



Advanced Technology Session: Wayside Detection System Alerts and Data Summaries

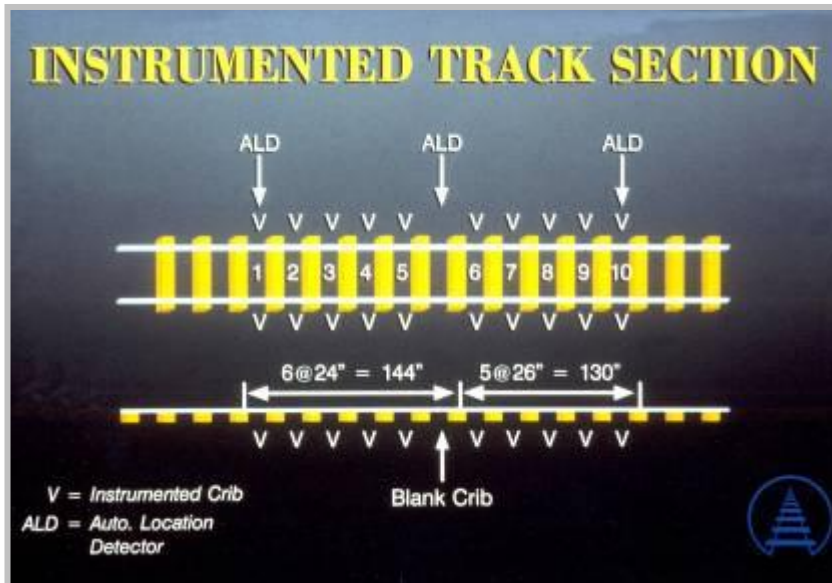
R. B. Wiley – TTCI
Chip Summey – Railinc

Wayside Detection System Alerts and Data Summaries

- **Detector Data Overview**
- **Data Interpretation Challenges**
- **Benefits of Data Summaries for Preventative Maintenance**
- **Interpreting Data Summary Information**
- **Accessing Data Summaries**
- **Additional Information and Questions**



Wheel Impact Load Detectors (WILD)



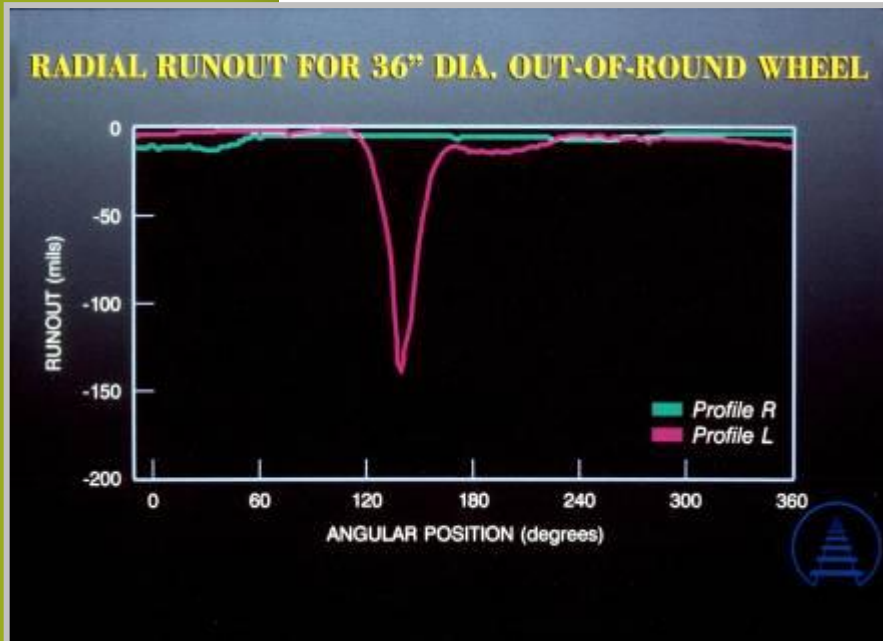
Electronic Equipment



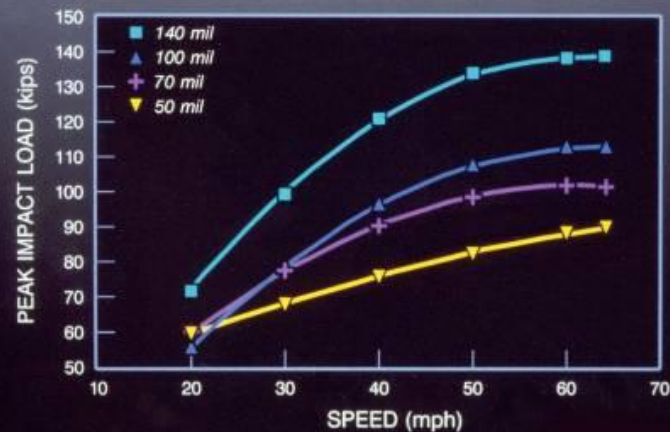
TTCI Testing of Impact Load Detectors



Wheel Impact Loads: Flat



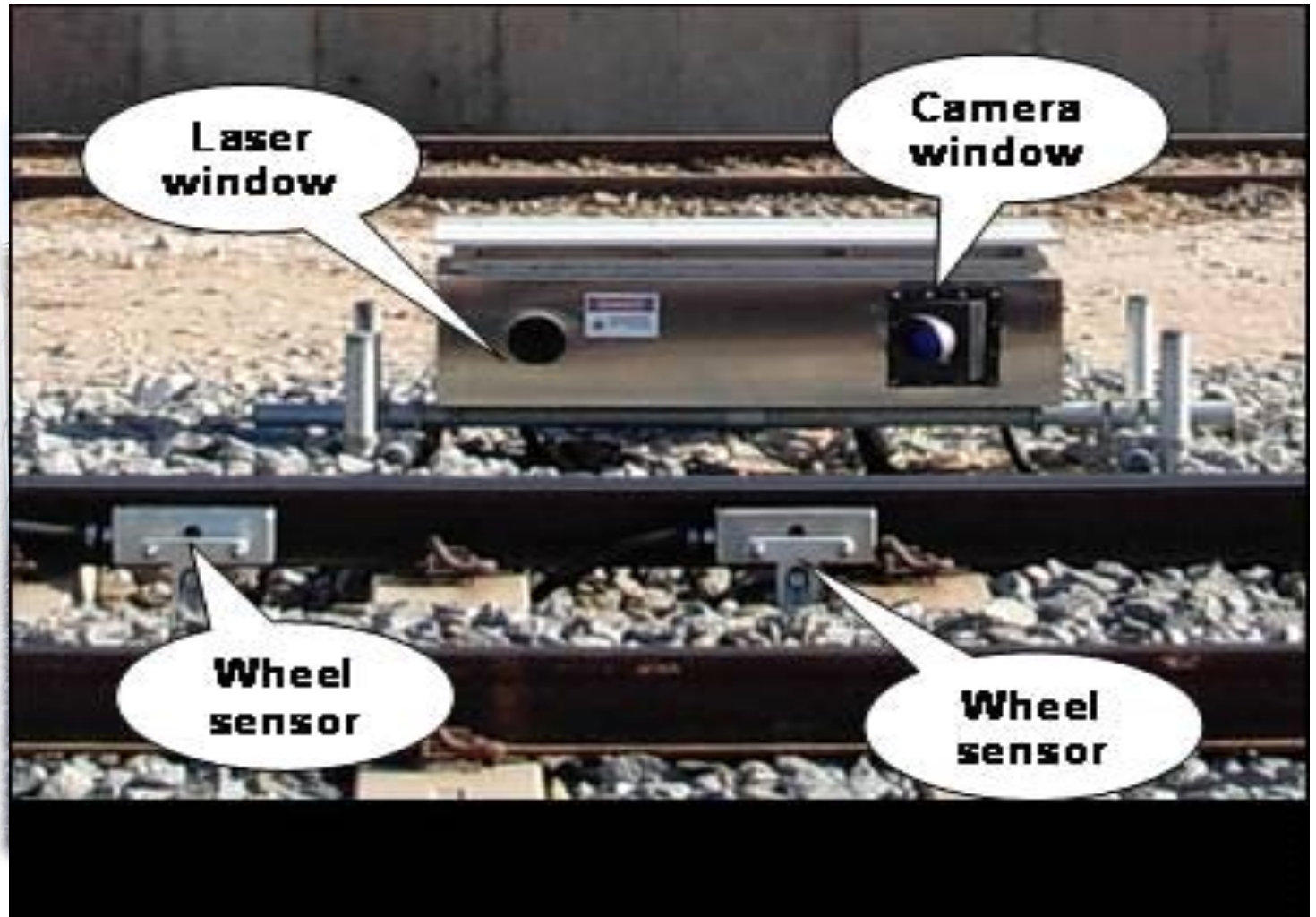
**EFFECT OF RADIAL RUNOUT
ON IMPACT LOADS**
O.O.R. Wheels, 100-Ton Loaded Cars



Detector/Monitor Overview



Detector/Monitor Overview



Industry Detector Coverage

Wheel Impact Load Detectors (~170)

Bogie Steering Performance (~15)

Bogie Geometry (~25)

Acoustic Bearing (~40)

Hot Bearing Box (~6000)

Wheel Profile (~10)

Brake Shoe Thickness (~3)

Cracked Wheel (1)

Safety Appliance (2)

*High Speed Stability (~82...added to WILD)

Hot/Cold Wheel (~700)

