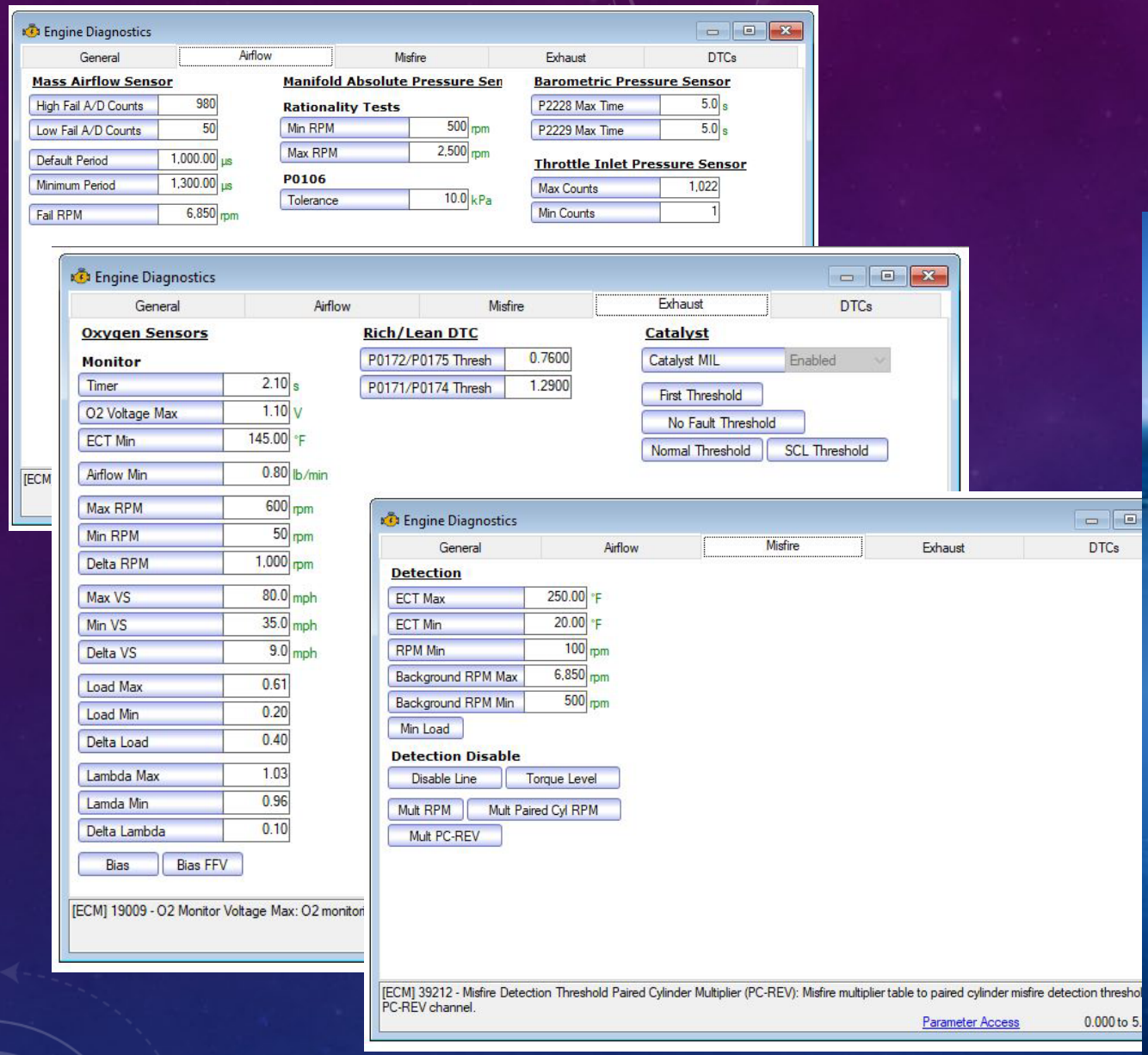
WHAT DOES "NO MIL" FROM OBD REALLY MEAN?

