



# Vehicle Performance Statistics & WILD, THD, ABD, TPD

**MARTS 2008 Annual Technical Conference**

**RB Wiley, Principal Investigator  
Chicago, IL**

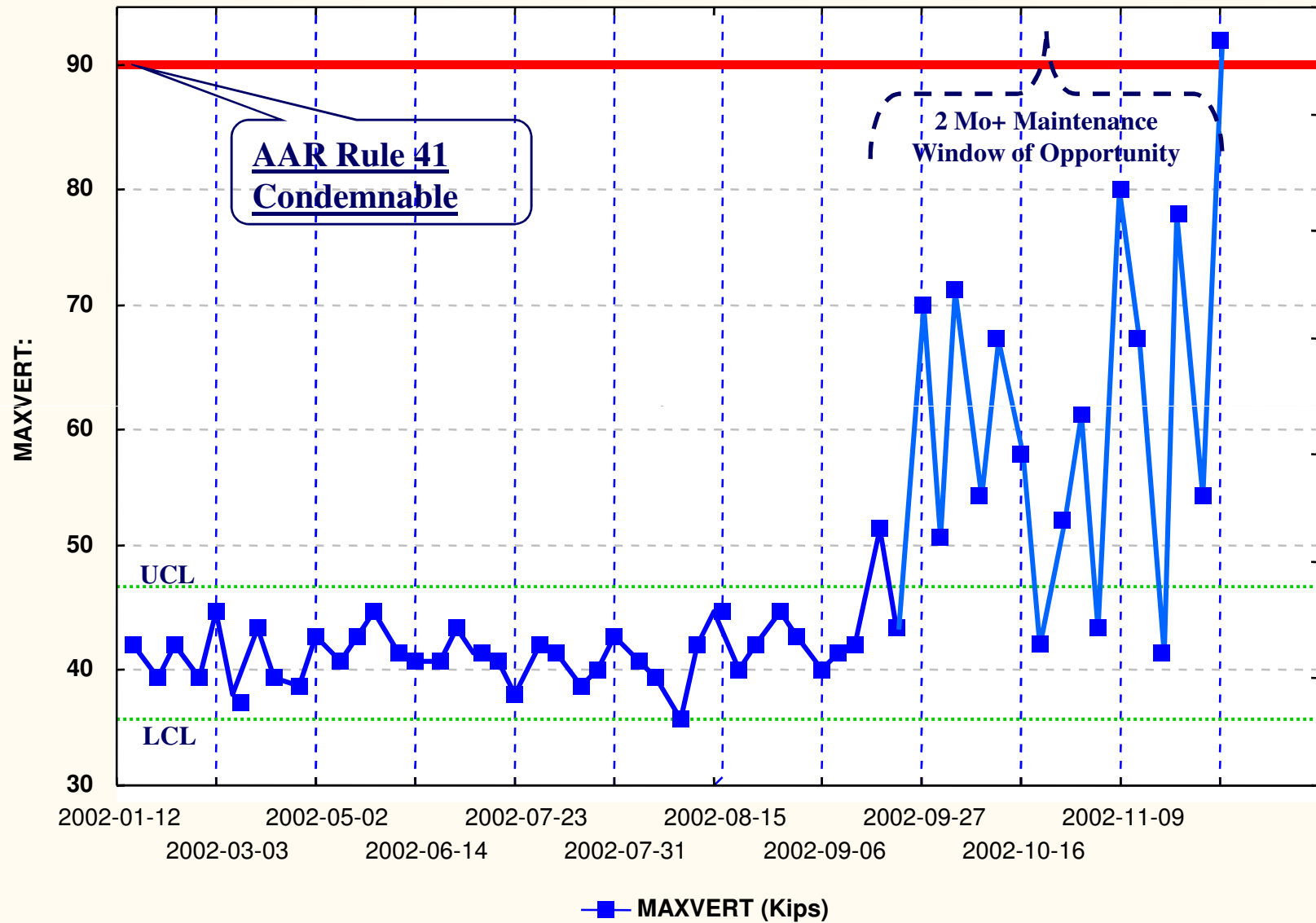
**September 25, 2007**

# ***Agenda***

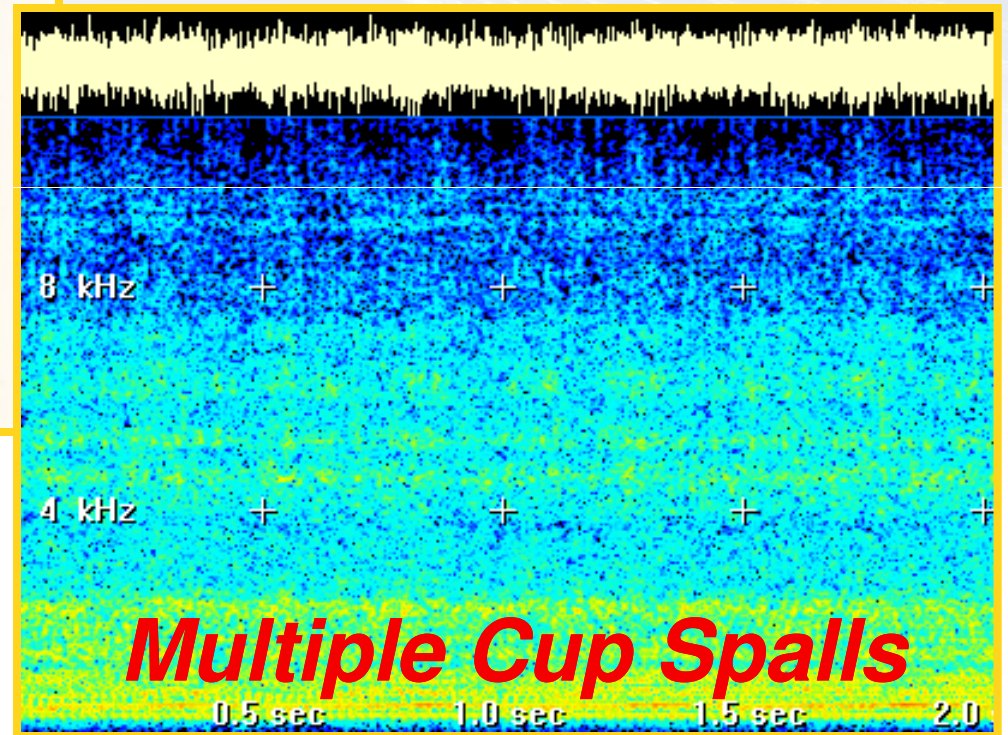
- ◆ **Steel Wheels keep on turning**
- ◆ **The Hunt for Hunting Trucks**
- ◆ **Fun with Bearings (... Acoustically Speaking ...)**
- ◆ **Truck Performers (Bogie and the Side Frames...)**
- ◆ **Vehicle Performance Data Statistics Update**