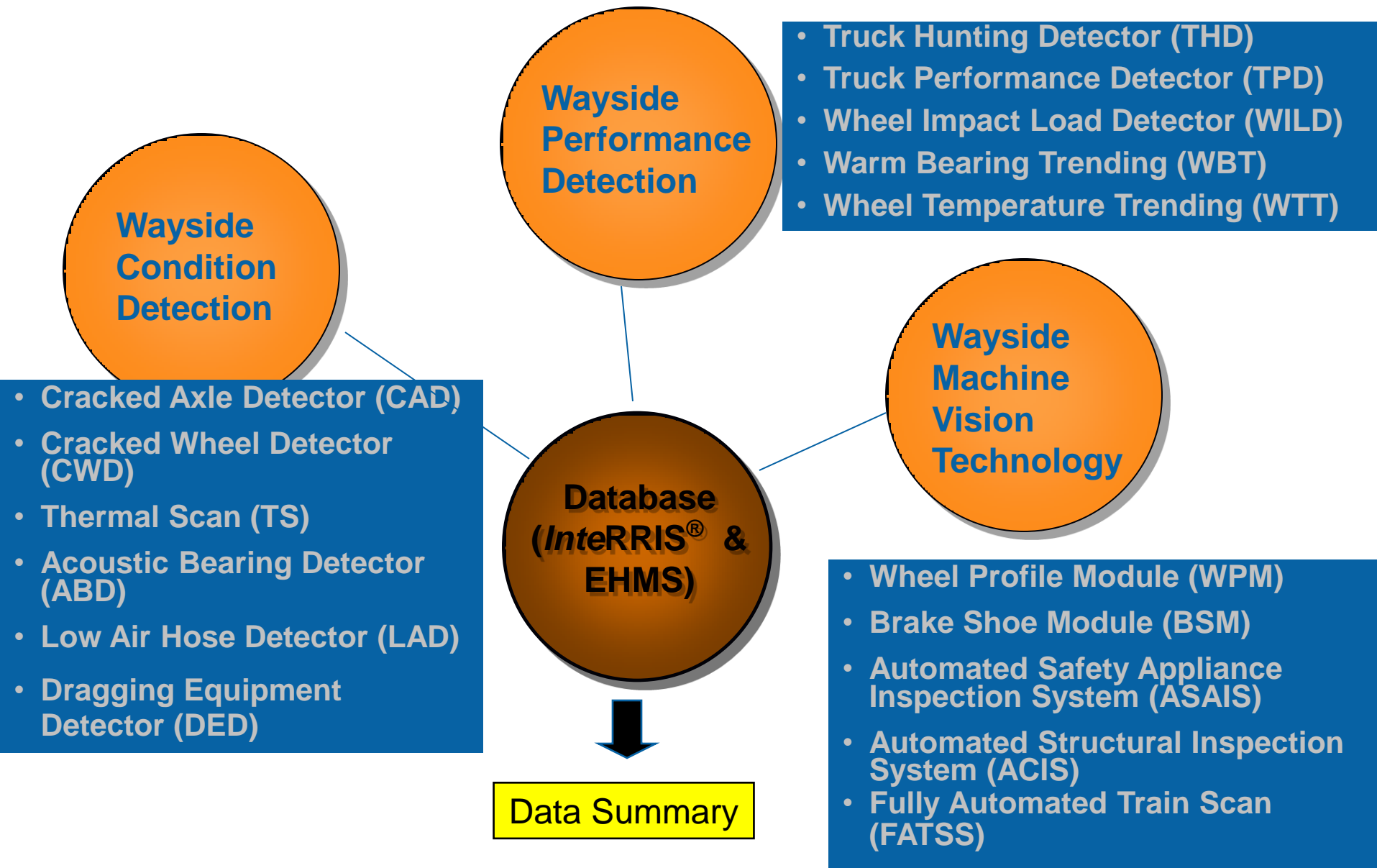
Dragging Equipment (~6000)

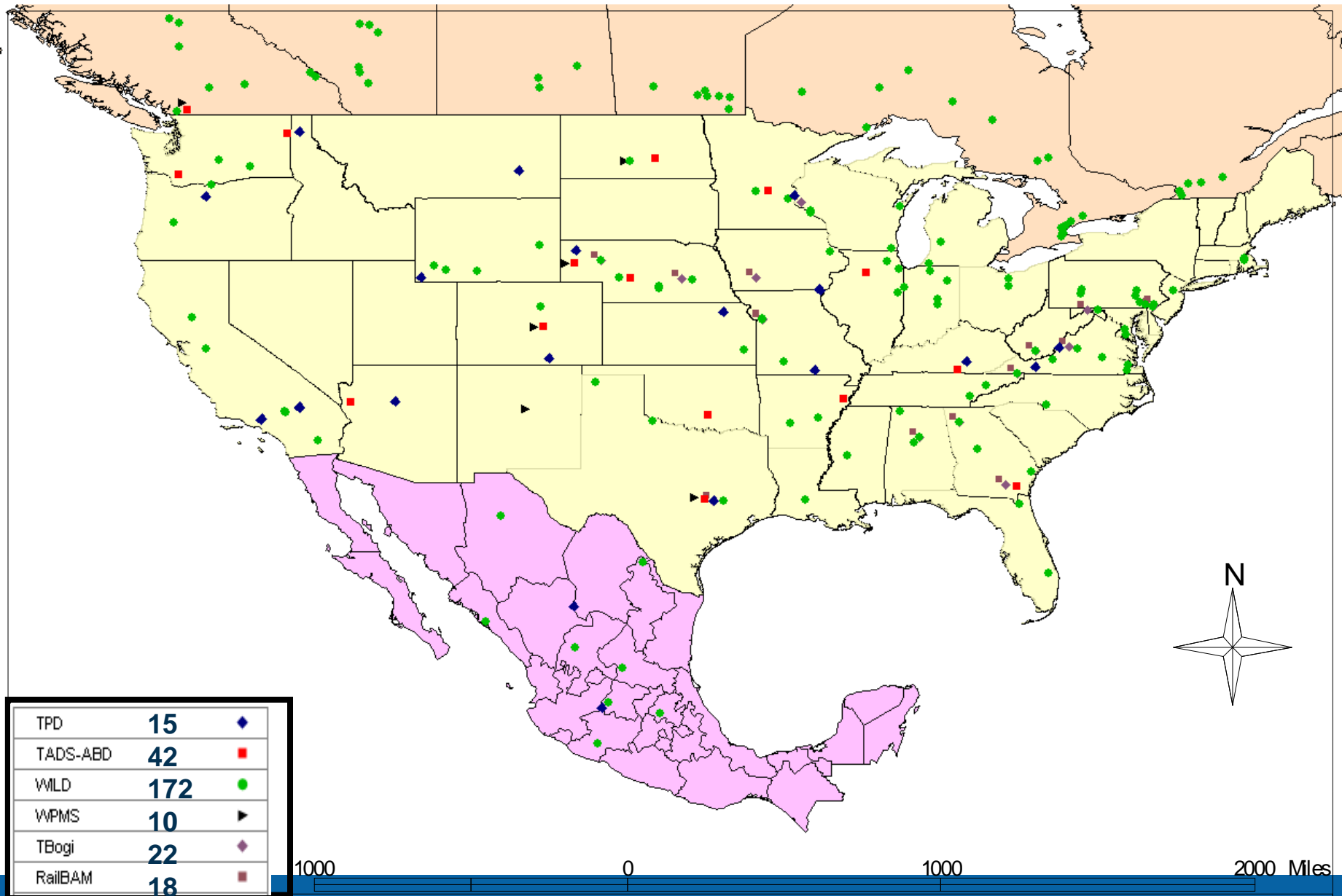
* Detectors installed and maintained by railroads

* Most detector types are coupled with Automatic Equipment Identification (AEI) information



Vehicle Health Monitoring Systems





Wayside Detector Distribution

03/13/2013

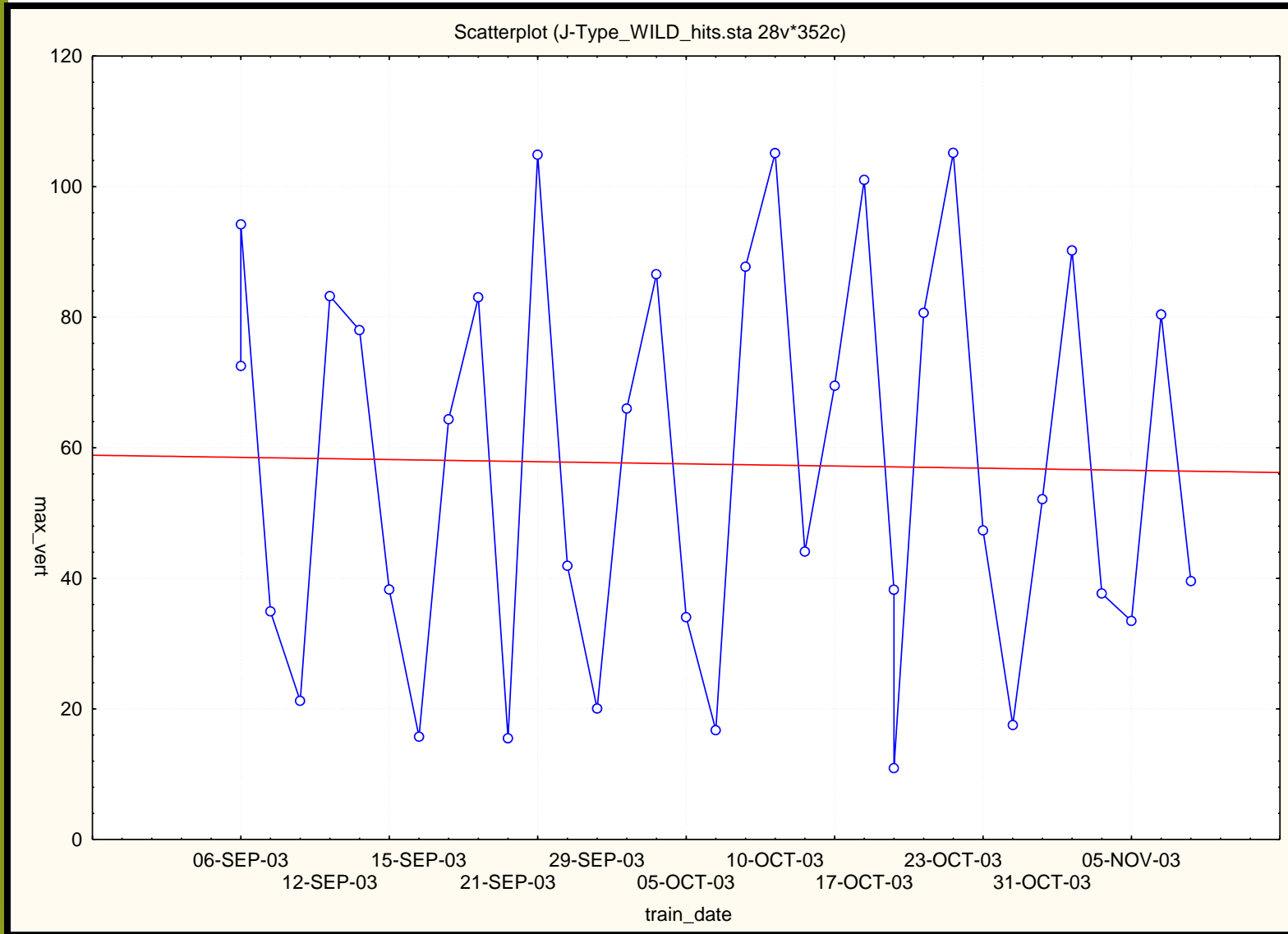
Based on USGS DLG. 1:25,500,000, Geographic Projection, DD.
2013(c), Transportation Technology Center, Inc.