A STORY OF TRUST AND CHEATING

GREG BANISH

- **MIL must be on if conditions result in emissions >150% of standard.**

- Presence of MIL = automatic fail for cert.
- Stored codes must point toward suspected cause of emissions
- OBD Demonstration for MOR certification represents ~$1M in testing, more in development
  - Various induced failures, measured tailpipe emissions in lab


Engine Diagnostics
General
Airflow
Misfire
Exhaust
DTCs
Mass Airflow Sensor
High Fail A/D Counts 980
Low Fail A/D Counts 50
Default Period 1,000.00 µs
Minimum Period 1,300.00 µs
Fail RPM 6,850 rpm
Manifold Absolute Pressure Sen
Rationality Tests
Min RPM 500 rpm
Max RPM 2,500 rpm
P0106
Tolerance 10.0 kPa
Barometric Pressure Sensor
P2228 Max Time 5.0 s
P2229 Max Time 5.0 s
Throttle Inlet Pressure Sensor
Max Counts 1,022
Min Counts 1
Engine Diagnostics
General
Airflow
Misfire
Exhaust
DTCs
Oxygen Sensors
Monitor
Timer 2.10 s
O2 Voltage Max 1.10 V
ECT Min 145.00 °F
Airflow Min 0.80 lb/min
Max RPM 600 rpm
Min RPM 50 rpm
Delta RPM 1,000 rpm
Max VS 80.0 mph
Min VS 35.0 mph
Delta VS 9.0 mph
Load Max 0.61
Load Min 0.20
Delta Load 0.40
Lambda Max 1.03
Lamda Min 0.96
Delta Lambda 0.10
Bias
Bias FFV
Rich/Lean DTC
P0172/P0175 Thresh 0.7600
P0171/P0174 Thresh 1.2900
Catalyst
Catalyst MIL Enabled
First Threshold
No Fault Threshold
Normal Threshold
SCL Threshold
[ECM] 19009 - O2 Monitor Voltage Max: O2 monitor
Engine Diagnostics
General
Airflow
Misfire
Exhaust
DTCs
Detection
ECT Max 250.00 °F
ECT Min 20.00 °F
RPM Min 100 rpm
Background RPM Max 6,850 rpm
Background RPM Min 500 rpm
Min Load
Detection Disable
Disable Line
Torque Level
Mult RPM
Mult Paired Cyl RPM
Mult PC-REV
[ECM] 39212 - Misfire Detection Threshold Paired Cylinder Multiplier (PC-REV): Misfire multiplier table to paired cylinder misfire detection thresho
PC-REV channel.
Parameter Access
0.000 to 5.

If the MIL isn’t on, and we ran the monitors, tailpipe emissions should be less than 150% of the standard.

-*Aristotle (probably)*

CHECKING COULDN'T BE EASIER

Connected to ECU OK.