# Trend Analysis for Predictive/Preventive Maintenance

**Time/Trend Plot of Wheel Impact Loads**



# Bearing Defects: Example Signature



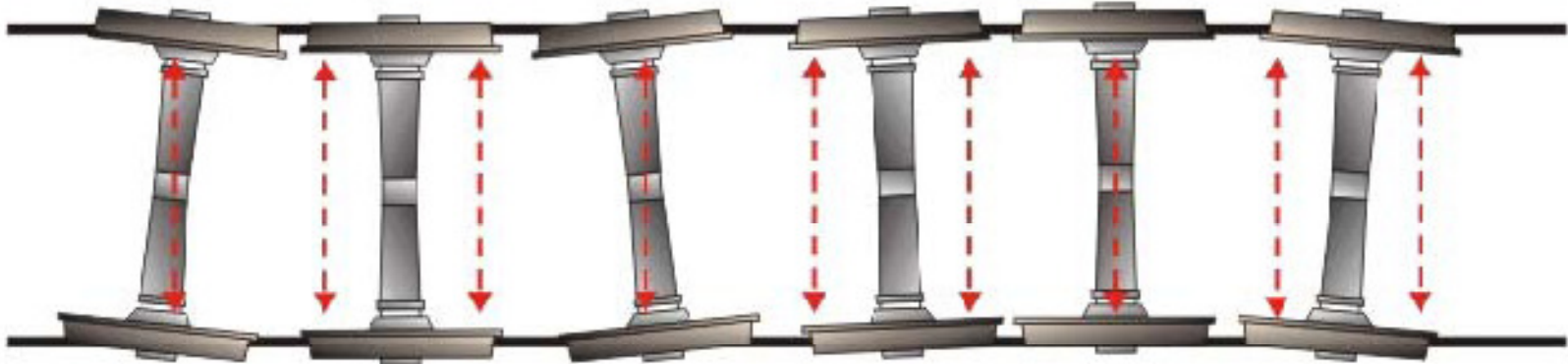


# ***Bearing Animation – Signature Variation***

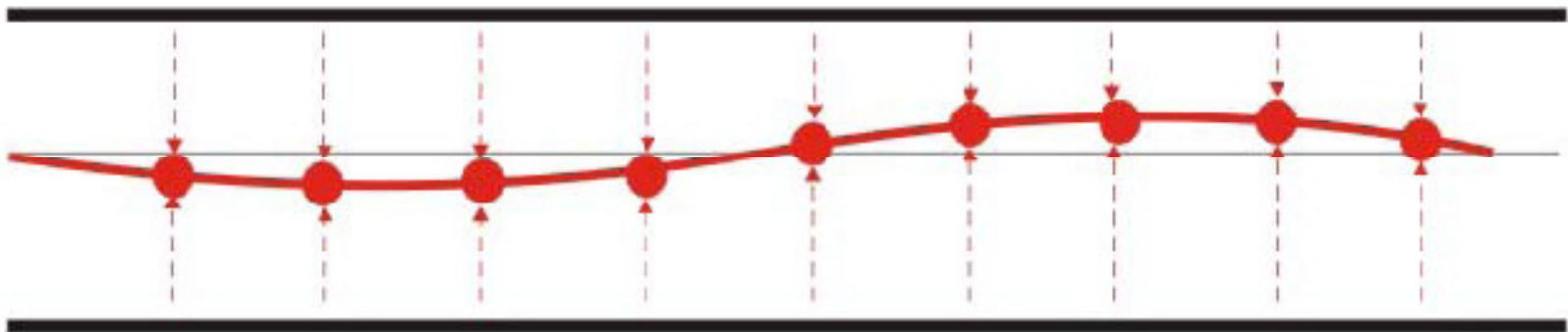




# *Truck Hunting (lateral instability)*



**S9 S8 S7 S6 S5 S4 S3 S2 S1**



2514-2



# *Truck Curving Performance*





## ***Agenda Progress...***

- ◆ Wheel Impact Load Detectors (WILD)
- ◆ Truck Hunting Detectors (THD)
- ◆ Acoustic Bearing Detectors (ABD)
- ◆ Truck Performance Detectors (TPD)
- ◆ ***InteRRIS®* Detector Statistics Update**