Wayside Detection System Alerts and Data Summaries

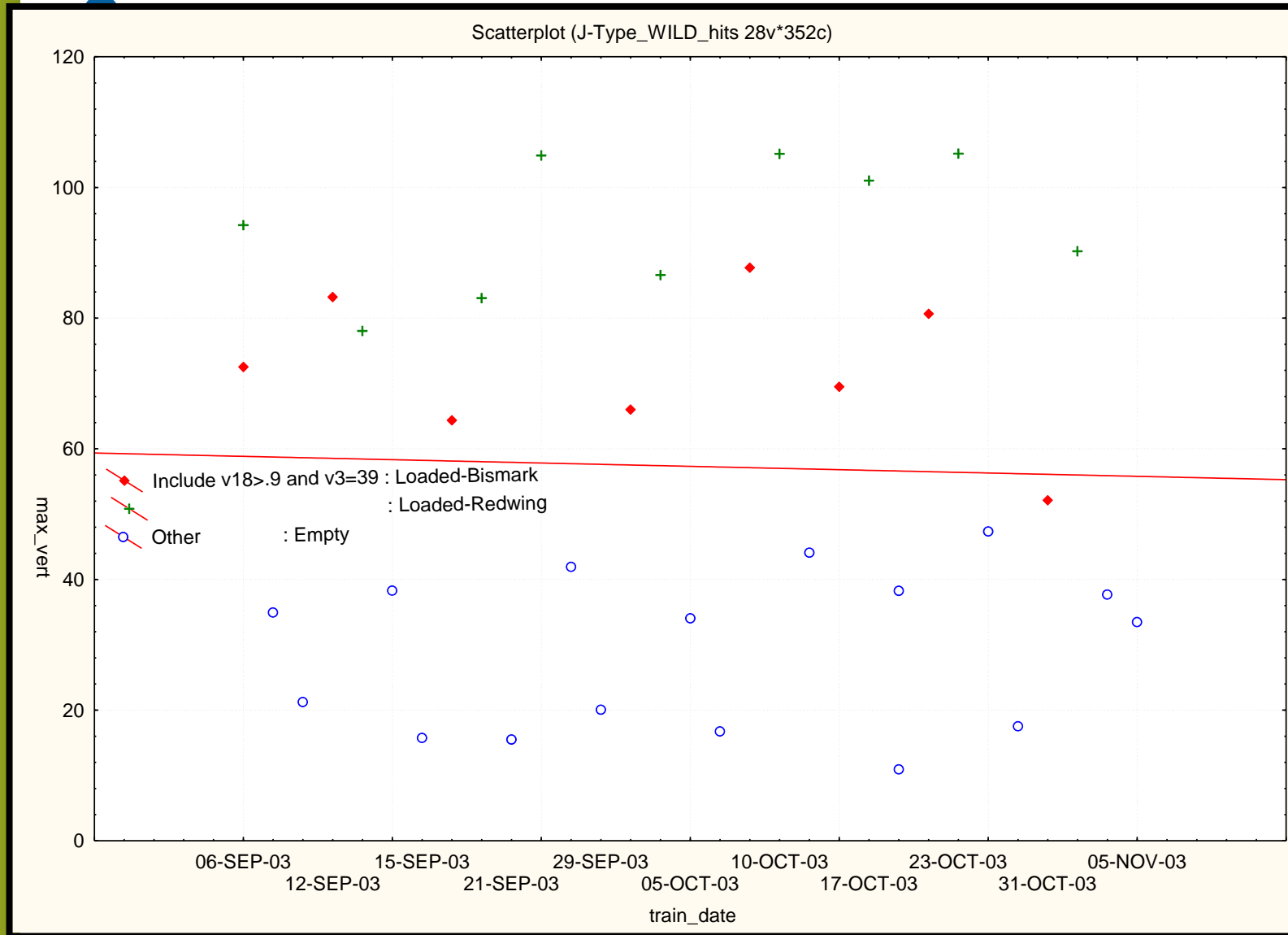
- Detector Data Overview
- **Data Interpretation Challenges**
- Benefits of Data Summaries for Preventative Maintenance
- Interpreting Data Summary Information
- Accessing Data Summaries
- Additional Information and Questions