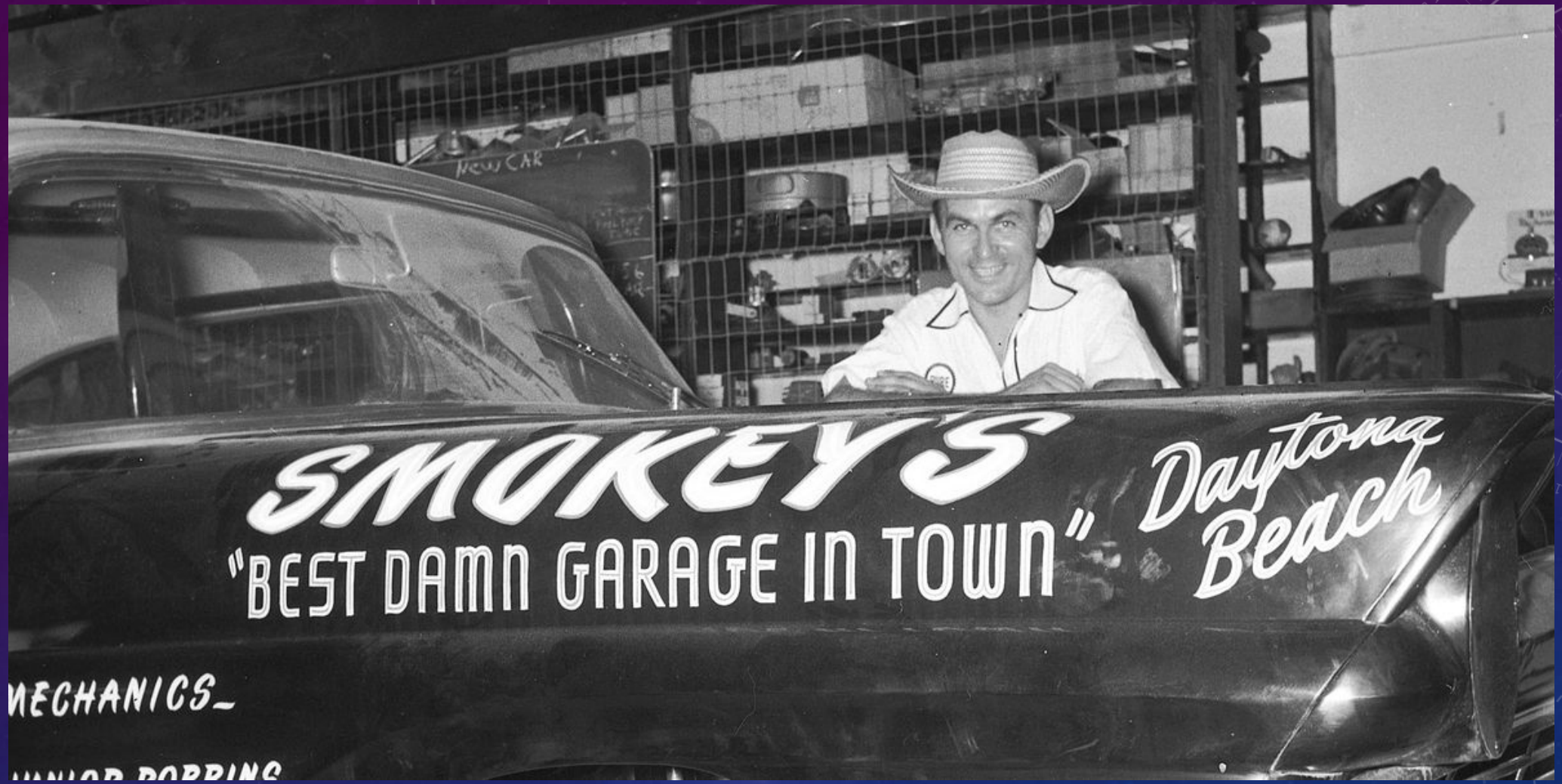
Emissions Readiness s/DTC

Misfire:	Complete
Fuel System:	Complete
Components:	Complete
System Type:	Spark
Catalyst:	Complete
Heated Catalyst:	Not avail
Evaporative Sys:	Complete
Secondary Air Sys:	Not avail
A/C Refrigerant:	Not avail
O2 Sensor:	Complete
O2 Sensor Heater:	Complete
EGR System:	Not avail

Confirmed Emissions DTC's: 0

MIL Is On: False

Misfire	Complete	Catalyst	Complete
Fuel System	Complete	Heated Catalyst	Not Supported
Components	Complete	Evaporative System	Complete
		Secondary Air System	Not Supported
		A/C Refrigerant	Not Supported
		Oxygen Sensor	Complete
		Oxygen Sensor Heater	Complete
		EGR System	Not Supported



"As far as cheating goes, they'll never stop it. The only way it can be done successfully, only one person can know about it."