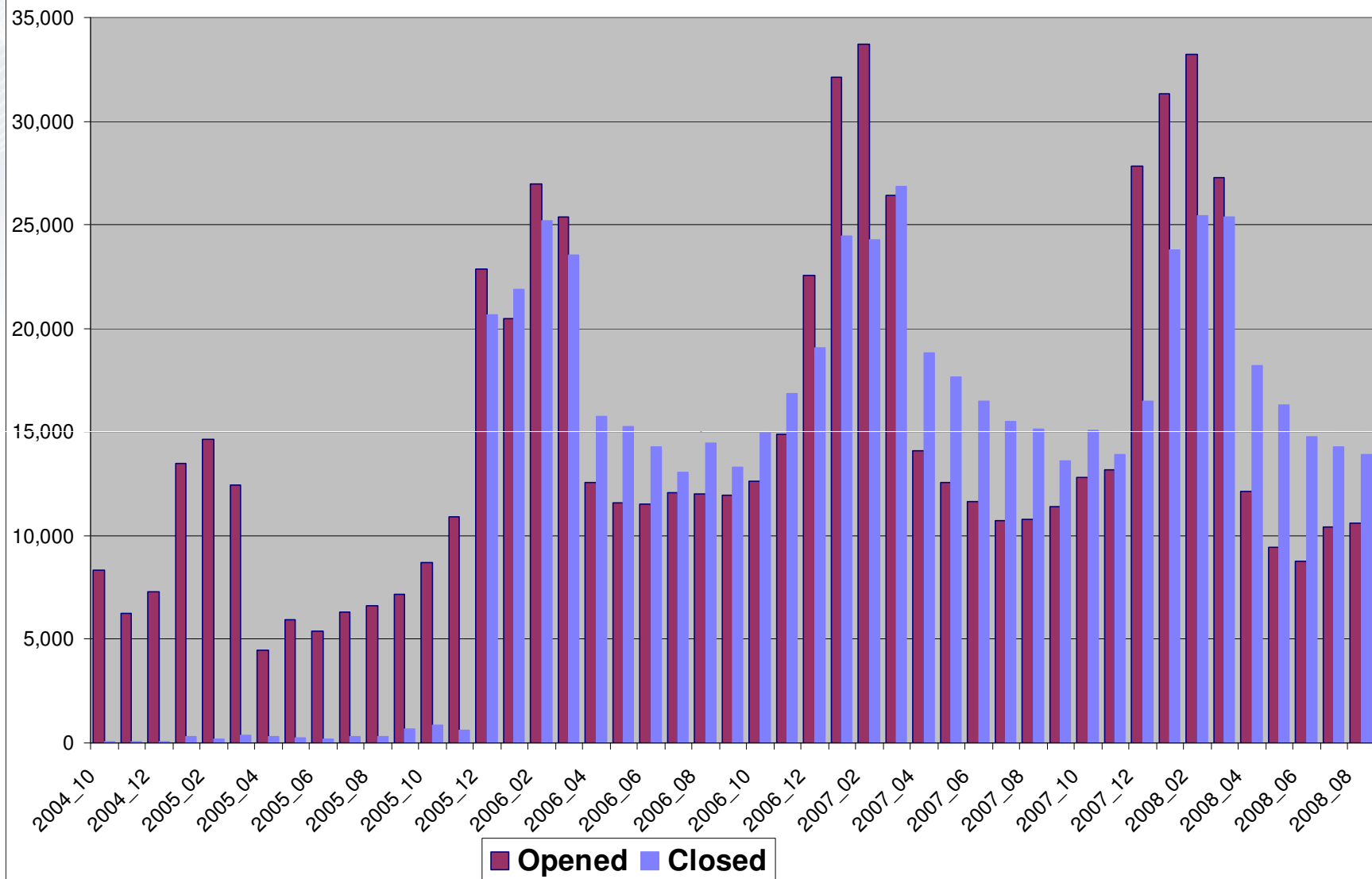


# InteRRIS® Wayside Detector Distribution

Detector sites as of 6/06/2008.