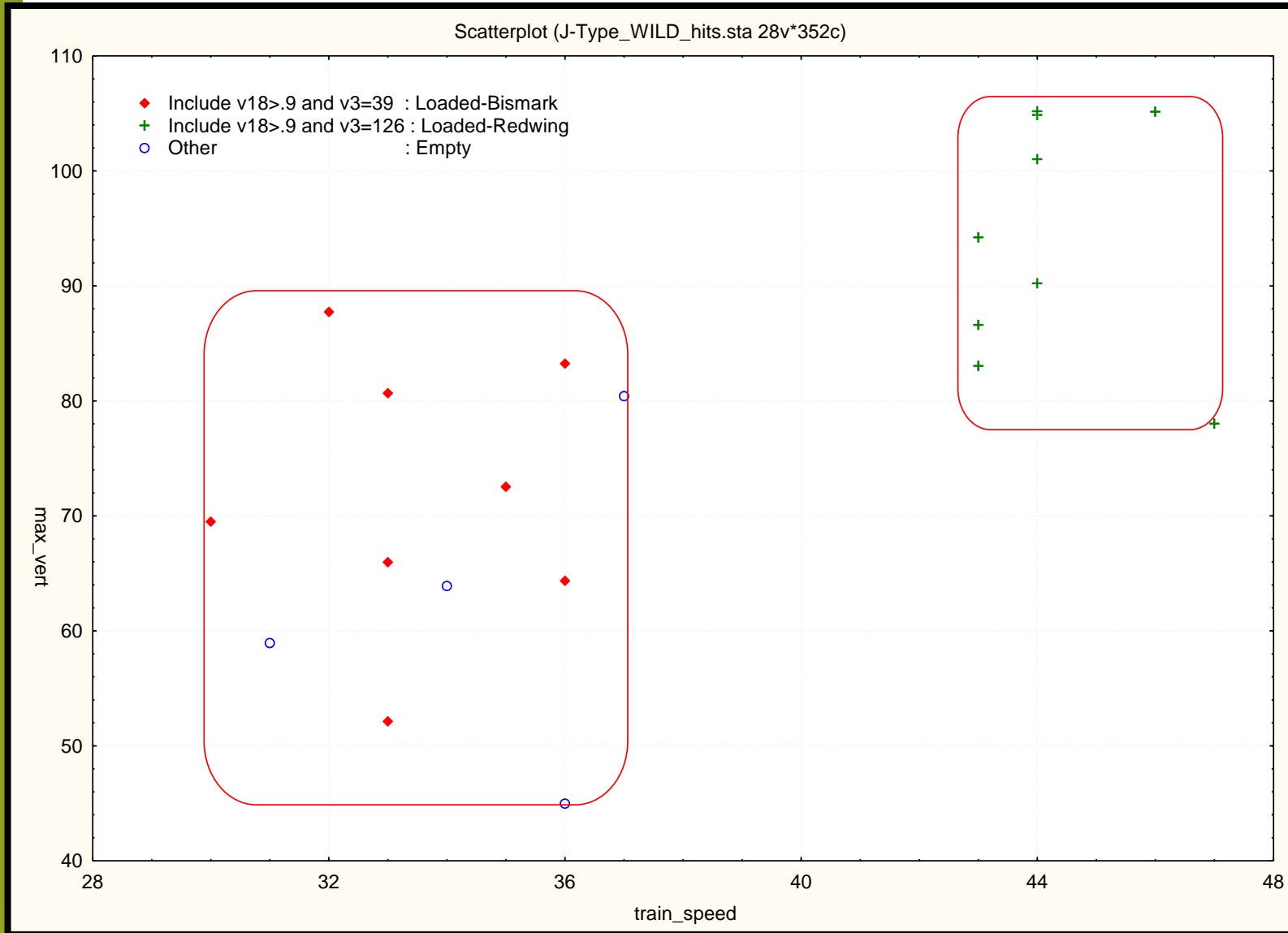
Ungrouped/Uncategorized Data



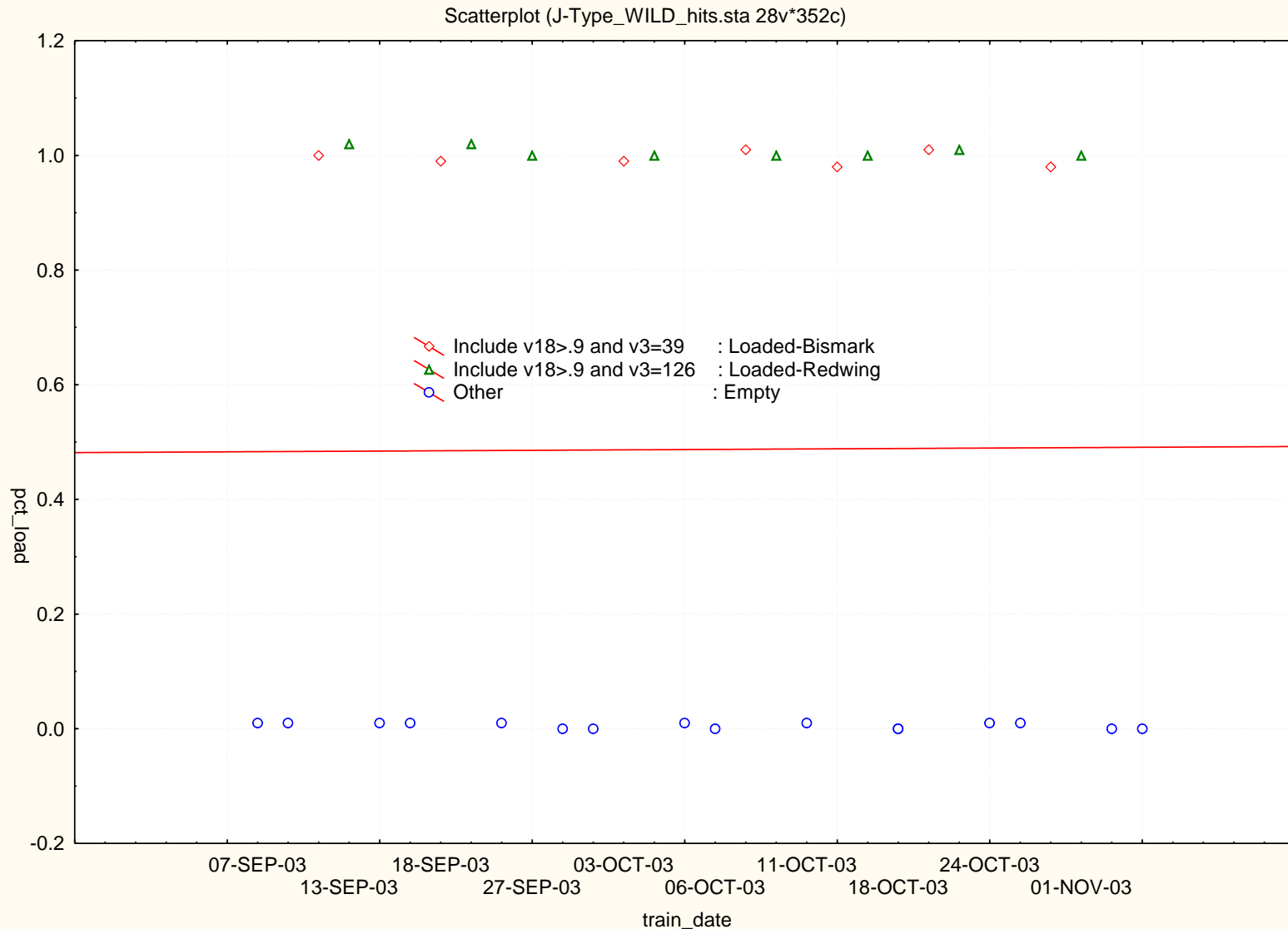
Load Condition:Site - Variation



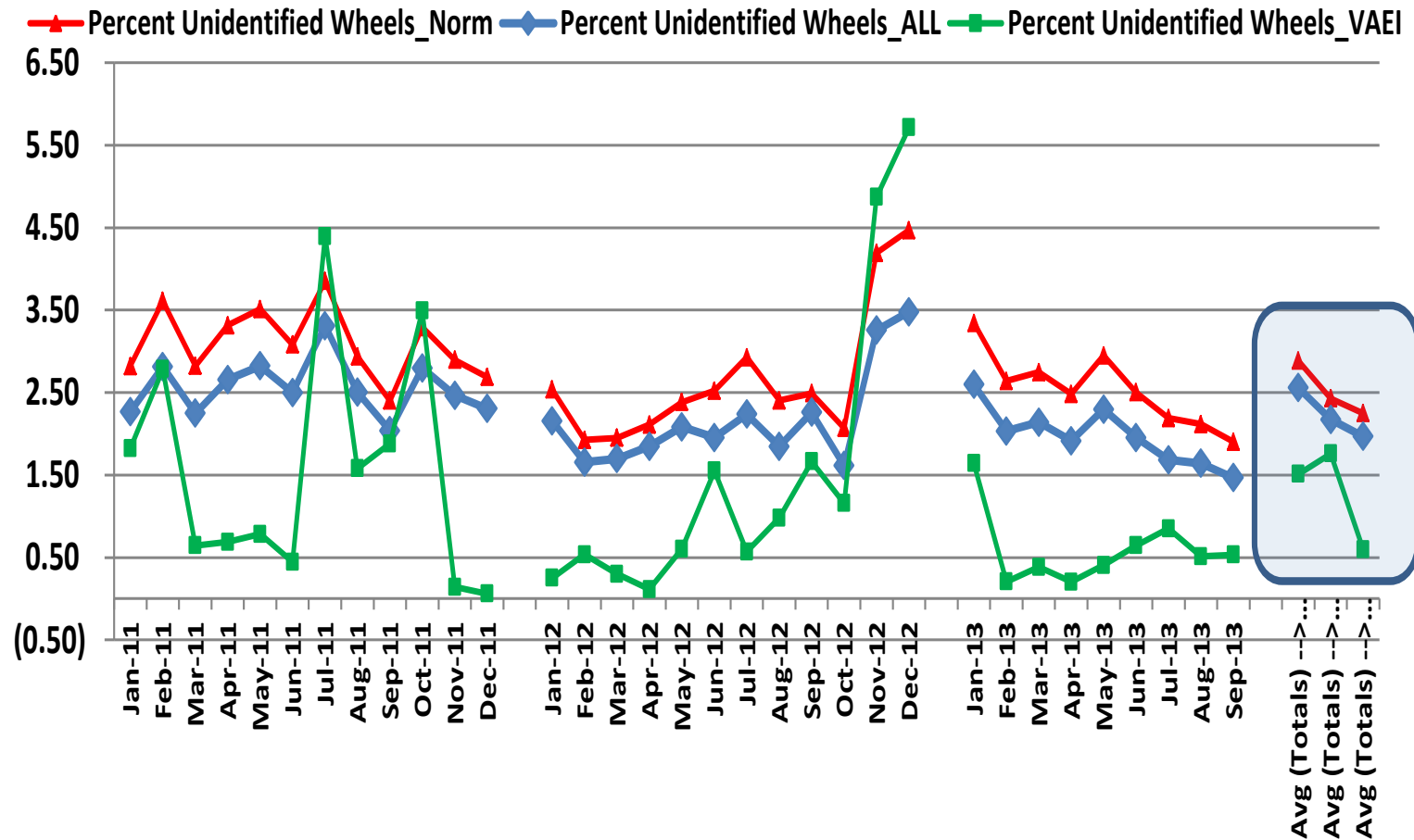
Speed:Site - Variation Sources



Vertical Force Accuracy: Load Estimate



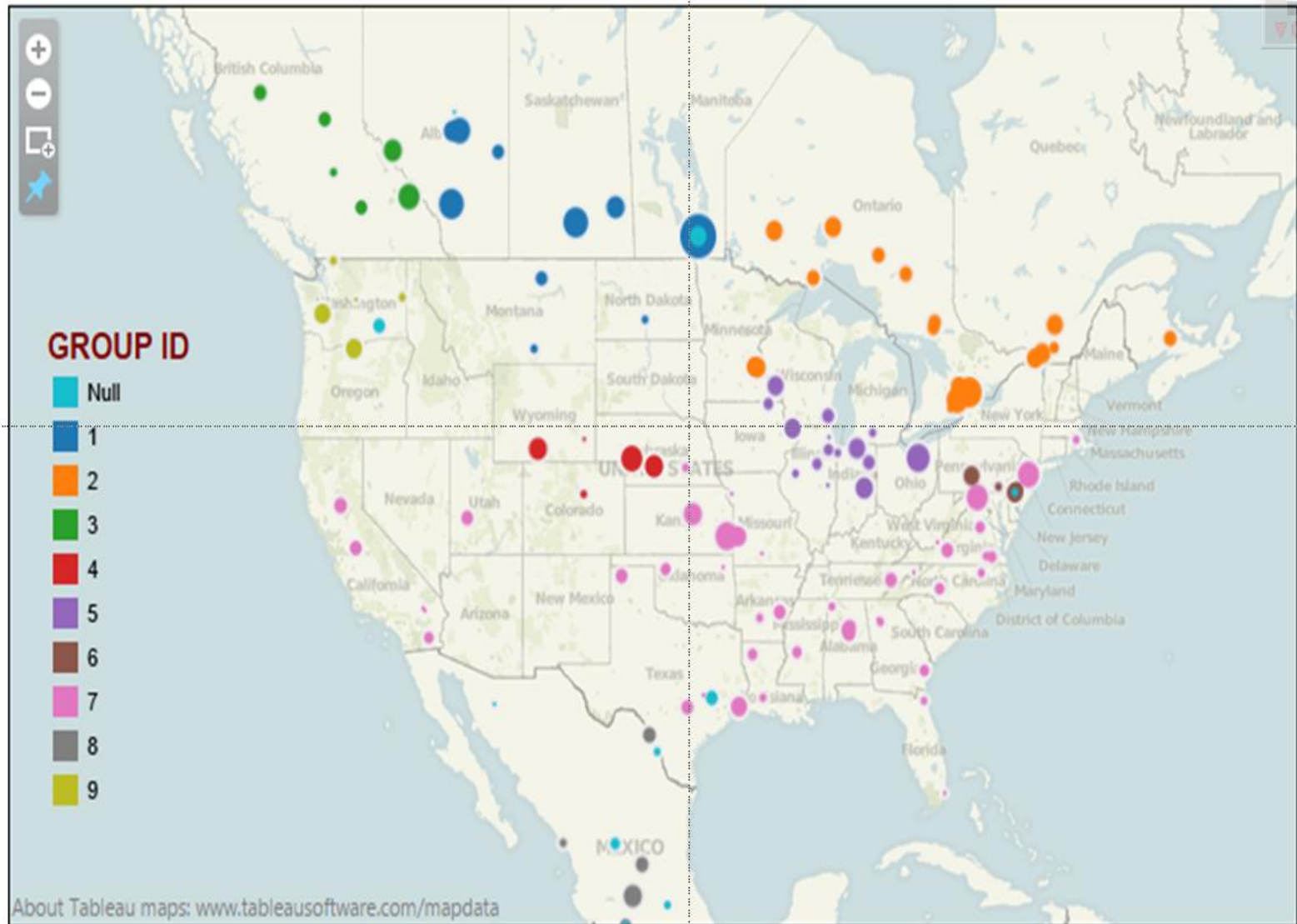
Data Quality: Usability



Monthly Performance Reporting



Overall Data Quality & Alert Integrity