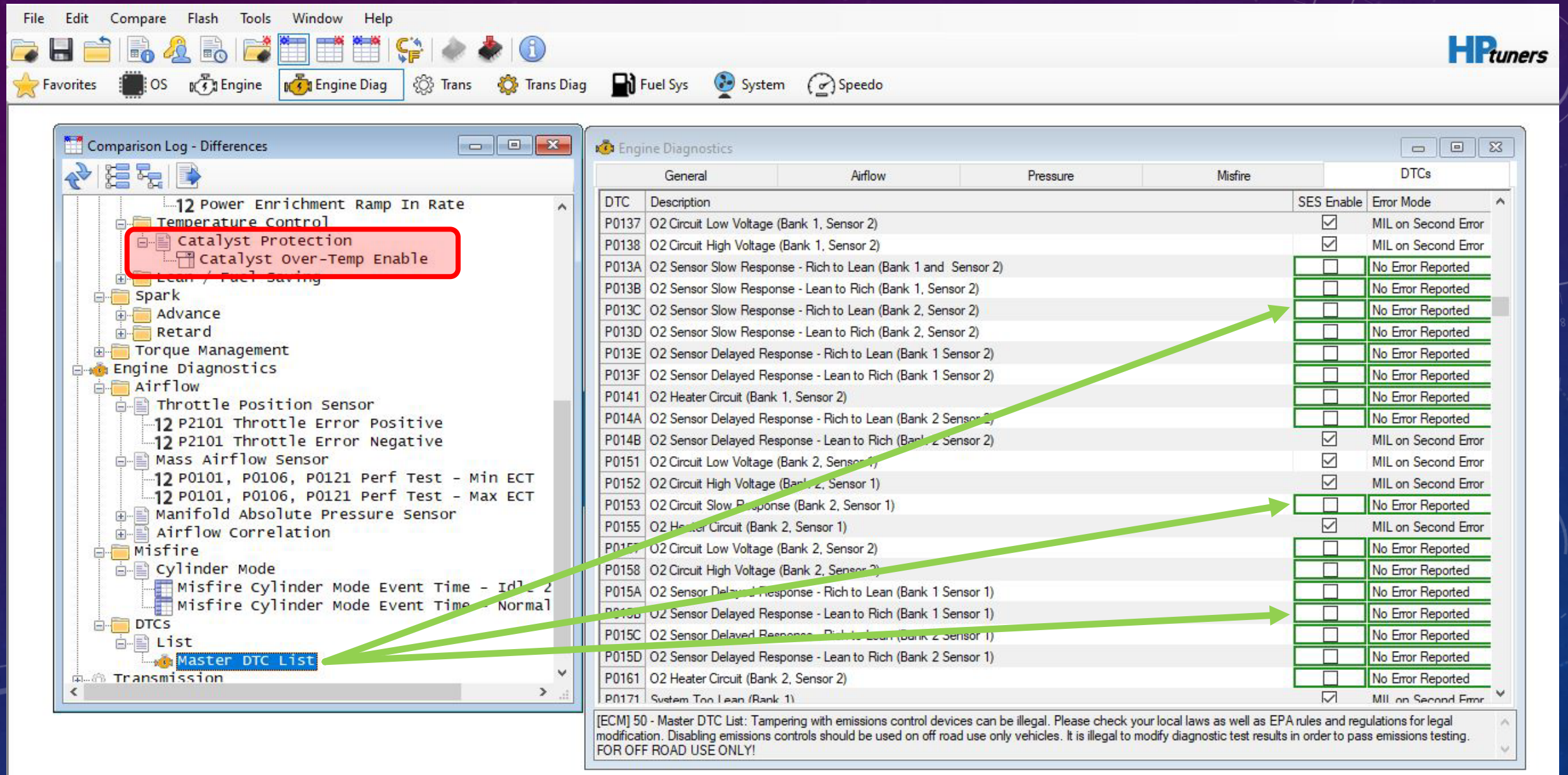
-Smokey Yunick

JUST RELEASED! Ford Powerstroke 3.0L | EGR, DPF & DEF Complete Delete Kit | EZ LYNK With Custom Delete Tunes.