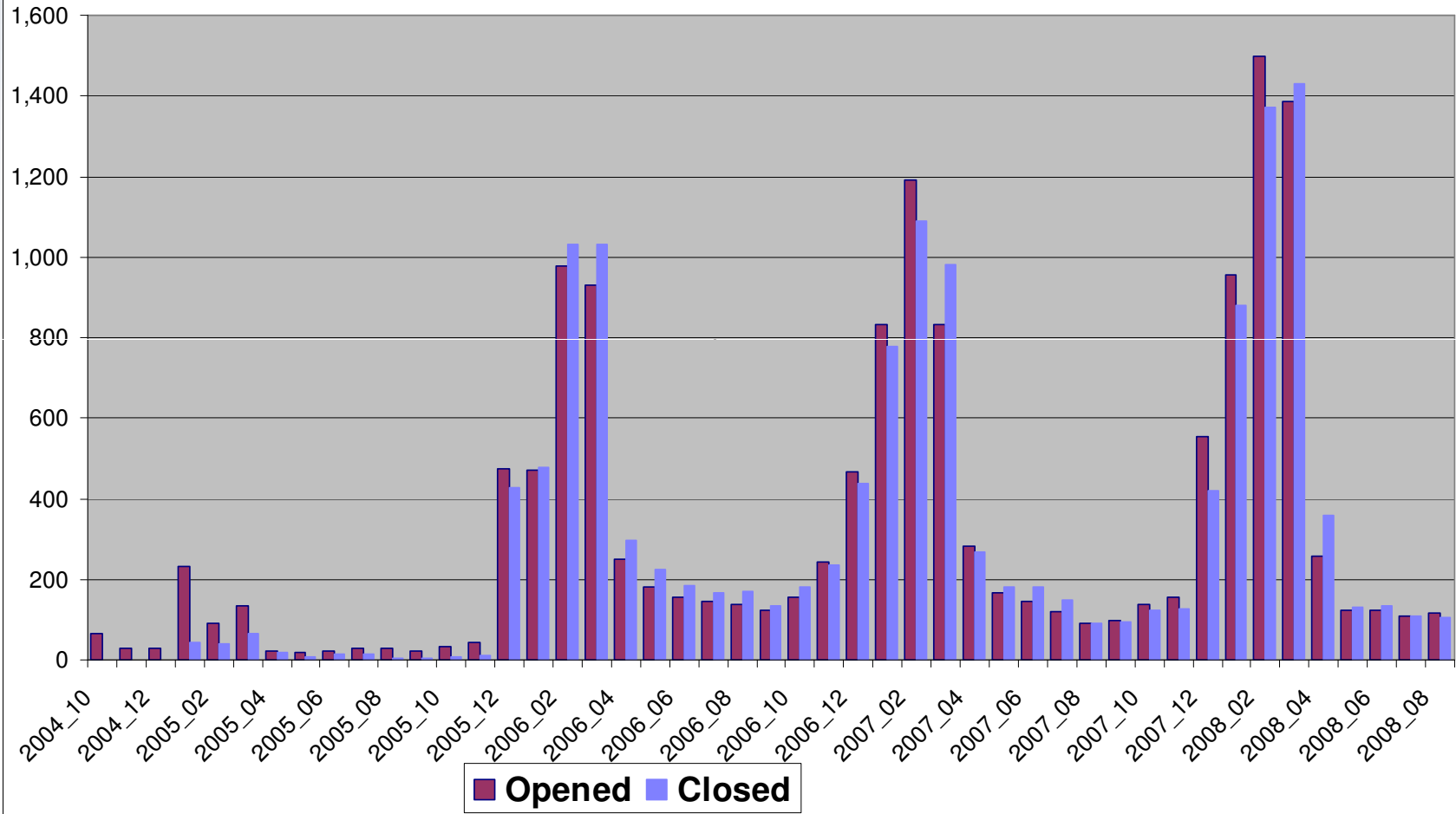
Based on USGS DLG. 1:25,500,000, Geographic Projection, DD.  
2008 (c) , Transportation Technology Center, Inc.