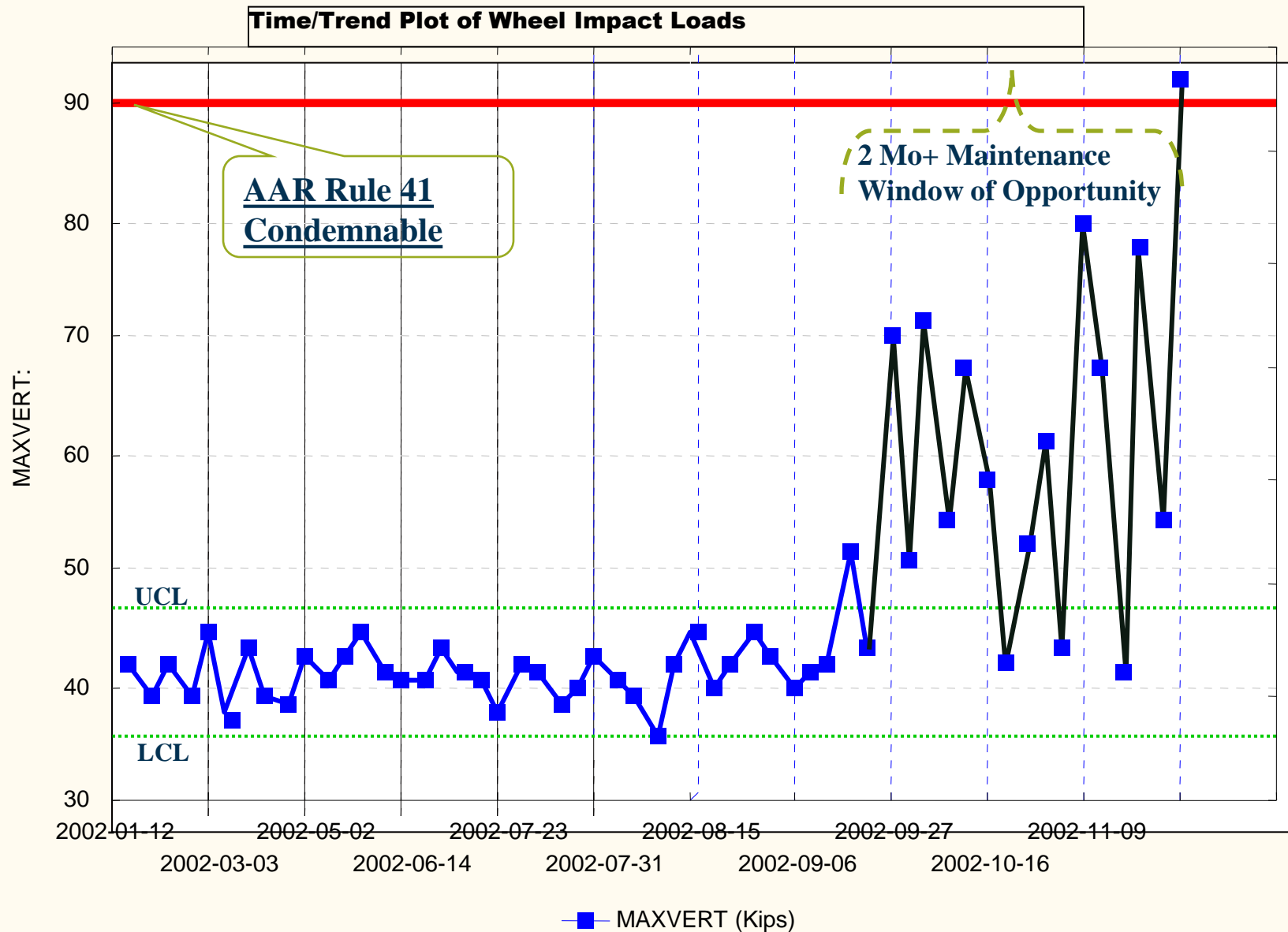
Detector Analytics Study

Wayside Detection System Alerts and Data Summaries

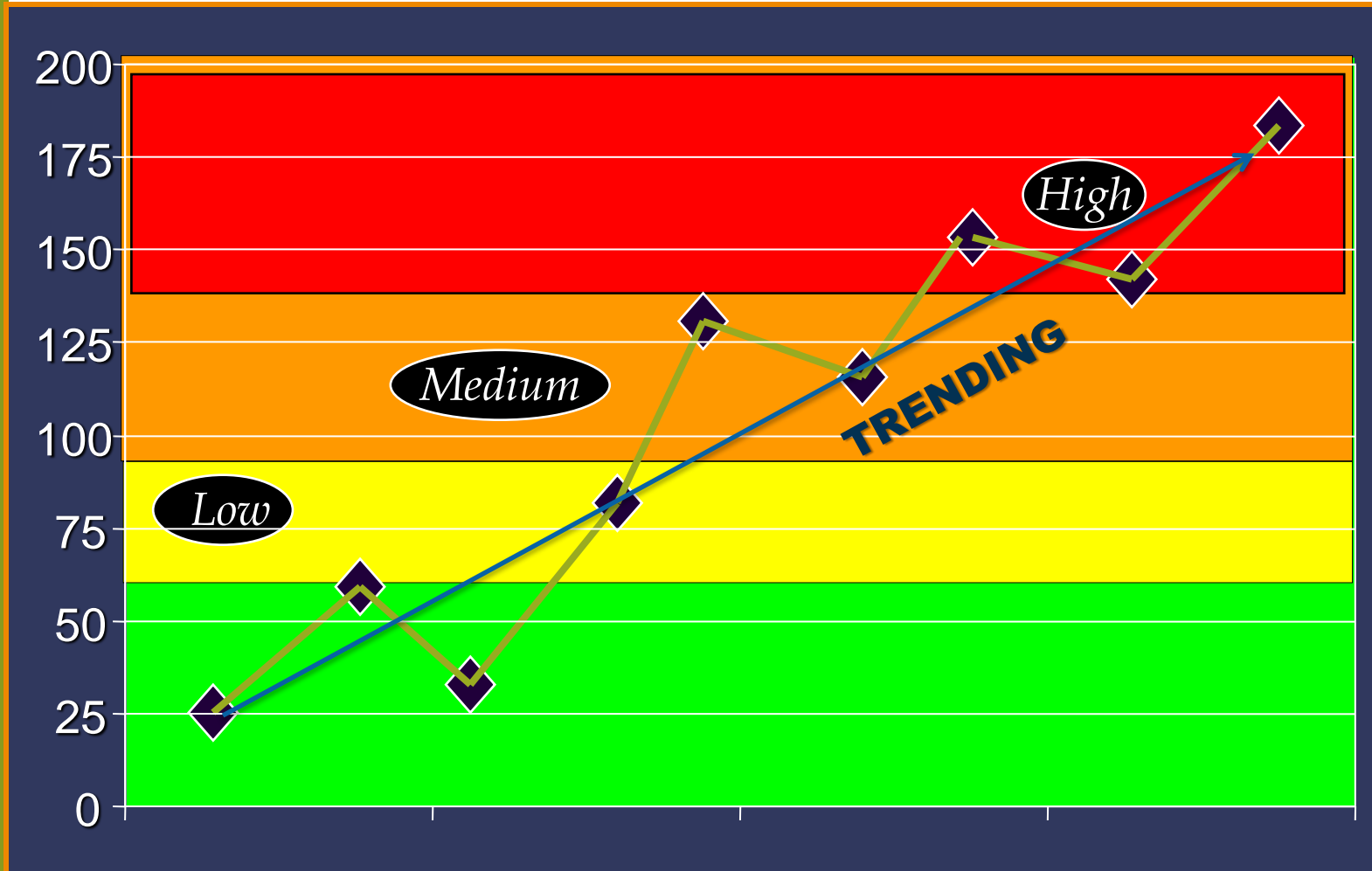
- Detector Data Overview
- Data Interpretation Challenges
- **Benefits of Data Summaries for Preventative Maintenance**
- Interpreting Data Summary Information
- Accessing Data Summaries
- Additional Information and Questions