https://bigdaddydiesel.com/store/Ford-Powerstroke-3-0L-EGR-DPF-&-DEF-Complete-Delete-Kit-EZ-LYNK-With-Custom-Delete-Tunes-p432770583

match

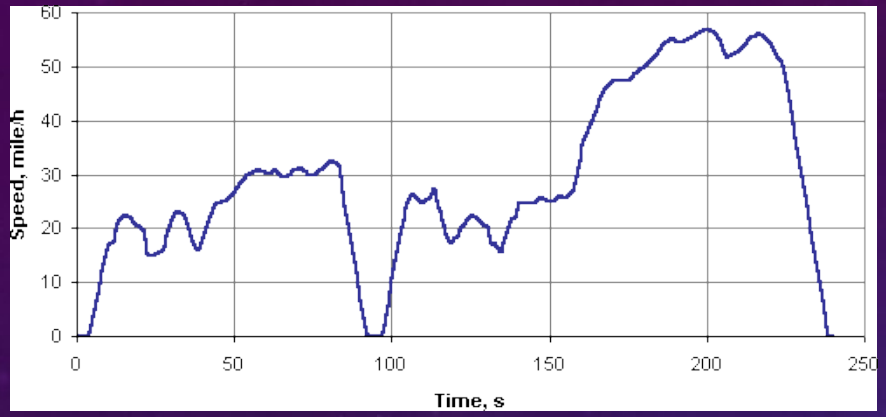
COMMERCIALLY AVAILABLE TOOLS



WHERE DO WE DRAW THE LINE?

- Separate polluters from good guys
  - It is possible to make lots of power without disabling emissions or OBD
- Quickly identify bad actors, flag them for review.
- Create a reasonable path for in-use compliance on a broad basis.
  - Installers, Users, Auctions
  - Massive impact due to scale

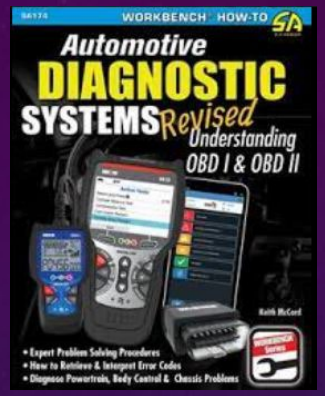
“REASONABLE BASIS”?

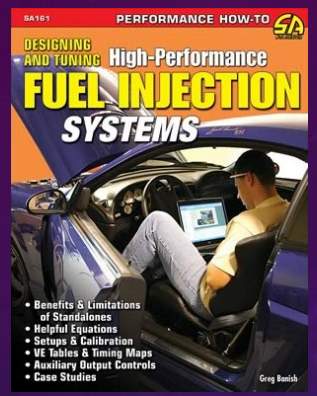


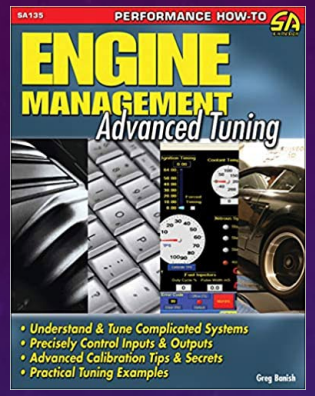
Barriers to Adoption:

- Catches most offenders
  - Allow Non-Defeat Device systems to pass
- Affordable measurement system
- Ease of use and reporting
- Known regulatory standard
  - g/mi, % concentration, OBD, Signature?
  - *NOT 1066*
- Avoid CAA fines with compliant systems

CONTRIBUTIONS







POWER AND SPEED PODCAST

- On-site and 1-on-1 training
- Emissions/Performance consulting