## EHMS Alerts: WILD Condemnable

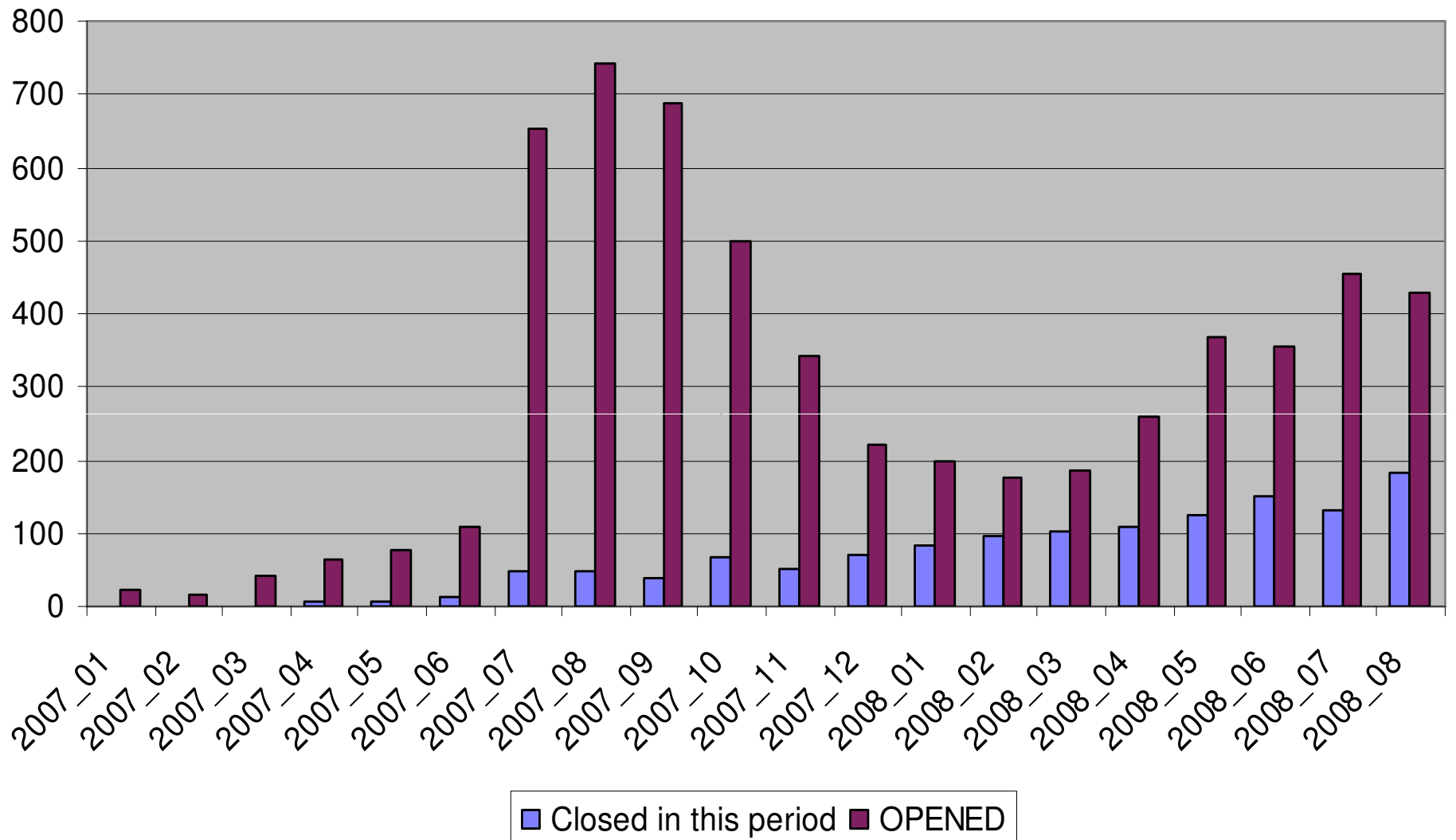


# Industry Vehicle Performance Database:

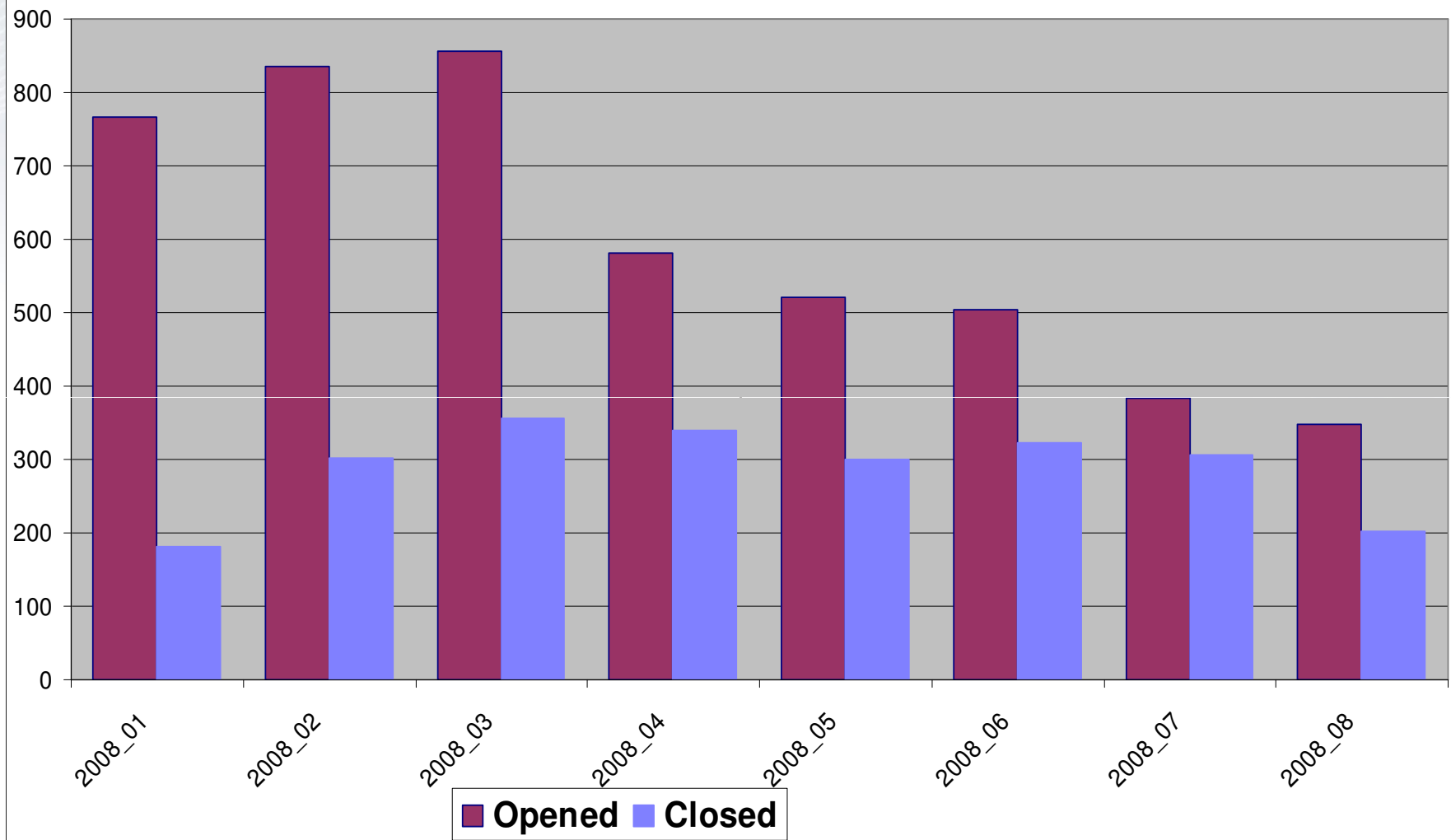