Trend Analysis for Predictive/Preventive Maintenance



Predictive, or Planned Maintenance



Wayside Detection System Alerts and Data Summaries

- Detector Data Overview
- Data Interpretation Challenges
- Benefits of Data Summaries for Preventative Maintenance
- **Interpreting Data Summary Information**
- Accessing Data Summaries
- Additional Information and Questions



Data Summary Definition

- There are three main parts to Data Summary Definitions
 - Data Elements Definition
 - Criteria for Opening a Data Summary
 - Criteria for Closing a Data Summary
- Definitions are meant to be:
 - Lean (quick development)
 - Reproducible (quick deployment)



Data Summary Elements

- Component Based
- XML Format
- Aggregated Values



Data Summary: Wheel Impact (Salient)

I. Included Data Elements of the data summary - Common Elements (Defined in XML format)

```

<Type> DS (Data Summary)
<Format Version>1.0
<CreationTMST> 2001-12-17T09:30:47-05:00
<RR_DB_Key>2147483647
<LastUpdateTMST>2001-12-17T09:30:47-05:00
<DSType> SALIENT WHEEL IMPACT
<DS_Owner/Reporting_System>UPRR
<EquipmentMark>CSXT
<EquipmentNumber>5000
<Location> (location on Eqmt - EMIS nomenclature)
  <ComponentType>WHEEL
  <ComponentName>AXLE
    <ComponentValue>1
  <ComponentName>SIDE
    <ComponentValue>R
<State> O (Open/closed)

<ElementName>OPEN_DATE (TMST when Opening criteria was met for DS creator)

<ElementName>MAX_RATIO (1 to 99)
<ElementName>MAX_DYNAMIC (0 to 999)
<ElementName>MAX_PEAK (0 to 999)

<ElementName>CNT_WLD_READS (1 to 999)
<ElementName>CNT_GT_90_PK (0 to 999)
<ElementName>CNT_GT_80_PK (0 to 999)
<ElementName>CNT_GT_30_DYN (0 to 999)

<ElementName>FIRST_DATE_GT_80_PK (present minus 1000 days to present)
<ElementName>FIRST_DATE_GT_90_PK (present minus 1000 days to present)
<ElementName>FIRST_DATE_GT_30_DYN (present minus 1000 days to present)

<ElementName>LAST_RATIO
<ElementName>LAST_DYNAMIC
<ElementName>LAST_EQMT_SPEED (0 to 99)

<ElementName>LAST_TMST_GE_20_DYN_OR_GE_2_RATIO (present minus 1000 days to present)
<ElementName>TMST_1_LT20Dyn_and_LT2Ratio (Last timestamp with readings Dyn<20 and Ratio<2)
<ElementName>TMST_2_LT20Dyn_and_LT2Ratio (2nd to last)
<ElementName>TMST_3_LT20Dyn_and_LT2Ratio (3rd to last) (present minus 1000 days to present)
  
```

NOTE :

Used for the Autoclose Process:

- TMST_1,2,3 are reset to null when LAST_TMST_GE_20_DYN_OR_GE_2_RATIO is greater than (more recent than) TMST_1_LT20Dyn_and_LT2Ratio
- TMST_1,2,3 are cascaded (per Criteria for Closing (i), when a more recent event LT20Dyn_and_LT2Ratio event occurs, it takes #1 position and #1 moves to #2, etc.)

```

<ElementName>CLOSE_DATE (present minus 1000 days to present)
<ElementName>CLOSE_REASON (as defined by Closing criteria)
<ElementName>CLOSE_USER_ID (as available from Close message)
  
```

Data Summary Opening Criteria

- Could be single or multiple criteria
- WILD Data Summary Example:
 - Dynamic Impact ≥ 30 kips
 - OR Ratio ≥ 3.0
 - OR Peak Impact ≥ 65 kips



Data Summary Closing Criteria

- Could include repair/administrative updates to close
- Must include auto-close criteria
- This focuses on health report based on detector verification
 - This is different than assuming repair was effected correctly
 - Capitalizes on detector usage



Available Data Summaries

- Salient Wheel Impact (WILD)
- Truck Hunting
- Acoustic Bearing – TADS
- Acoustic Bearing - RailBAM



Wheel Impact Load Detector

- Focuses on wheel performance
- WILD Opening criteria:
 - Dynamic Impact ≥ 30 kips
 - or Ratio ≥ 3.0
 - or Peak Impact ≥ 65 kips
 - or another data summary is opened for that location
- Closing criteria:
 - Three sequential WILD reads less than 20 Dynamic and less than 2.0 ratio
- Only data summary that allows closure by repair or inspection



Data Summary Details

Equipment ID: 0000623089 Location: WHEEL 05L Data Summary: SALIENT WHEEL IMPACT

[Hide Criteria](#)

Opening Criteria: Dynamic Impact ≥ 30 kips or Ratio ≥ 3.0 or Peak Impact ≥ 65 kips

Autoclose Criteria: 3 consecutive reads less than 20 dynamic and less than 2.0 ratio

Date of last bad detector read: 03-16-2014 16:44

Note: all times are Eastern Standard Time (EST)

[Show Aggregate Method](#)

Name	Aggregation	BNSF	CN	KCS	NS
Open Date	11-12-2013 00:00	11-12-2013 00:00	02-26-2014 10:08	01-26-2014 19:59	01-27-2014 16:00
Last Event Date	03-16-2014 16:44	12-22-2013 11:48	03-16-2014 16:44	02-24-2014 11:50	02-22-2014 08:00
Count of DS Creators	5	n/a	n/a	n/a	n/a
Total number of readings	45	11	18	5	0
Max measured peak impact (kips)	67.65	67.65	33.65	30.95	45.00
Max measured dynamic (peak minus weight)	33.80	33.80	25.15	19.52	31.00
Max measured ratio (peak/weight)	5.26	5.26	5.03	2.71	4.00
Count of dynamic readings > 30 KIPS	2	1	0	0	0
Count of peak readings > 80 KIPS	0	0	0	0	0
Count of peak readings > 90 KIPS	0	0	0	0	0
First date the dynamic reading > 30 KIPS	11-24-2013 00:00	11-24-2013 23:14			02-04-2014 03:00
First date the peak reading > 80 KIPS					
First date the peak reading > 90 KIPS					
Latest dynamic reading	15.20	26.87	15.20	15.91	23.00
Latest ratio	2.81	4.82	2.81	2.93	2.00
Latest equipment speed	41.01	59.21	41.01	58.00	59.00
Last bad reading	03-16-2014 16:44	12-22-2013 11:48	03-16-2014 16:44	02-24-2014 11:50	02-22-2014 08:00
Last timestamp with readings Dyn<20 and Ratio<2					
2nd to Last timestamp with readings Dyn<20 and Ratio<2					
3rd to Last timestamp with readings Dyn<20 and Ratio<2					


Truck Hunting Detector

- Measurements of the lateral strain gages from certain WILD detectors
- Focuses on lateral instability
- THD data opening criteria:
 - Truck Hunting Index is ≥ 0.20
 - or another data summary is opened for that location
- Closing criteria:
 - 12 consecutive truck hunting index reads < 0.09 , four of which are lightly loaded < 40 tons
- Refer to Rule 46 of the AAR Interchange Rules



Truck Hunting Data Summary

Data Summary Details

Equipment ID:  0000623089 Location: TRUCK F Data Summary: Truck hunting data summary

[Hide Criteria](#)

Opening Criteria: Truck hunting index ≥ 0.20

Autoclose Criteria: 12 consecutive truck hunting index reads < 0.09 , four of which are lightly loaded, < 40 tons/truck

Date of last bad detector read: 02-24-2014 11:50

Note: all times are Eastern Standard Time (EST)

[Show Aggregate Method](#)


Name	Aggregation	BNSF	KCS	NS
Open Date	12-09-2013 18:12	12-09-2013 18:12	01-26-2014 19:59	01-27-2014 16:40
Last Event Date	02-24-2014 11:50	12-22-2013 11:48	02-24-2014 11:50	02-22-2014 08:51
Count of DS Creators	3	n/a	n/a	n/a
Count of detector reads	18	3	5	10
Count of consecutive reads where the hunting index $< .09$	5	2	0	3
Count of reads where the hunting index $\geq .2$ and $< .35$	3	1	1	1
Count of reads where the hunting index $\geq .35$	0	0	0	0
Timestamp of last read where hunting index $\geq .09$	02-24-2014 11:50	12-09-2013 18:12	02-24-2014 11:50	02-17-2014 21:00
Maximum hunting index	0.28	0.21	0.21	0.28
Latest hunting index	0.21	0.04	0.21	0.01
Latest timestamp where hunting index $\geq .2$ and $< .3$	02-24-2014 11:50	12-09-2013 18:12	02-24-2014 11:50	02-01-2014 16:19
Latest timestamp where hunting index $\geq .3$ and $< .35$				
Latest timestamp where hunting index $\geq .35$ and $< .4$				
Latest timestamp where hunting index $\geq .4$ and $< .5$				
Latest timestamp where hunting index $\geq .5$ and $< .55$				
Latest timestamp where hunting index $\geq .55$ and $< .65$				
Latest timestamp where hunting index $\geq .65$				
Second latest timestamp where hunting index $\geq .2$ and $< .3$				
Second latest timestamp where hunting index $\geq .3$ and $< .35$				