## EHMS Alerts: WILD Final Alerts



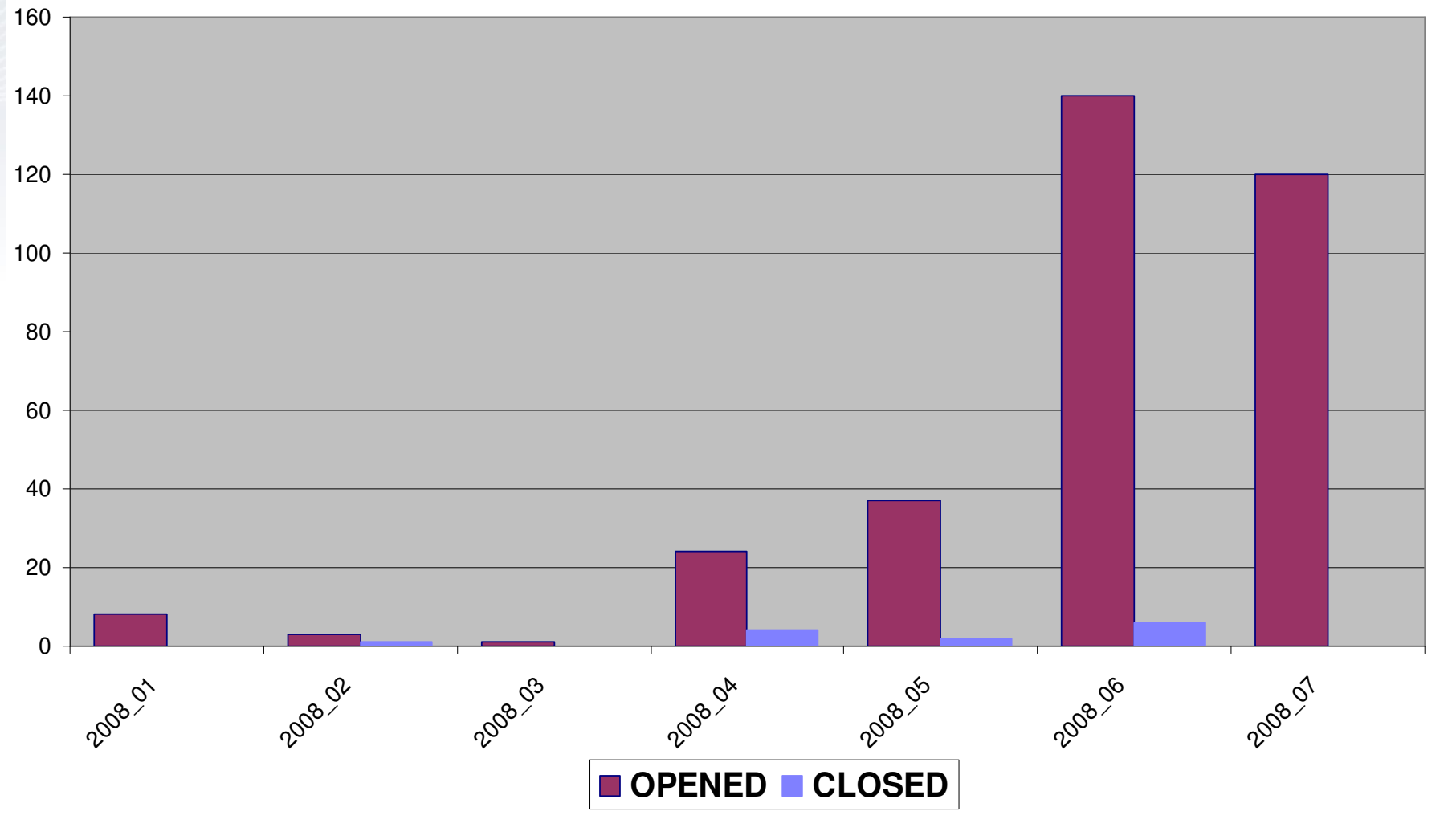
## EHMS: THD Alerts



## EHMS Alerts: ABD Condemnable



## EHMS Alerts: TPD Condemnable



## *Summary*

### ◆ **Stress State Improving?**

- Wheel Impacts: Absolutely!
- Truck Hunting: Too Early...
- Acoustic Bearing: Promising...
- Truck [Curving] Performance: Way Too Early..

◆ Questions??

*That's All Folks!!*