Trackside Acoustical Detection System

- Aids in detection of internal wheel bearing defects
- Audio file data used to create data summary based on Defect Rank, and Defect Type
- TADS opening criteria:
 - Any cup/cone/roller/growler/multi/unknown defect flag that is set
 - or if data summary exists for same location
- Closing Criteria:
 - 6 consecutive reads with no defects



Data Summary Details

Equipment ID:  Location: WHEELBEARING 04L Data Summary: Acoustic_TADS

[Hide Criteria](#)

Opening Criteria: A reading with any defect, including cup, cone, roller, growler, multi, and unknown

Autoclose Criteria: 6 consecutive reads with no defects

Date of last bad detector read: 01-12-2014 03:21

Note: all times are Eastern Standard Time (EST)

[Show Aggregate Method](#)


Name	Aggregation	BNSF
Open Date	11-24-2013 17:45	11-24-2013 17:45
Last Event Date	01-12-2014 03:21	01-12-2014 03:21
Count of DS Creators	1	n/a
Count of readings	8	8
Count without defects		
Count of cup defects		
Count of cone defects	5	5
Count of roller defects		
Count of growler defects		
Count of multi-defects		
Count of unknown defects		
Maximum cup defect ranking		
Maximum cone defect ranking	3	3
Maximum roller defect ranking		
Maximum growler defect ranking		
Maximum multi-defect ranking		
Maximum unknown defect ranking		
First timestamp of any defect	11-24-2013 00:00	11-24-2013 17:45
First timestamp of growler defect		
Count of non-val cup defects		

RailBAM Acoustic Detection

- Aids in detection of internal wheel bearing defects
- Audio file data used to create data summary based on Prefixes, Types, Levels, and Suffixes
- RailBAM opening criteria:
 - Bearing fault measurements defined in data summary definition
 - or if data summary exists for same location
- Closing criteria:
 - Five sequential reads with a severity level of 4



Data Summary Details

Equipment ID:  Location: WHEELBEARING 01L Data Summary: Acoustic_RBAM

[Show Criteria](#)

Note: all times are Eastern Standard Time (EST)

[Show Aggregate Method](#)

Name	Aggregation	CSXT
Open Date	06-01-2013 13:56	06-01-2013 13:56
Last Event Date	03-14-2014 23:48	03-14-2014 23:48
Count of DS Creators	1	n/a
Total RailBAM reads	28	28
Descriptor of read that opened DS	RS2_p	RS2_p
Descriptor of latest read	RS3	RS3
Total fault type RS level 1 reads	8	8
Total fault type RS level 1 reads without a suffix	1	1
Total fault type RS level 2 reads	12	12
Total fault type RS level 2 reads without a suffix	4	4
Total fault type RS level 3 reads	5	5
Total fault type RS level 3 reads without a suffix	5	5
Total fault type RS reads with suffix of e	0	0
Total fault type RS reads with suffix of m	0	0
Total fault type RS reads with suffix of n	0	0
Total fault type RS reads with suffix of p	15	15
Total fault type RS reads with suffix of r	0	0
Date of last problem read	03-14-2014 23:34	03-14-2014 23:34
Date of last good read		
Date of second to last good read		
Date of third to last good read		
Date of fourth to last good read		
Date of fifth to last good read		

Autoclose Reason Codes

- When autoclose occurs, an inspection reason code will identify which type of data summary, i.e., RailBAM
- Indicates data summary has been closed
- Reason Codes are:
 - MX- Wheel Impact (WILD)
 - AX- RailBAM (acoustic)
 - BX- Trackside (TADS)
 - CX- Truck Hunting
- WILD data summaries may close by repair or inspection



Wayside Detection System Alerts and Data Summaries

- Detector Data Overview
- Data Interpretation Challenges
- Benefits of Data Summaries for Preventative Maintenance
- Interpreting Data Summary Information
- **Accessing Data Summaries**
- Additional Information and Questions



EHMS – Equipment Status

 Equipment Health Management System

BSDCS01: UP | Launch Pad ▼ | Contact Us | Sign Out

Home | Alert Closures ▼ | **Equipment History ▼** | Equipment Health View | Notifications ▼ | Detector Health ▼ | Equipment ▼ | Admin ▼ | Documentation ▼

Equipment History

Equipment Status Query

Latest ABT Query

Welcome

InterRRIS® Data Growler File Download
 [Get Blob Viewer](#)

News and Updates

more ▼ ▲

Release: EHMS; Build-Label: jenkins-ehms7-dev-212, Build-DateTime: 2013-01-17_10-20-35,

legal notices | privacy rights | terms of service | contact us

© 2010 Railinc. All rights reserved.

Equipment Status Query Screen



Equipment Health Management System

BSDCS01: RAIL

Launch Pad ▾

Contact Us

Sign Out

Home

Alert Closures ▾

Equipment History ▾

Equipment Health View

Notifications ▾

Detector Health ▾

Equipment ▾

Admin ▾

Documentation ▾

Equipment Status

Search Criteria

*Equipment ID:

0000724199

Date Range:



Search

Reset

Clear

Alerts

Equipment ID:	Alert Type	Location:	Alert Level	Close Alert
0000724199	WILD	WHEEL 01L	AAR Opportunistic	

Export

Print

Data Summaries


	Equipment ID:	Data Summary Type	Owner	Location:	Earliest Open Date	Latest Event Date	Report Repair/Inspection	Opened in Error
	- 0000724199	SALIENT_WHEEL_IMPACT	TFM,UP	WHEEL 02L	02-22-2014	03-02-2014		
	- 0000724199	SALIENT_WHEEL_IMPACT	TFM,UP	WHEEL 02R	02-22-2014	03-02-2014		
	- 0000724199	SALIENT_WHEEL_IMPACT	BNSF,CSXT,FEC,TFM,UP	WHEEL 01L	04-29-2011	03-15-2014		

Export

Print

Data Summary Rollup
Icon

Data Summary Details

Equipment ID:  K0000724199 Location: WHEEL 02L Data Summary: SALIENT WHEEL IMPACT

[Show Criteria](#)

Note: all times are Eastern Standard Time (EST)

[Show Aggregate Method](#)

Name	Aggregation	TFM
Open Date	02-22-2014 08:46	02-24-2014 08:36
Last Event Date	03-02-2014 20:08	03-02-2014 20:08
Count of DS Creators	2	n/a
Total number of readings	5	4
Max measured peak impact (kips)	24.69	24.69
Max measured dynamic (peak minus weight)	8.34	8.34
Max measured ratio (peak/weight)	1.51	1.51
Count of dynamic readings > 30 KIPS		
Count of peak readings > 80 KIPS		
Count of peak readings > 90 KIPS		
First date the dynamic reading > 30 KIPS		
First date the peak reading > 80 KIPS		
First date the peak reading > 90 KIPS		
Latest dynamic reading	7.14	7.14
Latest ratio	1.36	1.36
Latest equipment speed	48.56	48.56
Last bad reading		
Last timestamp with readings Dyn<20 and Ratio<2	03-02-2014 20:08	03-02-2014 20:08
2nd to Last timestamp with readings Dyn<20 and Ratio<2	03-02-2014 04:19	03-02-2014 04:19
3rd to Last timestamp with readings Dyn<20 and Ratio<2	02-24-2014 21:04	02-24-2014 21:04

Equipment Health View



Equipment Health View

BSDCS01 : RAIL

Launch Pad ▾

Contact Us

Sign Out

Home

Fleet Stats

User Guide

Search

[Return to Application](#)

Clear

Search

Equipment Location



Location information for equipment
is confidential

Umler Registry

General

Capacity

Specifications

Truck Count

Repair and Inspection Reporting -

Equipment ID

Repair Date

SPLC

Performer

Reporter

DTTX0000724199

03-18-2014



RAIL

Select Action ▾

Clear

Submit

Umler Inspections

Air Brake Test

Inspection Date Done 12/06/2011
ABT 12-24 Month Due Date 12/06/2012
ABT 5/8-Year Due Date 12/01/2016

[Inspection](#)

Reflectorization Event

Inspection Date Done 10/25/2006

[Inspection](#)

[Launch Umler](#)

Equipment Health Management System

Alert Type	Location	Alert Level	At Level Since	Action	Action
WILD ALERTS	Wheel 01L	AAR Opportunistic	03/12/2014	Inspection	Repair
Data Summary		Location	Status	Maximum Readings	
SALIENT WHEEL IMPACT		Wheel 02L	Autoclose in progress	Peak 24.7 Dyn 8.3 Ratio 1.5	
SALIENT WHEEL IMPACT		Wheel 02R	Autoclose in progress	Peak 18.9 Dyn 3.6 Ratio 1.3	
SALIENT WHEEL IMPACT		Wheel 01L	Opportunistic alert	Peak 84.6 Dyn 62.7 Ratio 4.7	

[Launch EHMS](#)

Equipment Health View: Alert and Data Summary Information

Equipment Health Management System

Alert Type	Location	Alert Level	At Level Since	Action	Action
WILD ALERTS	Wheel 01L	AAR Opportunistic	03/12/2014	Inspection	Repair
Data Summary	Location	Status	Maximum Readings		
SALIENT WHEEL IMPACT	Wheel 02L	Autoclose in progress	Peak 24.7 Dyn 8.3 Ratio 1.5		
SALIENT WHEEL IMPACT	Wheel 02R	Autoclose in progress	Peak 18.9 Dyn 3.6 Ratio 1.3		
SALIENT WHEEL IMPACT	Wheel 01L	Opportunistic alert	Peak 84.6 Dyn 62.7 Ratio 4.7		

 [Launch EHMS](#) 

- 02L and 02R are both in autoclose
- 01L is still an opportunistic alert, but its peak Dynamic reading is very high – will probably not remain opportunistic long.



Manually Closing WILD Data Summaries

Equipment Status

Search Criteria

*Equipment ID: bnsf2915

Date Range:



Data Summaries: ☒ Open ☒ Closed

Search

Reset

Clear

Data Summaries

	<u>Equipment ID</u>	<u>Data Summary Type</u>	<u>Owner</u>	<u>Location</u>	<u>Open Date</u>	<u>Close Date</u>	<u>Close Alert</u>
	BNSF - 0000002915	SALIENT_WHEEL_IMPACT	BNSF	WHEEL 01R	04-05-2008		


Export

Print

Data Summary
Closure Icon



Manually Closing WILD Data Summaries

 Equipment Health Management SystemBSDCS01: RAIL | Launch Pad ▾ | Contact Us | Sign Out

Home | Alert Closures ▾ | Equipment History ▾ | Equipment Health View | Notifications ▾ | Detector Health ▾ | Equipment ▾ | Admin ▾ | Documentation ▾

Alert Closure Reporting

Notes:

- Only an inspection can close a THD, TPDG or TPDL alert. Repairs do not close truck alerts.
- An ME inspection will not close an alert.
- Submitting an ABT will generate a billable charge.
- Submitting an ABT requires that the user have proper permissions within the Umler application.
- Component Tag ID should only be entered once per axle location and Equipment ID.

		Equipment		*Closure Made By	Closure Rptd By	*Closure Date	*SPLC	ABT	
	<input type="checkbox"/>	*Initial	*Number					Performer	Reporter
1.	<input type="checkbox"/>	RAIL	0000000301	RAIL	RAIL	05-02-2012	622345000		
				Job Code	Why Made Code	Location		Component Tag Id	
		<input checked="" type="radio"/> Repair <input type="radio"/> Non AAR Repair <input type="radio"/> Inspection		3071		*AXLE 02	*SIDE L		
<div>AddDeleteSaveResetClearReturn to Search Results</div>									

legal notices | privacy rights | terms of service | contact us

© 2010 Railinc. All rights reserved.

Wayside Detection System Alerts and Data Summaries

- Detector Data Overview
- Data Interpretation Challenges
- Benefits of Data Summaries for Preventative Maintenance
- Interpreting Data Summary Information
- Accessing Data Summaries
- **Additional Information and Questions**



Data Summary Statistics

- Data Summaries Opened
 - WILD: 2,000,000
 - THD: 19,000
 - TADS: 40,000
- Actionable Alerts closed due to Autoclose (From 10/13 to 3/14)
 - WILD
 - Condemnable: 6,417
 - Mandatory: 84
 - THD: 131
 - ABD: 211



Future Data Summaries

- Wheel Temperature
 - End of 2014
 - Focusing on cold wheel detection (brake performance)
 - Part of the Inspection Quality Initiative



Summary of Summaries....

ount=17 Vehicle Yellow Performance Summary Output March 20 2013 9:25:18

VehicleId: **FX048298** Start:01/01/2013 00:00:00 End: 03/20/2013 23:59:59 [Vehicle Summary Download](#)

VehicleId	TrainDateTime	Lead End	Speed (mph)	Wheel Count	Axle Count	TS Count	Truck Count	Vehicle Count
FX048298	2013-01-01 06:51:00	A	54.57	0	0	0	<u>2</u>	0
FX048298	2013-01-01 20:18:00	A	51.5	0	0	0	<u>1</u>	0
FX048298	2013-01-12 18:25:00	B	48.4	<u>2</u>	0	0	0	0
FX048298	2013-01-14 02:22:00	B	41.8	<u>3</u>	0	0	0	0
FX048298	2013-01-15 16:23:00	B	38.53	0	0	0	0	0
FX048298	2013-01-25 18:07:00	A	54.03	0	0	0	<u>2</u>	0
FX048298	2013-01-29 11:38:00	A	41.3	<u>2</u>	0	0	<u>1</u>	0
FX048298	2013-01-31 01:53:00	A	32.5	<u>1</u>	0	0	0	0
FX048298	2013-02-05 01:23:00	B	49.5	<u>2</u>	0	0	0	0
FX048298	2013-02-06 01:13:00	B	54.4	<u>4</u>	0	0	0	0
FX048298	2013-02-06 16:57:00	B	32.25	0	0	0	0	0
FX048298	2013-02-15 19:21:00	A	53.65	0	0	0	<u>2</u>	0
FX048298	2013-02-20 03:55:00	A	55.8	<u>3</u>	0	0	0	0
FX048298	2013-02-21 11:25:00	A	40.3	<u>2</u>	0	0	0	0
FX048298	2013-02-25 22:34:00	B	48.0	<u>2</u>	0	0	0	0
FX048298	2013-02-27 02:11:00	B	40.6	<u>2</u>	0	0	0	0
FX048298	2013-03-03 19:58:00	B	49.6	<u>2</u>	0	0	0	0



Summary of Summaries....

Intellis Server:Prod2 User:admin WILD#ATSI_Vehicle_Inquiry Vehicle Events Reports Help&Manuals

RecordCount=2 Visit Frequency Output March 20 2013 9:40:57

VehicleId FX048298-048302 Start:01/01/2013 00:00:00 End: 03/20/2013 23:59:59 Visit Frequency Download

VehicleId	FirstDateTime	LastDateTime	Visit Count	Wheel Count	Axle Count	TS Count	Truck Count	Vehicle Count
FX048298	2013-01-01:06:51:00	2013-03-03:19:58:00	17	25	0	0	8	0
FX048299	2013-01-22:04:26:00	2013-01-27:11:23:00	4	0	0	0	0	0

Copyright ©2001-13 TTCI®. All rights reserved. | company info | terms of service | contact




[ABOUT RAILINC](#)
[PRODUCTS & SERVICES](#)
[COLLABORATION](#)
[REFERENCE FILES](#)

PRODUCTS & SERVICES

Products and Services Overview

Car Accounting

CEPM Project

Damage Prevention and Loading Services

Early Warning

Equipment Health

Equipment Repair

Financial Data Exchanges

Letters of Authorization

Mergers and Acquisitions

Messaging

Publications

Railroad Clearinghouse

Reference Files

Tracing Products

Transportation Management

Product Pages

[Products & Services](#)

Product and Service Overview

Railinc is an integral part of the North American rail industry. We maintain extensive industry databases, build intelligence services for railroads and support railroads, equipment owners and their supply chains. Class I, short line railroads and other rail professionals alike use Railinc's tools to manage their rail traffic.

Use the links below to view Railinc products and services.

Car Accounting:

[Car Hire Accounting Rates](#)

Damage Prevention and Loading Services:

[Damage Prevention and Loading Services](#)

Early Warning:

[Early Warning System](#)

Equipment Health:

[Equipment Health Management and Defective Car Tracking](#)

Equipment Repair:

[Equipment Repair and Maintenance](#)

User Guide

EHMS Web Demos

Introduction to EHMS: This web demo introduces EHMS and covers tasks including entering alert closures, searching equipment history and status, and receiving notifications.

[Click here to view this web demo.](#)

Last updated November 15, 2013

Related Links

- [EHMS User Guide](#)
- [EHMS User Group Site](#)
- [EHMS Equipment Health View User Guide](#)
- [InteRRIS Login](#)
- [Industry-wide Wheel Impact Measurement Variation](#)
- [EHMS Overview](#)
- [EHMS Equipment Health View](#)
- [Notification Flow Chart](#)
- [2007 Message Format](#)
- [Review of Wheel Impact Measurement Variation](#)

railinc.com

InteRRIS
Information

PRODUCTS & SERVICES

Products and Services
Overview

Car Accounting

CEPM Project

Clear Path System

Damage Prevention and
Loading Services

Early Warning

Equipment Health

- **Asset Health Data Summaries**

- DDCI System

- Equipment Health View

- Equipment Quality Reporting

[Products & Services](#) » [Equipment Health](#) » [Asset Health Data Summaries](#)

Asset Health Data Summaries

Railinc's Asset Health Data Summaries give customers a concise view of equipment health data collected from various sources to enable insights into equipment health. Industry participants make better use of the data to improve safety and efficiency. Users may view data summaries through the System (EHMS) application or through the data summaries via Railinc's website. Subscriptions are available for the data summaries via Railinc's website.

Customers may view summaries of equipment health data from Detectors (WILD), Trackside Hunting detectors of all severities, and other types of detectors on all railroads. Users will be able to view the information from the detectors after the information is received.

Data Summary
Information

Data Summary Page

Asset Health Data Summaries Web Demos

Introduction to Asset Health Data Summaries: This web demo introduces Asset Health Data Summaries and covers tasks related to viewing and exporting data summaries.

[Click here to view this web demo.](#)

Introduction to EHMS: This web demo introduces EHMS, the Railinc application through which data summaries are available. It covers tasks including entering alert closures, searching equipment history and status, and receiving notifications.

[Click here to view this web demo.](#)

Last updated February 6, 2014

Related Links

- [Asset Health Data Summaries FAQs](#)
- [EHV User Guide](#)

- [EHMS User Guide](#)
- [Asset Health Data Summaries Definitions \(SSO log-in required\)](#)

Data Summary
Definition





Questions?